

How Much Magic Is In Angular2?

By Rodric Haddad

@rodyhaddad

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Demo

The image features two LEGO minifigures in motion. On the left, a male minifigure with brown hair, a yellow face, and a blue long-sleeved shirt is running towards the right. He is wearing orange pants. On the right, a female minifigure with black hair in a ponytail, a yellow face, and a black long-sleeved shirt is running towards the left. She is wearing black pants. They are running on a green LEGO baseplate. The background is a solid blue color with a subtle pattern of small, light blue dots. A black rectangular box with a white border is centered horizontally across the middle of the image, containing the text "Let's build it!".

Let's build it!

Angular2
+
Typescript



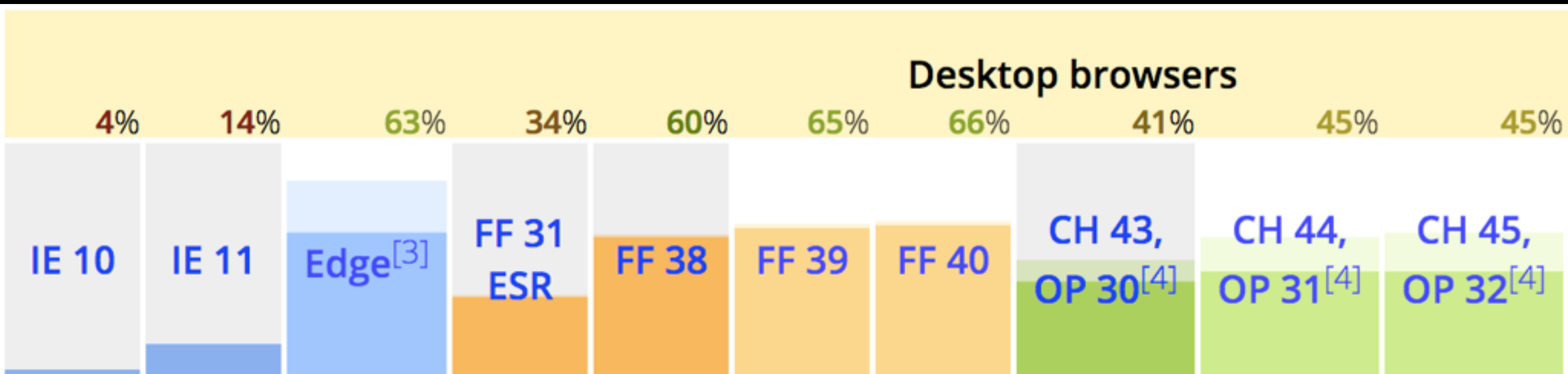
Angular2
+
ES5



Angular1.4
+
ES5

TypeScript

ES6 + Types + Annotations



<https://kangax.github.io/compat-table/es6/>

[1.4.0-beta.5/](#)

[1.4.0-beta.6/](#)

[1.4.0-rc.0/](#)

[1.4.0-rc.1/](#)

[1.4.0-rc.2/](#)

[1.4.0/](#)

[2.0.0-alpha.19/](#)

[2.0.0-alpha.20/](#)

[2.0.0-alpha.22/](#)

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[../](#)

[angular2.dev.js](#)

[angular2.js](#)

[angular2.min.js](#)

[angular2.sfx.dev.js](#)

[router.dev.js](#)

[router.dev.js.map](#)



EXPLORE

▶ WORKING FILES 1 UNSA...

▲ TOURISTS-ON-A-TRIP

▲ src

index.html



• index.html /src

```
1 <!doctype html>
2 <html>
3   <head>
4     <title>Tourists on a Trip</title>
5
6   </head>
7   <body>
8
9   </body>
10 </html>
```





EXPLORE

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▲ src

index.html



• index.html /src

```
1 <!doctype html>
2 <html>
3   <head>
4     <title>Tourists on a Trip</title>
5     <script src="/vendor/angular2.dev.js"></script>
6   </head>
7   <body>
8
9   </body>
10 </html>
```





EXPLORE

▶ WORKING FILES 1 UNSA...

▲ TOURISTS-ON-A-TRIP

▲ src

index.html



• index.html /src

```
1 <!doctype html>
2 <html>
3   <head>
4     <title>Tourists on a Trip</title>
5     <script src="/vendor/system@0.16.11.js"></script>
6     <script src="/vendor/angular2.dev.js"></script>
7   </head>
8   <body>
9
10  </body>
11 </html>
```





EXPLORE

▶ WORKING FILES

▲ TOURISTS-ON-A-TRIP

▲ src

index.html



index.html /src

```
1 <!doctype html>
2 <html>
3   <head>
4     <title>Tourists on a Trip</title>
5     <script src="/vendor/traceur-runtime.js"></script>
6     <script src="/vendor/system@0.16.11.js"></script>
7     <script src="/vendor/angular2.dev.js"></script>
8   </head>
9   <body>
10
11   </body>
12 </html>
```



tourists-on-a-trip\$ npm

10:00:00 AM

10

10

10:00:00 AM

10:00:00 AM

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10:00:00 AM

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```
tourists-on-a-trip$ npm install socket.io --save
```

```
tourists-on-a-trip$ tsd query es6-promise rx rx-lite angular2 socket.io-client --action install --save
```



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▶ es6-promise

▶ rx

▶ socket.io-client

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▶ es6-promise

▶ rx

▶ socket.io-client

tsd.d.ts

tsd.json



tsd.d.ts /typings



```
1 /// <reference path="angular2/angular2.d.ts" />
2 /// <reference path="es6-promise/es6-promise.d.ts" />
3 /// <reference path="rx/rx-lite.d.ts" />
4 /// <reference path="rx/rx.d.ts" />
5 /// <reference path="socket.io-client/socket.io-client.d.ts" />
6
```




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• tsconfig.json /

```
1 {  
2   "compilerOptions": {  
3     "emitDecoratorMetadata": true,  
4     "module": "amd",  
5     "target": "es5"  
6   },  
7   "filesGlob": [  
8     "**/*.ts",  
9     "!./node_modules/**/*.ts"  
10  ]  
11 }
```



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```
1 class TouristsTrippingApp {  
2   |  
3 }
```



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• tourists-tripping.ts /src

```
1  /// <reference path="../../typings/tsd.d.ts" />
2  |
3
4  class TouristsTrippingApp {
5
6  }
```



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• tourists-tripping.ts /src

```
1  /// <reference path="../../typings/tsd.d.ts" />
2  import {Component, View, bootstrap} from 'angular2/angular2';
3
4  class TouristsTrippingApp {
5
6  }
```



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• tourists-tripping.ts /src

```
1  /// <reference path="../../typings/tsd.d.ts" />
2  import {Component, View, bootstrap} from 'angular2/angular2';
3
4  @Component({
5      selector: 'tourists-tripping-app'
6  })
7  class TouristsTrippingApp {
8
9  }
```



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1 Works!



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• index.html /src

```
1 <!doctype html>
2 <html>
3   <head>
4     <title>Tourists on a Trip</title>
5     <link href="/vendor/bootstrap.min.css" rel="stylesheet"></link>
6     <link href="/vendor/material-fullpalette.css" rel="stylesheet"></link>
7     <script src="/vendor/traceur-runtime.js"></script>
8     <script src="/vendor/system@0.16.11.js"></script>
9     <script src="/vendor/angular2.dev.js"></script>
10  </head>
11  <body>
12    <tourists-tripping-app></tourists-tripping-app>
13  </body>
14 </html>
```



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```
1 <!doctype html>
2 <html>
3   <head>
4     <title>Tourists on a Trip</title>
5     <link href="/vendor/bootstrap.min.css" rel="stylesheet"></link>
6     <link href="/vendor/material-fullpalette.css" rel="stylesheet"></link>
7     <script src="/vendor/traceur-runtime.js"></script>
8     <script src="/vendor/system@0.16.11.js"></script>
9     <script src="/vendor/angular2.dev.js"></script>
10  </head>
11  <body>
12    <tourists-tripping-app></tourists-tripping-app>
13
14    <script>
15      System.import('tourists-tripping');|
16    </script>
17  </body>
18 </html>
```




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tourists-tripping.ts /src

```
1  /// <reference path="../../typings/tsd.d.ts" />
2  import {Component, View, bootstrap} from 'angular2/angular2';
3
4  @Component({
5      selector: 'tourists-tripping-app'
6  })
7  @View({
8      templateUrl: 'tourists-tripping.html'
9  })
10 class TouristsTrippingApp {
11
12 }
13
14 bootstrap(TouristsTrippingApp);
```



```
tourists-on-a-trip$ tsc -w
message TS6042: Compilation complete. Watching for file changes.
```

```
tourists-on-a-trip$ cd src/
```

```
src$ http-server .
```

```
Starting up http-server, serving . on: http://0.0.0.0:8080
```

```
Hit CTRL-C to stop the server
```

```
█
```



Works!





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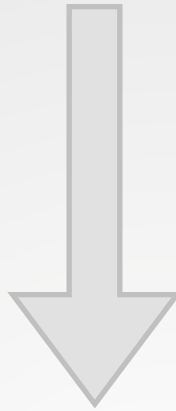
tsd.json

tourists-tripping.js /src

```
8 };
9 if (typeof __metadata !== "function") __metadata = function (k, v) {
10     if (typeof Reflect === "object" && typeof Reflect.metadata === "function") return Reflect.metadata(k, v);
11 };
12 define(["require", "exports", 'angular2/angular2'], function (require, exports, angular2_1) {
13     var TouristsTrippingApp = (function () {
14         function TouristsTrippingApp() {
15         }
16         TouristsTrippingApp = __decorate([
17             angular2_1.Component({
18                 selector: 'tourists-tripping-app'
19             }),
20             angular2_1.View({
21                 templateUrl: 'tourists-tripping.html'
22             }),
23             __metadata('design:paramtypes', [])
24         ], TouristsTrippingApp);
25         return TouristsTrippingApp;
26     })();
27     angular2_1.bootstrap(TouristsTrippingApp);
28 });
29
```

Neighborhoods

Service:
NeighborhoodHandler



Model: Neighborhood

- name
- TTAmount



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```
1  /// <reference path="../../typings/tsd.d.ts" />
2  import {Component, View, bootstrap} from 'angular2/angular2';
3
4  @Component({
5      selector: 'tourists-tripping-app'
6  })
7  @View({
8      templateUrl: 'tourists-tripping.html'
9  })
10 class TouristsTrippingApp {
11
12 }
13
14 bootstrap(TouristsTrippingApp);
```





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neighborhood.ts /src/service/neighborhood-handler



1



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• neighborhood.ts /src/service/neighborhood-handler

```
1 export class Neighborhood {  
2     name:String;  
3     TTAmt:Number;  
4 }
```



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neighborhood.ts /src/service/neighborhood-handler

```
1 export class Neighborhood {
2     name:String;
3     TTAmt:Number;
4
5     constructor(name:String, TTAmt:Number = 0) {
6         this.name = name;
7         this.TTAmt = TTAmt;
8     }
9 }
```



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neighborhood.ts /src/service/neighborhood-handler

```
1 export class Neighborhood {
2     name:String;
3     TTAmt:Number;
4
5     constructor(name:String, TTAmt:Number = 0) {
6         this.name = name;
7         this.TTAmt = TTAmt;
8     }
9
10    setTTAmt(value:any) {
11        this.TTAmt = parseFloat(value);
12        return this;
13    }
14 }
```



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neighborhood-handler.ts /src/service/neighborhood-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2
3  export class NeighborhoodHandler {
4
5  }
```



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• neighborhood-handler.ts /src/service/neighborhood-handler

```
1 /// <reference path="../../../../typings/tsd.d.ts" />
2 import {Neighborhood} from './neighborhood';
3
4 export class NeighborhoodHandler {
5
6 }
```



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neighborhood-handler.ts /src/service/neighborhood-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Neighborhood} from './neighborhood';
3
4  export class NeighborhoodHandler {
5      neighborhoods: Neighborhood[];
6
7      constructor() {
8          this.neighborhoods = [];
9      }
10
11 }
```




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• tourists-tripping.ts /src

```
1  /// <reference path="../../typings/tsd.d.ts" />
2  import {Component, View, bootstrap} from 'angular2/angular2';
3  import {NeighborhoodHandler} from 'service/neighborhood-handler/neighborho
4
5  @Component({
6    selector: 'tourists-tripping-app',|
7  })
8  @View({
9    templateUrl: 'tourists-tripping.html'
10 })
11 class TouristsTrippingApp {
12
13 }
14
15 bootstrap(TouristsTrippingApp);
```




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• tourists-tripping.ts /src

```
1  /// <reference path="../../typings/tsd.d.ts" />
2  import {Component, View, bootstrap} from 'angular2/angular2';
3  import {NeighborhoodHandler} from 'service/neighborhood-handler/neighborho
4
5  @Component({
6      selector: 'tourists-tripping-app',
7      appInjector: [NeighborhoodHandler]
8  })
9  @View({
10     templateUrl: 'tourists-tripping.html'
11 })
12 class TouristsTrippingApp {
13     |
14 }
15
16 bootstrap(TouristsTrippingApp);
```



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• tourists-tripping.ts /src

```
1  /// <reference path="../../typings/tsd.d.ts" />
2  import {Component, View, bootstrap} from 'angular2/angular2';
3  import {NeighborhoodHandler} from 'service/neighborhood-handler/neighborho
4
5  @Component({
6      selector: 'tourists-tripping-app',
7      appInjector: [NeighborhoodHandler]
8  })
9  @View({
10     templateUrl: 'tourists-tripping.html'
11 })
12 class TouristsTrippingApp {
13     |
14     constructor(neighborhoodHandler: NeighborhoodHandler) {
15
16     }
17
18 }
19
20 bootstrap(TouristsTrippingApp);
```



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```
1  /// <reference path="../../typings/tsd.d.ts" />
2  import {Component, View, bootstrap} from 'angular2/angular2';
3  import {NeighborhoodHandler} from 'service/neighborhood-handler/neighborhood-handler';
4  import {Neighborhood} from 'service/neighborhood-handler/neighborhood';
5
6  @Component({
7      selector: 'tourists-tripping-app',
8      appInjector: [NeighborhoodHandler]
9  })
10 @View({
11     templateUrl: 'tourists-tripping.html'
12 })
13 class TouristsTrippingApp {
14     neighborhoods: Neighborhood[]
15
16     constructor(neighborhoodHandler: NeighborhoodHandler) {
17         this.neighborhoods = neighborhoodHandler.neighborhoods;
18     }
19
20 }
21
22 bootstrap(TouristsTrippingApp);
```



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• tourists-tripping.html /src

```
1 <h1>
2   Tourists on a Trip
3 </h1>
4
5 <div class="row" *ng-for="#neighborhood of neighborhoods;">
6   |
7 </div>
```



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• tourists-tripping.html /src

```
1 <h1>
2   Tourists on a Trip
3 </h1>
4
5 <div class="row" *ng-for="#neighborhood of neighborhoods;">
6   <div class="col-md-12">
7     {{ neighborhood.name }}
8     {{ neighborhood.TTAmount }}
9   </div>
10 </div>
```



```
class TouristsTrippingApp {  
    neighborhoods: Neighborhood[]  
  
    constructor(neighborhoodHandler: NeighborhoodHandler) {  
        this.neighborhoods = neighborhoodHandler.neighborhoods;  
    }  
  
}
```

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Array.prototype.push()

▼ SHOW SIDEBAR

Summary

The **push()** method adds one or more elements to the end of an array and returns the new length of the array.

Syntax

```
arr.push(element1, ..., elementN)
```



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```
6 @Component({
7   selector: 'tourists-tripping-app',
8   appInjector: [NeighborhoodHandler]
9 })
10 @View({
11   templateUrl: 'tourists-tripping.html',
12   directives: [NgFor]
13 })
14 class TouristsTrippingApp {
15   neighborhoods: Neighborhood[]
16
17   constructor(neighborhoodHandler: NeighborhoodHandler) {
18     this.neighborhoods = neighborhoodHandler.neighborhoods;
19   }
20
21 }
22
23 bootstrap(TouristsTrippingApp);
```




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```
6 @Component({
7   selector: 'tourists-tripping-app',
8   appInjector: [NeighborhoodHandler]
9 })
10 @View({
11   templateUrl: 'tourists-tripping.html',
12   directives: [NgFor]
13 })
14 class TouristsTrippingApp {
15   neighborhoods: Neighborhood[]
16
17   constructor(neighborhoodHandler: NeighborhoodHandler) {
18     this.neighborhoods = neighborhoodHandler.neighborhoods;
19
20     neighborhoodHandler.pushNeighborhood(
21       '...'
22     )
23   }
24
25 }
26
27 bootstrap(TouristsTrippingApp);
```



EXPLORE

▶ WORKING FILES

▶ TOURISTS-ON-A-TRIP

▶ node_modules

▶ src

▶ service

▶ neighborhood-handler

neighborhood.js

neighborhood.ts

neighborhood-handler.js

neighborhood-handler.ts

▶ vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

▶ typings

tsconfig.json

tsd.json



tourists-tripping.ts /src



```
6 @Component({
7   selector: 'tourists-tripping-app',
8   appInjector: [NeighborhoodHandler]
9 })
10 @View({
11   templateUrl: 'tourists-tripping.html',
12   directives: [NgFor]
13 })
14 class TouristsTrippingApp {
15   neighborhoods: Neighborhood[]
16
17   constructor(neighborhoodHandler: NeighborhoodHandler) {
18     this.neighborhoods = neighborhoodHandler.neighborhoods;
19
20     neighborhoodHandler.pushNeighborhood(
21       'Central Amsterdam',
22       'Red Light District',
23       'Leidseplein',
24       'Oud Zuid',
25       'Rembrandtplein',
26       'Jordaan',
27       'The Plantagebuurt',
28       'De Pijp'
29     )
30   }
```



EXPLORE

▶ WORKING FILES 1 UNSAVED

▶ TOURISTS-ON-A-TRIP

▶ node_modules

▶ src

▶ service

▶ neighborhood-handler

neighborhood.js

neighborhood.ts

neighborhood-handler.js

neighborhood-handler.ts

▶ vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

▶ typings

tsconfig.json

tsd.json

• neighborhood-handler.ts /src/service/neighborhood-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Neighborhood} from './neighborhood';
3
4  export class NeighborhoodHandler {
5      neighborhoods: Neighborhood[];
6
7      constructor() {
8          this.neighborhoods = [];
9      }
10
11      pushNeighborhood(...names:String[]) {
12
13      }
14  }
```



EXPLORE

WORKING FILES 1 UNSAVED

TOURISTS-ON-A-TRIP

node_modules

src

service

neighborhood-handler

neighborhood.js

neighborhood.ts

neighborhood-handler.js

neighborhood-handler.ts

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

tsconfig.json

tsd.json

neighborhood-handler.ts /src/service/neighborhood-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Neighborhood} from './neighborhood';
3
4  export class NeighborhoodHandler {
5      neighborhoods: Neighborhood[];
6
7      constructor() {
8          this.neighborhoods = [];
9      }
10
11     pushNeighborhood(...names:String[]) {
12         names.map(
13             (name) => new Neighborhood(name)
14         )
15     }
16 }
```



EXPLORE

WORKING FILES 1 UNSAVED

TOURISTS-ON-A-TRIP

node_modules

src

service

neighborhood-handler

neighborhood.js

neighborhood.ts

neighborhood-handler.js

neighborhood-handler.ts

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

tsconfig.json

tsd.json

neighborhood-handler.ts /src/service/neighborhood-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Neighborhood} from './neighborhood';
3
4  export class NeighborhoodHandler {
5      neighborhoods: Neighborhood[];
6
7      constructor() {
8          this.neighborhoods = [];
9      }
10
11     pushNeighborhood(...names:String[]) {
12         this.neighborhoods.push(
13             ...names.map(
14                 (name) => new Neighborhood(name)
15             )
16         );
17     }
18 }
```


Tourists on a Trip

Central Amsterdam 0
Red Light District 0
Leidseplein 0
Oud Zuid 0
Rembrandtplein 0
Jordaan 0
The Plantagebuurt 0
De Pijp 0

Component:

PeopleCount

Central Amsterdam

How many Tourists on a trip do you see?

Value: 0

REPORT

```
<people-count  
  title="..."  
  amount="..."  
></people-count>
```



EXPLORE

WORKING FILES

TOURISTS-ON-A-TRIP

node_modules

src

component

service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

tsconfig.json

tsd.json

neighborhood-handler.ts /src/service/neighborhood-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Neighborhood} from '../neighborhood';
3
4  export class NeighborhoodHandler {
5      neighborhoods: Neighborhood[];
6
7      constructor() {
8          this.neighborhoods = [];
9      }
10
11     pushNeighborhood(...names:String[]) {
12         this.neighborhoods.push(
13             ...names.map(
14                 (name) => new Neighborhood(name)
15             )
16         );
17     }
18 }
```




EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

node_modules

src

component

service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

tsconfig.json

tsd.json

• tourists-tripping.html /src

```
1 <h1>
2   Tourists on a Trip
3 </h1>
4
5 <div class="row" *ng-for="#neighborhood of neighborhoods;">
6   <div class="col-md-12">
7     {{ neighborhood.name }}
8     {{ neighborhood.TTAmount }}
9     <people-count
10      title="neighborhood.name"
11      amount="neighborhood.TTAmount"
12    ></people-count>
13   </div>
14 </div>
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

node_modules

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neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

tsconfig.json

tsd.json

tourists-tripping.html /src

```
1 <h1>
2   Tourists on a Trip
3 </h1>
4
5 <div class="row" *ng-for="#neighborhood of neighborhoods;">
6   <div class="col-md-12">
7     <people-count
8       [title]="neighborhood.name"
9       [amount]="neighborhood.TTAmount"
10    ></people-count>
11   </div>
12 </div>
```



EXPLORE

WORKING FILES

TOURISTS-ON-A-TRIP

node_modules

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neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts



people-count.ts /src/component/people-count



```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2
3  export class PeopleCount {
4      title: String;
5      amount: Number;
6  }
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

node_modules

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people-count.h...

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people-count.ts

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neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

• people-count.ts /src/component/people-count

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Component, View} from 'angular2/angular2';
3
4  @Component({
5      selector: 'people-count'
6  })
7  @View({
8      templateUrl: 'component/people-count/people-count.html'
9  })
10 export class PeopleCount {
11     title: String;
12     amount: Number;
13 }
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

node_modules

src

component

people-count

people-count.h...

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people-count.ts

service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

• people-count.ts /src/component/people-count

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Component, View} from 'angular2/angular2';
3
4  @Component({
5      selector: 'people-count',
6      properties: ['title', 'amount']
7  })
8  @View({
9      templateUrl: 'component/people-count/people-count.html'
10 })
11 export class PeopleCount {
12     title: String;
13     amount: Number;
14 }
```



EXPLORE

WORKING FILES

TOURISTS-ON-A-TRIP

node_modules

src

component

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people-count.js

people-count.ts

service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js



people-count.ts /src/component/people-count

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Component, View} from 'angular2/angular2';
3
4  @Component({
5      selector: 'people-count',
6      properties: ['title: tt-title', 'amount: tt-amount']
7  })
8  @View({
9      templateUrl: 'component/people-count/people-count.html'
10 })
11 export class PeopleCount {
12     title: String;
13     amount: Number;
14 }
```




EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

node_modules

src

component

people-count

people-count.h...

people-count.js

people-count.ts

service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

• tourists-tripping.html /src

```
1 <h1>
2   Tourists on a Trip
3 </h1>
4
5 <div class="row" *ng-for="#neighborhood of neighborhoods;">
6   <div class="col-md-12">
7     <people-count
8       [tt-title]="neighborhood.name"
9       [tt-amount]="neighborhood.TTAmount"
10    ></people-count>
11   </div>
12 </div>
```



EXPLORE

WORKING FILES 1 UNSA...

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service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

people-count.html /src/component/people-count

```
1
2 <div class="panel panel-default">
3   <div class="panel-heading">
4     {{ tiel }}
5   </div>
6   <div class="panel-body">
7     <p>How many Tourists on a trip do you see?</p>
8     <form>
9
10    </form>
11  </div>
12  <div class="panel-footer">
13    <button type="button" class="btn btn-success">Report</button>
14  </div>
15 </div>
```




EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

node_modules

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component

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people-count.h...

people-count.js

people-count.ts

service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

people-count.html /src/component/people-count

```
1
2 <div class="panel panel-default">
3   <div class="panel-heading">
4     {{ title }}
5   </div>
6   <div class="panel-body">
7     <p>How many Tourists on a trip do you see?</p>
8     <form>
9       {{ amount }}
10    </form>
11  </div>
12  <div class="panel-footer">
13    <button type="button" class="btn btn-success">Report</button>
14  </div>
15 </div>
```

Tourists on a Trip

👤 👤 👤 👤 👤 👤 👤 👤 👤 👤





EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

people-count.h...

people-count.js

people-count.ts

service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

tsconfig.json

tsd.json

• tourists-tripping.ts /src

```
1  /// <reference path="../../typings/tsd.d.ts" />
2  import {Component, View, bootstrap, NgFor} from 'angular2/angular2';
3  import {NeighborhoodHandler} from 'service/neighborhood-handler/neighborhood-handl
4  import {Neighborhood} from 'service/neighborhood-handler/neighborhood';
5  import {PeopleCount} from 'component/people-count/people-count';
6
7  @Component({
8      selector: 'tourists-tripping-app',
9      appInjector: [NeighborhoodHandler]
10 })
11 @View({
12     templateUrl: 'View(arg: _ViewArg): (target: any) => any
13     directives: [NgFor, PeopleCount]
14 })
15 class TouristsTrippingApp {
16     neighborhoods: Neighborhood[]
17
18     constructor(neighborhoodHandler: NeighborhoodHandler) {
19         this.neighborhoods = neighborhoodHandler.neighborhoods;
20
21         neighborhoodHandler.pushNeighborhood(
22             'Central Amsterdam',
23             'Red Light District',
24             'Leidseplein',
25             'Oud Zuid',
```

Forms



EXPLORE

WORKING FILES

TOURISTS-ON-A-TRIP

component

people-count

people-count.h...

people-count.js

people-count.ts

service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings



tourists-tripping.html /src



```
1 <h1>
2   Tourists on a Trip
3 </h1>
4
5 <div class="row" *ng-for="#neighborhood of neighborhoods;">
6   <div class="col-md-12">
7     <people-count
8       [tt-title]="neighborhood.name"
9       [tt-amount]="neighborhood.TTAmount"
10    >/people-count>
11  </div>
12 </div>
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

component

people-count

people-count.h...

people-count.js

people-count.ts

service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

• people-count.ts /src/component/people-count

```
2 import {Component, View, Control} from 'angular2/angular2';
3
4 @Component({
5   selector: 'people-count',
6   properties: ['title: tt-title', 'amount: tt-amount']
7 })
8 @View({
9   templateUrl: 'component/people-count/people-count'
10 })
11 export class PeopleCount {
12   title: String;
13   amount: Number;
14
15   amountControl: Control;
16   constructor() {
17     this.amountControl = new Control();
18   }
19 }
```




EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

component

people-count

people-count.h...

people-count.js

people-count.ts

service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

• people-count.ts /src/component/people-count

```
2 import {Component, View, Control, ControlGroup} from 'angular2/angular2';
3
4 @Component({
5   selector: 'people-count',
6   properties: ['title: tt-title', 'amount: tt-amount']
7 })
8 @View({
9   templateUrl: 'component/people-count/people-count'
10 })
11 export class PeopleCount {
12   title: String;
13   amount: Number;
14
15   amountControl: Control;
16   peopleCountForm: ControlGroup;
17   constructor() {
18     this.amountControl = new Control();
19
20
21   }
22 }
```




EXPLORE

▶ WORKING FILES 1 UNSA...

▶ TOURISTS-ON-A-TRIP

└ component

└┬ people-count

people-count.h...

people-count.js

people-count.ts

└ service

└┬ neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

▶ vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

▶ typings

• people-count.ts /src/component/people-count

```
2 import {Component, View, Control, ControlGroup, FormBuilder} from 'angular2/angular2'
3
4 @Component({
5   selector: 'people-count',
6   properties: ['title: tt-title', 'amount: tt-amount']
7 })
8 @View({
9   templateUrl: 'component/people-count/people-count'
10 })
11 export class PeopleCount {
12   title: String;
13   amount: Number;
14
15   amountControl: Control;
16   peopleCountForm: ControlGroup;
17   constructor(builder: FormBuilder) {
18     this.amountControl = new Control();
19
20     this.peopleCountForm = builder.group({
21       amount: this.amountControl
22     });
23   }
24 }
```



EXPLORE

▶ WORKING FILES

◀ TOURISTS-ON-A-TRIP

◀ component

◀ people-count

people-count.h...

people-count.js

people-count.ts

◀ service

◀ neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

▶ vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

▶ typings

people-count.ts /src/component/people-count

```
2 import {Component, View, Control, ControlGroup, FormBuilder} from 'angular2/angular2'
3
4 @Component({
5   selector: 'people-count',
6   properties: ['Component(arg: _ComponentArg): (target: any) => any'],
7   appInjector: [FormBuilder]
8 })
9 @View({
10   templateUrl: 'component/people-count/people-count'
11 })
12 export class PeopleCount {
13   title: String;
14   amount: Number;
15
16   amountControl: Control;
17   peopleCountForm: ControlGroup;
18   constructor(builder: FormBuilder) {
19     this.amountControl = new Control();
20
21     this.peopleCountForm = builder.group({
22       amount: this.amountControl
23     });
24   }
25 }
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

component

people-count

people-count.h...

people-count.js

people-count.ts

service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

• people-count.html /src/component/people-count

```
1
2 <div class="panel panel-default">
3   <div class="panel-heading">
4     {{ title }}
5   </div>
6   <div class="panel-body">
7     <p>How many Tourists on a trip do you see?</p>
8     <form>
9       <input type="range" />
10      Value: |{{ amountControl.value }}|
11    </form>
12  </div>
13  <div class="panel-footer">
14    <button type="button" class="btn btn-success">Report</button>
15  </div>
16 </div>
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

component

people-count

people-count.h...

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service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

• people-count.html /src/component/people-count

```
1
2 <div class="panel panel-default">
3   <div class="panel-heading">
4     {{ title }}
5   </div>
6   <div class="panel-body">
7     <p>How many Tourists on a trip do you see?</p>
8     <form [ng-form-model]="peopleCountForm">
9       <input type="range" ng-control="amount" />
10      Value: {{ amountControl.value }}
11    </form>
12  </div>
13  <div class="panel-footer">
14    <button type="button" class="btn btn-success">Report</button>
15  </div>
16 </div>
```




EXPLORE

▶ WORKING FILES

◀ TOURISTS-ON-A-TRIP

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neighborhood.js

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▶ vendor

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tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

▶ typings

people-count.ts /src/component/people-count

```
2 import {Component, View, Control, ControlGroup, FormBuilder, formDirectives} from
3
4 @Component({
5   selector: 'people-count',
6   properties: ['title: tt-title', 'amount: tt-amount'],
7   appInjector: [FormBuilder]
8 })
9 @View({
10   templateUrl: 'component/people-count/people-count',
11   directives: [formDirectives]
12 })
13 export class PeopleCount {
14   title: String;
15   amount: Number;
16
17   amountControl: Control;
18   peopleCountForm: ControlGroup;
19   constructor(builder: FormBuilder) {
20     this.amountControl = new Control();
21
22     this.peopleCountForm = builder.group({
23       amount: this.amountControl
24     });
25   }
26 }
```



EXPLORE

WORKING FILES 1 UNSA...

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neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

• people-count.ts /src/component/people-count

```
2 import {Component, View, Control, ControlGroup, FormBuilder, formDirectives, onChange}
3
4 @Component({
5   selector: 'people-count',
6   properties: ['title: tt-title', 'amount: tt-amount'],
7   appInjector: [Component(arg: _ComponentArg): (target: any) => any],
8   lifecycle: [onChange]
9 })
10 @View({
11   templateUrl: 'component/people-count/people-count',
12   directives: [formDirectives]
13 })
14 export class PeopleCount {
15   title: String;
16   amount: Number;
17
18   amountControl: Control;
19   peopleCountForm: ControlGroup;
20   constructor(builder: FormBuilder) {
21     this.amountControl = new Control();
22
23     this.peopleCountForm = builder.group({
24       amount: this.amountControl
25     });
26   }
```



EXPLORE

WORKING FILES

TOURISTS-ON-A-TRIP

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people-count.ts

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neighborhood-ha...

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neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

people-count.ts /src/component/people-count

```
21 this.amountControl = new FormControl(),
22
23 this.peopleCountForm = builder.group({
24   amount: this.amountControl
25 });
26 }
27
28 onChange() {
29   this.amountControl.updateValue(this.amount);
30 }
31 }
```


One Way Data-binding

Tourists on a Trip

Central Amsterdam

How many Tourists on a trip do you see?

Value: 0

REPORT

Red Light District

How many Tourists on a trip do you see?

Value: 0

REPORT



Leidseplein

How many Tourists on a trip do you see?

Value: 0

REPORT



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

component

people-count

people-count.h...

people-count.js

people-count.ts

service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

• tourists-tripping.html /src

```
1 <h1>
2   Tourists on a Trip
3 </h1>
4
5 <div class="row" *ng-for="#neighborhood of neighborhoods;">
6   <div class="col-md-12">
7     ModelValue: {{ neighborhood.TTAmount }}
8     <people-count
9       [tt-title]="neighborhood.name"
10      [tt-amount]="neighborhood.TTAmount"
11    ></people-count>
12   </div>
13 </div>
```

Tourists on a Trip

ModelValue: 0

Central Amsterdam

How many Tourists on a trip do you see?

Value: 0

REPORT

ModelValue: 0

Red Light District

How many Tourists on a trip do you see?

Value: 0

REPORT

ModelValue: 0

Leidseplein

How many Tourists on a trip do you see?

Value: 0

REPORT



EXPLORE

▶ WORKING FILES

▲ TOURISTS-ON-A-TRIP

▲ component

▲ people-count

people-count.h...

people-count.js

people-count.ts

▲ service

▲ neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

▶ vendor

index.html

tourists-tripping.html

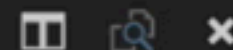
tourists-tripping.js

tourists-tripping.ts

▶ typings



tourists-tripping.html /src



```
1 <h1>
2   Tourists on a Trip
3 </h1>
4
5 <div class="row" *ng-for="#neighborhood of neighborhoods;">
6   <div class="col-md-12">
7     ModelValue: {{ neighborhood.TTAmount }}
8     <people-count
9       [tt-title]="neighborhood.name"
10      [tt-amount]="neighborhood.TTAmount"
11      (tt-amount-change)="neighborhood.setTTAmount($event.amount)"
12    ></people-count>
13  </div>
14 </div>
```



EXPLORE

▶ WORKING FILES 1 UNSA...

◀ TOURISTS-ON-A-TRIP

◀ component

◀ people-count

people-count.h...

people-count.js

people-count.ts

◀ service

◀ neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

▶ vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

▶ typings

• people-count.ts /src/component/people-count

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Component, View, Control, ControlGroup, FormBuilder, formDirectives, onChange}
3
4  @Component({
5      selector: 'people-count',
6      properties: ['title: tt-title', 'amount: tt-amount'],
7      appInjector: [FormBuilder],
8      lifecycle: [onChange],
9      events: ['ttAmountChange']
10 })
11 @View({
12     templateUrl: 'component/people-count/people-count',
13     directives: [formDirectives]
14 })
15 export class PeopleCount {
16     title: String;
17     amount: Number;
18
19     amountControl: Control;
20     peopleCountForm: ControlGroup;
21     constructor(builder: FormBuilder) {
22         this.amountControl = new Control();
23
24         this.peopleCountForm = builder.group({
25             amount: this.amountControl
```




EXPLORE

▶ WORKING FILES

◀ TOURISTS-ON-A-TRIP

◀ component

◀ people-count

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people-count.js

people-count.ts

◀ service

◀ neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

▶ vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

▶ typings

people-count.ts /src/component/people-count

```
15 export class PeopleCount {
16     title: String;
17     amount: Number;
18
19     ttAmountChange: EventEmitter;
20
21     amountControl: Control;
22     peopleCountForm: ControlGroup;
23     constructor(builder: FormBuilder) {
24         this.ttAmountChange = new EventEmitter();
25
26         this.amountControl = new Control();
27
28         this.peopleCountForm = builder.group({
29             amount: this.amountControl
30         });
31     }
32
33     onChange() {
34         this.amountControl.updateValue(this.amount);
35     }
36 }
```




EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

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neighborhood-...

vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

• people-count.html /src/component/people-count

```
1
2 <div class="panel"
3   <div class="panel"
4     {{ title }}
5   </div>
6   <div class="panel"
7     <p>How many
8     <form [ng-
9       <input
10        Value:
11      </form>
12    </div>
13    <div class="panel"
14      <button ty
15        (click)="reportAmount()" Report</button>
16    </div>
17  </div>
```

accesskey
autofocus
class
contenteditable
contextmenu
data-ng-app
data-ng-bind
data-ng-bindhtml
data-ng-bindtemplate
data-ng-blur
data-ng-change
data-ng-checked



EXPLORE

▶ WORKING FILES

◀ TOURISTS-ON-A-TRIP

◀ component

◀ people-count

people-count.h...

people-count.js

people-count.ts

◀ service

◀ neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

▶ vendor

index.html

tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

▶ typings

people-count.ts /src/component/people-count



```
18
19   ttAmountChange: EventEmitter;
20
21   amountControl: Control;
22   peopleCountForm: ControlGroup;
23   constructor(builder: FormBuilder) {
24     this.ttAmountChange = new EventEmitter();
25
26     this.amountControl = new Control();
27
28     this.peopleCountForm = builder.group({
29       amount: this.amountControl
30     });
31   }
32
33   onChange() {
34     this.amountControl.updateValue(this.amount);
35   }
36
37   reportAmount() {
38     var event = {
39       amount: this.amountControl.value
40     };
41     this.ttAmountChange.next(event);|
42   }
```

Tourists on a Trip

ModelValue: 0

Central Amsterdam

How many Tourists on a trip do you see?

Value: 0

REPORT

ModelValue: 0

Red Light District

How many Tourists on a trip do you see?

Value: 0

REPORT

ModelValue: 0

Leidseplein

How many Tourists on a trip do you see?

Value: 0

REPORT

Service:

SocketHandler

Tourists on a Trip

ModelValue: 0

Central Amsterdam

How many Tourists on a trip do you see?

Value: 0

REPORT

ModelValue: 0

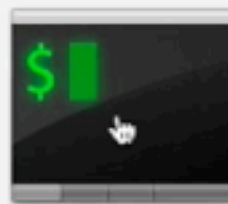
Red Light District

How many Tourists on a trip do you

Value: 0



QuickTime Player



REPORT

ModelValue: 0

Leidseplein

How many Tourists on a trip do you see?

Value: 0

REPORT



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

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neighborhood.ts

neighborhood-...

neighborhood-...

socket-handler

socket-handler.ts

vendor

index.html

tourists-tripping.html

tourists-tripping.js

• socket-handler.ts /src/service/socket-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2
3  export class SocketHandler {
4
5  }
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

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neighborhood-...

neighborhood-...

socket-handler

socket-handler.ts

vendor

index.html

tourists-tripping.html

tourists-tripping.js

• socket-handler.ts /src/service/socket-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2
3  export class SocketHandler {
4      socket: SocketIOClient.Socket;
5  }
```




EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

component

people-count

people-count.h...

people-count.js

people-count.ts

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neighborhood.ts

neighborhood-...

neighborhood-...

socket-handler

socket-handler.ts

vendor

index.html

tourists-tripping.html

tourists-tripping.js

• socket-handler.ts /src/service/socket-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2
3  export class SocketHandler {
4      socket: SocketIOClient.Socket;
5
6      constructor() {
7          this.socket = io.connect("http://localhost:9898");
8      }
9  }
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

component

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people-count.h...

people-count.js

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service

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neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

socket-handler

socket-handler.ts

vendor

index.html

tourists-tripping.html

tourists-tripping.js

• socket-handler.ts /src/service/socket-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2
3  export class SocketHandler {
4      socket: SocketIOClient.Socket;
5
6      constructor() {
7          this.socket = io.connect("http://localhost:9898");
8      }
9
10     updateNeighborhood(name: string, TTAmt: number) {
11         |
12     }
13 }
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

component

people-count

people-count.h...

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neighborhood-...

neighborhood-...

socket-handler

socket-handler.ts

vendor

index.html

tourists-tripping.html

tourists-tripping.js

• socket-handler.ts /src/service/socket-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2
3  export class SocketHandler {
4      socket: SocketIOClient.Socket;
5
6      constructor() {
7          this.socket = io.connect("http://localhost:9898");
8      }
9
10     updateNeighborhood(name: string, TTAmt: number) {
11         this.socket.emit('updateNeighborhoods', {
12             [name]: TTAmt
13         });
14     }
15 }
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

component

people-count

people-count.h...

people-count.js

people-count.ts

service

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

socket-handler

socket-handler.ts

vendor

index.html

tourists-tripping.html

tourists-tripping.js

• socket-handler.ts /src/service/socket-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2
3  export class SocketHandler {
4      socket: SocketIOClient.Socket;
5
6      constructor() {
7          this.socket = io.connect("http://localhost:9898");
8      }
9
10     updateNeighborhood(name: string, TTAmt: number) {
11         this.socket.emit('updateNeighborhoods', {
12             [name]: TTAmt
13         });
14     }
15
16     onUpdateNeighborhood(listener: Function) {
17
18     }
19 }
```



EXPLORE

▶ WORKING FILES

▶ TOURISTS-ON-A-TRIP

└ component

└ people-count

people-count.h...

people-count.js

people-count.ts

└ service

└ neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

└ socket-handler

socket-handler.ts

▶ vendor

index.html

tourists-tripping.html

tourists-tripping.js



socket-handler.ts /src/service/socket-handler



```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2
3  export class SocketHandler {
4      socket: SocketIOClient.Socket;
5
6      constructor() {
7          this.socket = io.connect("http://localhost:9898");
8      }
9
10     updateNeighborhood(name: string, TTAmt: number) {
11         this.socket.emit('updateNeighborhoods', {
12             [name]: TTAmt
13         });
14     }
15
16     onUpdateNeighborhood(listener: Function) {
17         this.socket.on('updateNeighborhoods', (data) => {
18             Object.keys(data).forEach(
19                 (name) => listener(name, data[name])
20             );
21         });
22     }
23 }
```




EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

component

people-count

people-count.h...

people-count.js

people-count.ts

service

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neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

socket-handler

socket-handler.js

socket-handler.ts

vendor

index.html

tourists-tripping.html

neighborhood-handler.ts /src/service/neighborhood-handler

```
1  /// <reference path="../../typings/tsd.d.ts" />
2  import {Neighborhood} from '../neighborhood';
3  import {SocketHandler} from '../../service/socket-handler/socket-handler';
4
5  export class NeighborhoodHandler {
6      neighborhoods: Neighborhood[];
7
8      constructor(socketHandler: SocketHandler) {
9          this.neighborhoods = [];
10     }
11
12     pushNeighborhood(...names:String[]) {
13         this.neighborhoods.push(
14             ...names.map(
15                 (name) => new Neighborhood(name)
16             )
17         );
18     }
19 }
```




EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

component

people-count

people-count.h...

people-count.js

people-count.ts

service

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neighborhood.ts

neighborhood-...

neighborhood-...

socket-handler

socket-handler.js

socket-handler.ts

vendor

index.html

tourists-tripping.html

neighborhood-handler.ts /src/service/neighborhood-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Inject} from 'angular2/angular2';
3  import {Neighborhood} from '../neighborhood';
4  import {SocketHandler} from '../../service/socket-handler/socket-handler';
5
6  export class NeighborhoodHandler {
7      neighborhoods: Neighborhood[];
8
9      constructor(@Inject(SocketHandler) socketHandler: SocketHandler) {
10         this.neighborhoods = [];
11     }
12
13     pushNeighborhood(...names:String[]) {
14         this.neighborhoods.push(
15             ...names.map(
16                 (name) => new Neighborhood(name)
17             )
18         );
19     }
20 }
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

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people-count.ts

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neighborhood.ts

neighborhood-...

neighborhood-...

socket-handler

socket-handler.js

socket-handler.ts

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neighborhood-handler.ts /src/service/neighborhood-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Inject} from 'angular2/angular2';
3  import {Neighborhood} from './neighborhood';
4  import {SocketHandler} from '../../service/socket-handler/socket-handler';
5
6  export class NeighborhoodHandler {
7      neighborhoods: Neighborhood[];
8      socketHandler: SocketHandler;
9
10     constructor(@Inject(SocketHandler) socketHandler: SocketHandler) {
11         this.neighborhoods = [];
12         this.socketHandler = socketHandler;
13
14         this.socketHandler.onUpdateNeighborhood((name, amount) => {
15             |
16         });
17     }
18
19     pushNeighborhood(...names:String[]) {
20         this.neighborhoods.push(
21             ...names.map(
22                 (name) => new Neighborhood(name)
23             )
24         );
25     }
}
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

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neighborhood.ts

neighborhood-...

neighborhood-...

socket-handler

socket-handler.js

socket-handler.ts

vendor

index.html

tourists-tripping.html

neighborhood-handler.ts /src/service/neighborhood-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Inject} from 'angular2/angular2';
3  import {Neighborhood} from '../neighborhood';
4  import {SocketHandler} from '../../service/socket-handler/socket-handler';
5
6  export class NeighborhoodHandler {
7      neighborhoods: Neighborhood[];
8      socketHandler: SocketHandler;
9
10     constructor(@Inject(SocketHandler) socketHandler: SocketHandler) {
11         this.neighborhoods = [];
12         this.socketHandler = socketHandler;
13
14         this.socketHandler.onUpdateNeighborhood((name, amount) => {
15             var neighborhood: Neighborhood = this.neighborhoods.filter(
16                 (n) => n.name === name
17             );
18         });
19     }
20
21     pushNeighborhood(...names:String[]) {
22         this.neighborhoods.push(
23             ...names.map(
24                 (name) => new Neighborhood(name)
25             )
26         );
27     }
28 }
```




EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

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neighborhood-...

socket-handler

socket-handler.js

socket-handler.ts

vendor

index.html

tourists-tripping.html

• neighborhood-handler.ts /src/service/neighborhood-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Inject} from 'angular2/angular2';
3  import {Neighborhood} from '../neighborhood';
4  import {SocketHandler} from '../../service/socket-handler/socket-handler';
5
6  export class NeighborhoodHandler {
7      neighborhoods: Neighborhood[];
8      socketHandler: SocketHandler;
9
10     constructor(@Inject(SocketHandler) socketHandler: SocketHandler) {
11         this.neighborhoods = [];
12
13         Type 'Neighborhood[]' is not assignable to type 'Neighborhood'. Property 'name'
14         is missing in type 'Neighborhood[]'.
15         (local var) neighborhood: Neighborhood
16
17         var neighborhood: Neighborhood = this.neighborhoods.filter(
18             (n) => n.name === name
19         );
20     }
21
22     pushNeighborhood(...names:String[]) {
23         this.neighborhoods.push(
24             ...names.map(
25                 (name) => new Neighborhood(name)
26             )
27         );
28     }
29 }
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

component

people-count

people-count.h...

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neighborhood-...

socket-handler

socket-handler.js

socket-handler.ts

vendor

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tourists-tripping.html

neighborhood-handler.ts /src/service/neighborhood-handler

```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Inject} from 'angular2/angular2';
3  import {Neighborhood} from '../neighborhood';
4  import {SocketHandler} from '../../service/socket-handler/socket-handler';
5
6  export class NeighborhoodHandler {
7      neighborhoods: Neighborhood[];
8      socketHandler: SocketHandler;
9
10     constructor(@Inject(SocketHandler) socketHandler: SocketHandler) {
11         this.neighborhoods = [];
12         this.socketHandler = socketHandler;
13
14         this.socketHandler.onUpdateNeighborhood((name, amount) => {
15             var neighborhood: Neighborhood = this.neighborhoods.filter(
16                 (n) => n.name === name
17             )[0];
18         });
19     }
20
21     pushNeighborhood(...names:String[]) {
22         this.neighborhoods.push(
23             ...names.map(
24                 (name) => new Neighborhood(name)
25             )
26     }
```

Data Propagation



EXPLORE

WORKING FILES

TOURISTS-ON-A-TRIP

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

socket-handler

socket-handler.js

socket-handler.ts

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tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

angular2

angular2.d.ts

es6-promise

tourists-tripping.html /src

```
1 <h1>
2   Tourists on a Trip
3 </h1>
4
5 <div class="row" *ng-for="#neighborhood of neighborhoods;">
6   <div class="col-md-12">
7     ModelValue: {{ neighborhood.TTAmount }}
8     <people-count
9       [tt-title]="neighborhood.name"
10      [tt-amount]="neighborhood.TTAmount"
11      (tt-amount-change)="neighborhood.setTTAmount($event.amount)"
12    ></people-count>
13  </div>
14 </div>
```



EXPLORE

▶ WORKING FILES

▶ TOURISTS-ON-A-TRIP

└ component

└ people-count

people-count.h...

people-count.js

people-count.ts

└ service

└ neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

└ socket-handler

socket-handler.js

socket-handler.ts

▶ vendor

index.html

tourists-tripping.html



neighborhood-handler.ts /src/service/neighborhood-handler



```
1  /// <reference path="../../../../typings/tsd.d.ts" />
2  import {Inject} from 'angular2/angular2';
3  import {Neighborhood} from './neighborhood';
4  import {SocketHandler} from '../../service/socket-handler/socket-handler';
5
6  export class NeighborhoodHandler {
7      neighborhoods: Neighborhood[];
8      socketHandler: SocketHandler;
9
10     constructor(@Inject(SocketHandler) socketHandler: SocketHandler) {
11         this.neighborhoods = [];
12         this.socketHandler = socketHandler;
13
14         this.socketHandler.onUpdateNeighborhood((name, amount) => {
15             var neighborhood: Neighborhood = this.neighborhoods.filter(
16                 (n) => n.name === name
17             )[0];
18
19             if (neighborhood) {
20                 neighborhood.setTTAmount(amount);
21             }
22         });
23     }
24
25     pushNeighborhood(...names:String[]) {
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

neighborhood-ha...

neighborhood.js

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neighborhood-...

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tourists-tripping.ts

typings

angular2

angular2.d.ts

es6-promise

• tourists-tripping.html /src

```
1 <h1>
2   Tourists on a Trip
3 </h1>
4
5 <div class="row" *ng-for="#neighborhood of neighborhoods;">
6   <div class="col-md-12">
7     ModelValue: {{ neighborhood.TTAmount }}
8     <people-count
9       [tt-title]="neighborhood.name"
10      [tt-amount]="neighborhood.TTAmount"
11      (tt-amount-change)="updateNeighborhood(neighborhood, $event.amount)"
12    ></people-count>
13  </div>
14 </div>
```



EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

neighborhood-ha...

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neighborhood.ts

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tourists-tripping.ts

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angular2

angular2.d.ts

es6-promise

tourists-tripping.ts /src

```
15 class TouristsTrippingApp {
16     neighborhoods: Neighborhood[]
17
18     constructor(neighborhoodHandler: NeighborhoodHandler) {
19         this.neighborhoods = neighborhoodHandler.neighborhoods;
20
21         neighborhoodHandler.pushNeighborhood(
22             'Central Amsterdam',
23             'Red Light District',
24             'Leidseplein',
25             'Oud Zuid',
26             'Rembrandtplein',
27             'Jordaan',
28             'The Plantagebuurt',
29             'De Pijp'
30         )
31     }
32
33     updateNeighborhood(neighborhood: Neighborhood, amount: Number) {
34
35     }
36
37 }
38
39 bootstrap(TouristsTrippingApp);
```




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WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

socket-handler

socket-handler.js

socket-handler.ts

vendor

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tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

angular2

angular2.d.ts

es6-promise

tourists-tripping.ts /src

```
15 class TouristsTrippingApp {
16     neighborhoods: Neighborhood[];
17     neighborhoodHandler: NeighborhoodHandler;
18
19     constructor(neighborhoodHandler: NeighborhoodHandler) {
20         this.neighborhoodHandler = neighborhoodHandler;
21
22         this.neighborhoods = neighborhoodHandler.neighborhoods;
23
24         neighborhoodHandler.pushNeighborhood(
25             'Central Amsterdam',
26             'Red Light District',
27             'Leidseplein',
28             'Oud Zuid',
29             'Rembrandtplein',
30             'Jordaan',
31             'The Plantagebuurt',
32             'De Pijp'
33         )
34     }
35
36     updateNeighborhood(neighborhood: Neighborhood, amount: Number) {
37         this.neighborhoodHandler.updateNeighborhood(neighborhood, amount);
38     }
39 }
```



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WORKING FILES 2 UNSA...

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neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

socket-handler

socket-handler.js

socket-handler.ts

vendor

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tourists-tripping.js

tourists-tripping.ts

typings

angular2

angular2.d.ts

es6-promise

neighborhood-handler.ts /src/service/neighborhood-handler

```
13
14     this.socketHandler.onUpdateNeighborhood((name, amount) => {
15         var neighborhood: Neighborhood = this.neighborhoods.filter(
16             (n) => n.name === name
17         )[0];
18
19         if (neighborhood) {
20             neighborhood.setTTAmount(amount);
21         }
22     });
23 }
24
25 pushNeighborhood(...names:String[]) {
26     this.neighborhoods.push(
27         ...names.map(
28             (name) => new Neighborhood(name)
29         )
30     );
31 }
32
33 updateNeighborhood(neighborhood: Neighborhood, amount: Number) {
34
35 }
36 }
```




EXPLORE

WORKING FILES 1 UNSA...

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neighborhood-ha...

neighborhood.js

neighborhood.ts

neighborhood-...

neighborhood-...

socket-handler

socket-handler.js

socket-handler.ts

vendor

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tourists-tripping.js

tourists-tripping.ts

typings

angular2

angular2.d.ts

es6-promise

neighborhood-handler.ts /src/service/neighborhood-handler

```
13
14     this.socketHandler.onUpdateNeighborhood((name, amount) => {
15         var neighborhood: Neighborhood = this.neighborhoods.filter(
16             (n) => n.name === name
17         )[0];
18
19         if (neighborhood) {
20             neighborhood.setTTAmount(amount);
21         }
22     });
23 }
24
25 pushNeighborhood(...names:String[]) {
26     this.neighborhoods.push(
27         ...names.map(
28             (name) => new Neighborhood(name)
29         )
30     );
31 }
32
33 updateNeighborhood(neighborhood: Neighborhood, amount: Number) {
34     neighborhood.setTTAmount(amount);
35     this.socketHandler.updateNeighborhood(neighborhood.name, amount);
36 }
37 }
```



EXPLORE

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TOURISTS-ON-A-TRIP

service

neighborhood-ha...

neighborhood.js

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neighborhood-...

neighborhood-...

socket-handler

socket-handler.js

socket-handler.ts

vendor

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tourists-tripping.html

tourists-tripping.js

tourists-tripping.ts

typings

tsconfig.json

tsd.json

• tourists-tripping.ts /src

```
1  /// <reference path="../../typings/tsd.d.ts" />
2  import {Component, View, bootstrap, NgFor} from 'angular2/angular2';
3  import {NeighborhoodHandler} from 'service/neighborhood-handler/neighborhood-handl
4  import {Neighborhood} from 'service/neighborhood-handler/neighborhood';
5  import {PeopleCount} from 'component/people-count/people-count';
6  import {SocketHandler} from 'service/socket-handler/socket-handler';
7
8  @Component({
9      selector: 'tourists-tripping-app',
10     appInjector: [NeighborhoodHandler, SocketHandler]
11 })
12 @View({
13     templateUrl: 'tourists-tripping.html',
14     directives: [NgFor, PeopleCount]
15 })
16 class TouristsTrippingApp {
17     neighborhoods: Neighborhood[];
18     neighborhoodHandler: NeighborhoodHandler;
19
20     constructor(neighborhoodHandler: NeighborhoodHandler) {
21         this.neighborhoodHandler = neighborhoodHandler;
22
23         this.neighborhoods = neighborhoodHandler.neighborhoods;
24
25         neighborhoodHandler.pushNeighborhoodC
```



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WORKING FILES

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tourists-tripping.ts /src

```
35     }  
36  
37     updateNeighborhood(neighborhood: Neighborhood, amount: Number) {  
38         this.neighborhoodHandler.updateNeighborhood(neighborhood, amount);  
39     }  
40  
41 }  
42  
43 bootstrap(TouristsTrippingApp, [SocketHandler]);
```

localhost:8080

Tourists on a Trip

ModelValue: 8

Central Amsterdam

How many Tourists on a trip do you see?

Value: 8

REPORT

ModelValue: 78

Red Light District

How many Tourists on a trip do you see?

Value: 78

REPORT

ModelValue: 0

Leidseplein

How many Tourists on a trip do you see?

Value: 0

REPORT

localhost:8080

Tourists on a Trip

ModelValue: 8

Central Amsterdam

How many Tourists on a trip do you see?

Value: 8

REPORT

ModelValue: 78

Red Light District

How many Tourists on a trip do you see?

Value: 78

REPORT

ModelValue: 0

Leidseplein

How many Tourists on a trip do you see?

Value: 0

REPORT

Convert this to ES5



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▶ WORKING FILES

▲ TOURISTS-ON-A-TRIP

▲ component

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people-count.ts

▲ service

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typings

neighborhood.js /src/service/neighborhood-handler

```
1 function Neighborhood(name: String, TTAmt: Number = 0) {  
2     this.name = name;  
3     this.TTAmt = TTAmt;  
4 }  
5  
6 Neighborhood.prototype.setTTAmt = function (value) {  
7     this.TTAmt = parseFloat(value);  
8     return this;  
9 }  
10
```



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typings

neighborhood.js /src/service/neighborhood-handler

```
1 function Neighborhood(name, TTAmt) {  
2   this.name = name;  
3   this.TTAmt = TTAmt || 0;  
4 }  
5  
6 Neighborhood.prototype.setTTAmt = function (value) {  
7   this.TTAmt = parseFloat(value);  
8   return this;  
9 }  
10
```



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tsd.json

• socket-handler.js /src/service/socket-handler

```
1 function SocketHandler() {
2   this.socket = io.connect("http://localhost:9898");
3 }
4
5 SocketHandler.prototype.updateNeighborhood = function(name, TTAmt) {
6   this.socket.emit('updateNeighborhoods', {
7     [name]: TTAmt
8   });
9 }
10 SocketHandler.prototype.onUpdateNeighborhood = function(listener) {
11   this.socket.on('updateNeighborhoods', (data) => {
12     Object.keys(data).forEach((name) => listener(name, data[name]));
13   });
14 }
15
```



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• socket-handler.js /src/service/socket-handler

```
1 function SocketHandler() {
2   this.socket = io.connect("http://localhost:9898");
3 }
4
5 SocketHandler.prototype.updateNeighborhood = function(name, TTAmt) {
6   var event = {};
7   event[name] = TTAmt;
8   this.socket.emit('updateNeighborhoods', {
9     [name]: TTAmt
10  });
11 }
12 SocketHandler.prototype.onUpdateNeighborhood = function(listener) {
13   this.socket.on('updateNeighborhoods', (data) => {
14     Object.keys(data).forEach((name) => listener(name, data[name])) );
15   });
16 }
17
```



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• socket-handler.js /src/service/socket-handler

```
1 function SocketHandler() {
2   this.socket = io.connect("http://localhost:9898");
3 }
4
5 SocketHandler.prototype.updateNeighborhood = function(name, TTAmt) {
6   var event = {};
7   event[name] = TTAmt;
8   this.socket.emit('updateNeighborhoods', event);
9 }
10 SocketHandler.prototype.onUpdateNeighborhood = function(listener) {
11   this.socket.on('updateNeighborhoods', (data) => {
12     Object.keys(data).forEach((name) => listener(name, data[name]));
13   });
14 }
15
```




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socket-handler.js /src/service/socket-handler



```
1 function SocketHandler() {
2     this.socket = io.connect("http://localhost:9898");
3 }
4
5 SocketHandler.prototype.updateNeighborhood = function(name, TTAmt) {
6     var event = {};
7     event[name] = TTAmt;
8     this.socket.emit('updateNeighborhoods', event);
9 }
10 SocketHandler.prototype.onUpdateNeighborhood = function(listener) {
11     this.socket.on('updateNeighborhoods', function(data) {
12         Object.keys(data).forEach(function(name) {
13             listener(name, data[name]);
14         });
15     });
16 }
17
```




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• neighborhood-handler.js /src/service/neighborhood-handler

```
1 function NeighborhoodHandler(@Inject(SocketHandler) socketHandler: SocketHandler) {
2   this.neighborhoods = [];
3   this.socketHandler = socketHandler;
4
5   this.socketHandler.onUpdateNeighborhood((name, amount) => {
6     var neighborhood: Neighborhood = this.neighborhoods.filter(
7       (n) => n.name === name
8     )[0];
9
10    if (neighborhood) {
11      neighborhood.setTTAmount(amount);
12    }
13  });
14 }
15
16 pushNeighborhood(...names:String[]) {
17   this.neighborhoods.push(
18     ...names.map(
19       (name) => new Neighborhood(name)
20     )
21   );
22 }
23
24 updateNeighborhood(neighborhood: Neighborhood, amount: Number) {
25   neighborhood.setTTAmount(amount);
26 }
```



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WORKING FILES 1 UNSA...

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• neighborhood-handler.js /src/service/neighborhood-handler

```
1 NeighborhoodHandler.parameters = [  
2   [SocketHandler]  
3 ];  
4 function NeighborhoodHandler(socketHandler) {  
5   this.neighborhoods = [];  
6   this.socketHandler = socketHandler;  
7  
8   this.socketHandler.onUpdateNeighborhood((name, amount) => {  
9     var neighborhood: Neighborhood = this.neighborhoods.filter(  
10      (n) => n.name === name  
11    )  
12    );  
13    if (neighborhood) {  
14      neighborhood.setTTAmount(amount);  
15    }  
16  });  
17 }  
18  
19 pushNeighborhood(...names:String[]) {  
20   this.neighborhoods.push(  
21     ...names.map(  
22       (name) => new Neighborhood(name)  
23     )  
24   );  
25 }
```



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• neighborhood-handler.js /src/service/neighborhood-handler

```
1 NeighborhoodHandler.parameters = [  
2   [SocketHandler]  
3 ];  
4 function NeighborhoodHandler(socketHandler) {  
5   this.neighborhoods = [];  
6   this.socketHandler = socketHandler;  
7  
8   this.socketHandler.onUpdateNeighborhood((name, amount) => {  
9     var neighborhood: Neighborhood = this.neighborhoods.filter(  
10      (n) => n.name === name  
11    ) [0];  
12  
13    if (neighborhood) {  
14      neighborhood.setTTAmount(amount);  
15    }  
16  });  
17 }  
18  
19 NeighborhoodHandler.prototype.pushNeighborhood = function(...names:String[]) {  
20   this.neighborhoods.push(  
21     ...names.map(  
22       (name) => new Neighborhood(name)  
23     )  
24   );  
25 }
```



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• neighborhood-handler.js /src/service/neighborhood-handler

```
1 NeighborhoodHandler.parameters = [  
2   [SocketHandler]  
3 ];  
4 function NeighborhoodHandler(socketHandler) {  
5   this.neighborhoods = [];  
6   this.socketHandler = socketHandler;  
7  
8   this.socketHandler.onUpdateNeighborhood(function(name, amount) {  
9     var neighborhood = this.neighborhoods.filter(  
10       (n) => n.name === name  
11     )[0];  
12  
13     if (neighborhood) {  
14       neighborhood.setTTAmount(amount);  
15     }  
16   });  
17 }  
18  
19 NeighborhoodHandler.prototype.pushNeighborhood = function(...names:String[]) {  
20   this.neighborhoods.push(  
21     ...names.map(  
22       (name) => new Neighborhood(name)  
23     )  
24   );  
25 }
```




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• neighborhood-handler.js /src/service/neighborhood-handler

```
1 NeighborhoodHandler.parameters = [  
2   [SocketHandler]  
3 ];  
4 function NeighborhoodHandler(socketHandler) {  
5   this.neighborhoods = [];  
6   this.socketHandler = socketHandler;  
7  
8   var that = this;  
9   this.socketHandler.onUpdateNeighborhood(function(name, amount) {  
10     var neighborhood = that.neighborhoods.filter(  
11       (n) => n.name === name  
12     )[0];  
13  
14     if (neighborhood) {  
15       neighborhood.setTTAmount(amount);  
16     }  
17   });  
18 }  
19  
20 NeighborhoodHandler.prototype.pushNeighborhood = function(...names:String[]) {  
21   this.neighborhoods.push(  
22     ...names.map(  
23       (name) => new Neighborhood(name)  
24     )  
25   );
```



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• neighborhood-handler.js /src/service/neighborhood-handler

```
1 NeighborhoodHandler.parameters = [  
2   [SocketHandler]  
3 ];  
4 function NeighborhoodHandler(socketHandler) {  
5   this.neighborhoods = [];  
6   this.socketHandler = socketHandler;  
7  
8   var that = this;  
9   this.socketHandler.onUpdateNeighborhood(function(name, amount) {  
10     var neighborhood = that.neighborhoods.filter(  
11       function(n) { return n.name === name; }  
12     )[0];  
13  
14     if (neighborhood) {  
15       neighborhood.setTAmount(amount);  
16     }  
17   });  
18 }  
19  
20 NeighborhoodHandler.prototype.pushNeighborhood = function(...names:String[]) {  
21   this.neighborhoods.push(  
22     ...names.map(  
23       (name) => new Neighborhood(name)  
24     )  
25   );
```




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• neighborhood-handler.js /src/service/neighborhood-handler

```
1 NeighborhoodHandler.parameters = [  
2   [SocketHandler]  
3 ];  
4 function NeighborhoodHandler(socketHandler) {  
5   var neighborhoods = this.neighborhoods = [];  
6   this.socketHandler = socketHandler;  
7  
8   this.socketHandler.onUpdateNeighborhood(function(name, amount) {  
9     var neighborhood = neighborhoods.filter(  
10      function(n) { return n.name === name; }  
11    )  
12    );  
13    if (neighborhood) {  
14      neighborhood.setTTAmount(amount);  
15    }  
16  });  
17 }  
18  
19 NeighborhoodHandler.prototype.pushNeighborhood = function(...names:String[]) {  
20   this.neighborhoods.push(  
21     ...names.map(  
22       (name) => new Neighborhood(name)  
23     )  
24   );  
25 }
```



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• neighborhood-handler.js /src/service/neighborhood-handler

```
5   var neighborhoods = this.neighborhoods = [];  
6   this.socketHandler = socketHandler;  
7  
8   this.socketHandler.onUpdateNeighborhood(function(name, amount) {  
9       var neighborhood = neighborhoods.filter(  
10          function(n) { return n.name === name; }  
11      )  
12      );  
13      if (neighborhood) {  
14          neighborhood.setTTAmount(amount);  
15      }  
16  });  
17  
18  
19  neighborhoodHandler.prototype.pushNeighborhood = function() {  
20      this.neighborhoods.push(  
21          Array.prototype.slice.call(arguments).map(  
22              (name) => new Neighborhood(name)  
23          )  
24      );  
25  }  
26  
27  neighborhoodHandler.prototype.updateNeighborhood = function(neighborhood: Neighborhood,  
28      neighborhood.setTTAmount(amount);  
29      this.socketHandler.updateNeighborhood(neighborhood.name, amount);
```



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```
7
8   this.socketHandler.onUpdateNeighborhood(function(name, amount) {
9       var neighborhood = neighborhoods.filter(
10           function(n) { return n.name === name; }
11       )[0];
12
13       if (neighborhood) {
14           neighborhood.setTTAmount(amount);
15       }
16   });
17 }
18
19 NeighborhoodHandler.prototype.pushNeighborhood = function() {
20     this.neighborhoods.push(
21         Array.prototype.slice.call(arguments).map(
22             function(name) { return new Neighborhood(name); }
23         )
24     );
25 }
26
27 NeighborhoodHandler.prototype.updateNeighborhood = function(neighborhood: Neighborhood) {
28     neighborhood.setTTAmount(amount);
29     this.socketHandler.updateNeighborhood(neighborhood.name, amount);
30 }
31
```




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neighborhood-handler.js /src/service/neighborhood-handler

```
8      this.socketHandler.onupdateneighborhood(function(name, amount) {
9          var neighborhood = neighborhoods.filter(
10              function(n) { return n.name === name; }
11          )[0];
12
13          if (neighborhood) {
14              neighborhood.setTTAmount(amount);
15          }
16      });
17  }
18
19  NeighborhoodHandler.prototype.pushNeighborhood = function() {
20      this.neighborhoods.push.apply(
21          this.neighborhoods,
22          Array.prototype.slice.call(arguments).map(
23              function(name) { return new Neighborhood(name); }
24          )
25      );
26  }
27
28  NeighborhoodHandler.prototype.updateNeighborhood = function(neighborhood: Neighborhood) {
29      neighborhood.setTTAmount(amount);
30      this.socketHandler.updateNeighborhood(neighborhood.name, amount);
31  }
32
```



EXPLORE

▶ WORKING FILES

◀ TOURISTS-ON-A-TRIP

◀ src

◀ component

◀ people-count

people-count.html

people-count.ts

◀ service

◀ neighborhood-ha...

neighborhood.js

neighborhood-h...

◀ socket-handler

socket-handler.js

▶ vendor

index.html

tourists-tripping.html

tourists-tripping.ts

▶ typings

tsconfig.json

neighborhood-handler.js /src/service/neighborhood-handler

```
10         function(n) { return n.name === name; }
11     )[0];
12
13     if (neighborhood) {
14         neighborhood.setTTAmount(amount);
15     }
16 });
17 }
18
19 NeighborhoodHandler.prototype.pushNeighborhood = function() {
20     this.neighborhoods.push.apply(
21         this.neighborhoods,
22         Array.prototype.slice.call(arguments).map(
23             function(name) { return new Neighborhood(name); }
24         )
25     );
26 }
27
28 NeighborhoodHandler.prototype.updateNeighborhood = function(neighborhood, amount) {
29     neighborhood.setTTAmount(amount);
30     this.socketHandler.updateNeighborhood(neighborhood.name, amount);
31 }
32
```



EXPLORE

▶ WORKING FILES

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socket-handler.js

▶ vendor

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▶ typings

tsconfig.json

people-count.ts /src/component/people-count

```
1  /// <reference path="../../../../typings/tsd.d.ts"/>
2  import {Component, View, Control, ControlGroup, FormBuilder, formDirectives, onCha
3
4  @Component({
5      selector: 'people-count',
6      properties: ['title: tt-title', 'amount: tt-amount'],
7      appInjector: [FormBuilder],
8      lifecycle: [onChange],
9      events: ['ttAmountChange']
10 })
11 @View({
12     templateUrl: 'component/people-count/people-count.html',
13     directives: [formDirectives]
14 })
15 export class PeopleCount{
16     title: String;
17     amount: Number;
18
19     ttAmountChange: EventEmitter;
20
21     amountControl: Control;
22     peopleCountForm: ControlGroup;
23     constructor(builder: FormBuilder) {
24         this.ttAmountChange = new EventEmitter();
25     }
```




EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

node_modules

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people-count.js

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neighborhood-...

socket-handler

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vendor

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tourists-tripping.html

tourists-tripping.ts

typings

• people-count.js /src/component/people-count

```
13 directives: [formDirectives]
14 })
15 function PeopleCount(builder: FormBuilder) {
16   this.ttAmountChange = new EventEmitter();
17
18   this.amountControl = new Control()
19
20   this.peopleCountForm = builder.group({
21     amount: this.amountControl
22   });
23 }
24
25 PeopleCount.prototype.onChange = function() {
26   this.amountControl.updateValue(this.amount);
27 }
28
29 PeopleCount.prototype.reportAmount = function() {
30   var event = {
31     amount: this.amountControl.value
32   };
33   this.ttAmountChange.next(event);
34 }
```



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TOURISTS-ON-A-TRIP

node_modules

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socket-handler.js

vendor

index.html

tourists-tripping.html

tourists-tripping.ts

typings

• people-count.js /src/component/people-count

```
1 PeopleCount.annotations = [  
2   new angular.ComponentAnnotation({  
3     selector: 'people-count',  
4     properties: ['title: tt-title', 'amount: tt-amount'],  
5     appInjector: [FormBuilder],  
6     lifecycle: [onChange],  
7     events: ['ttAmountChange']  
8   }),  
9   new angular.ViewAnnotation({  
10    templateUrl: 'component/people-count/people-count.html',  
11    directives: [formDirectives]  
12  })  
13 ];  
14 function PeopleCount(builder: FormBuilder) {  
15   this.ttAmountChange = new EventEmitter();  
16  
17   this.amountControl = new Control()  
18  
19   this.peopleCountForm = builder.group({  
20     amount: this.amountControl  
21   });  
22 }  
23  
24 PeopleCount.prototype.onChange = function() {  
25   this.amountControl.updateValue(this.amount);
```



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TOURISTS-ON-A-TRIP

node_modules

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typings

• people-count.js /src/component/people-count

```
1 PeopleCount.annotations = [  
2   new angular.ComponentAnnotation({  
3     selector: 'people-count',  
4     properties: ['title: tt-title', 'amount: tt-amount'],  
5     appInjector: [angular.FormBuilder],  
6     lifecycle: [angular.onChange],  
7     events: ['ttAmountChange']  
8   }),  
9   new angular.ViewAnnotation({  
10    templateUrl: 'component/people-count/people-count.html',  
11    directives: [angular.formDirectives]  
12  })  
13 ];  
14 function PeopleCount(builder: angular.FormBuilder) {  
15   this.ttAmountChange = new angular.EventEmitter();  
16  
17   this.amountControl = new angular.Control()  
18  
19   this.peopleCountForm = builder.group({  
20     amount: this.amountControl  
21   });  
22 }  
23  
24 PeopleCount.prototype.onChange = function() {  
25   this.amountControl.updateValue(this.amount);
```




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▶ WORKING FILES

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▶ typings



people-count.js /src/component/people-count



```
1 PeopleCount.annotations = [  
2     new angular.ComponentAnnotation({  
3         selector: 'people-count',  
4         properties: ['title: tt-title', 'amount: tt-amount'],  
5         appInjector: [angular.FormBuilder],  
6         lifecycle: [angular.onChange],  
7         events: ['ttAmountChange']  
8     }),  
9     new angular.ViewAnnotation({  
10        templateUrl: 'component/people-count/people-count.html',  
11        directives: [angular.formDirectives]  
12    })  
13 ];  
14 PeopleCount.parameters = [  
15     [angular.FormBuilder]  
16 ];  
17 function PeopleCount(builder) {  
18     this.ttAmountChange = new angular.EventEmitter();  
19  
20     this.amountControl = new angular.Control()  
21  
22     this.peopleCountForm = builder.group({  
23         amount: this.amountControl  
24     });  
25 }
```



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tourists-tripping.js

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• tourists-tripping.js /src

```
1 @Component({
2   selector: 'tourists-tripping-app',
3   appInjector: [NeighborhoodHandler]
4 })
5 @View({
6   templateUrl: 'tourists-tripping.html',
7   directives: [NgFor, PeopleCount]
8 })
9 function TouristsTrippingApp(neighborhoodHandler: NeighborhoodHandler) {
10   this.neighborhoodHandler = neighborhoodHandler;
11
12   this.neighborhoods = neighborhoodHandler.neighborhoods;
13
14   neighborhoodHandler.pushNeighborhood(
15     'Central Amsterdam',
16     'Red Light District',
17     'Leidseplein',
18     'Oud Zuid',
19     'Rembrandtplein',
20     'Jordaan',
21     'The Plantagebuurt',
22     'De Pijp'
23   );
24 }
25
```




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tourists-tripping.js

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• tourists-tripping.js /src

```
1 TouristsTrippingApp.annotations = [  
2   new angular.ComponentAnnotation({  
3     selector: 'tourists-tripping-app',  
4     appInjector: [NeighborhoodHandler]  
5   }  
6   new angular.ViewAnnotation({  
7     templateUrl: 'tourists-tripping.html',  
8     directives: [angular.NgFor, PeopleCount]  
9   })  
10 ];  
11 function TouristsTrippingApp(neighborhoodHandler: NeighborhoodHandler) {  
12   this.neighborhoodHandler = neighborhoodHandler;  
13  
14   this.neighborhoods = neighborhoodHandler.neighborhoods;  
15  
16   neighborhoodHandler.pushNeighborhood(  
17     'Central Amsterdam',  
18     'Red Light District',  
19     'Leidseplein',  
20     'Oud Zuid',  
21     'Rembrandtplein',  
22     'Jordaan',  
23     'The Plantagebuurt',  
24     'De Pijp'  
25   );
```



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▶ WORKING FILES

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tourists-tripping.js /src

```
1 TouristsTrippingApp.annotations = [  
2   new angular.ComponentAnnotation({  
3     selector: 'tourists-tripping-app',  
4     appInjector: [NeighborhoodHandler]  
5   } ),  
6   new angular.ViewAnnotation({  
7     templateUrl: 'tourists-tripping.html',  
8     directives: [angular.NgFor, PeopleCount]  
9   })  
10 ];  
11 TouristsTrippingApp.parameters = [  
12   [NeighborhoodHandler]  
13 ];  
14 function TouristsTrippingApp(neighborhoodHandler) {  
15   this.neighborhoodHandler = neighborhoodHandler;  
16  
17   this.neighborhoods = neighborhoodHandler.neighborhoods;  
18  
19   neighborhoodHandler.pushNeighborhood(  
20     'Central Amsterdam',  
21     'Red Light District',  
22     'Leidseplein',  
23     'Oud Zuid',  
24     'Rembrandtplein',  
25     'Jordaan',
```



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tourists-tripping.html

tourists-tripping.js

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tourists-tripping.js /src

```
20      'Central Amsterdam',
21      'Red Light District',
22      'Leidseplein',
23      'Oud Zuid',
24      'Rembrandtplein',
25      'Jordaan',
26      'The Plantagebuurt',
27      'De Pijp'
28    );
29  }
30
31  TouristsTrippingApp.prototype.updateNeighborhood = function(neighborhood, amount) {
32    this.neighborhoodHandler.updateNeighborhood(neighborhood, amount);
33  }
34
35
36  bootstrap(TouristsTrippingApp, [SocketHandler]);
```



EXPLORE

▶ WORKING FILES

◀ TOURISTS-ON-A-TRIP

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tourists-tripping.js

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tourists-tripping.js /src

```
20     'Central Amsterdam',
21     'Red Light District',
22     'Leidseplein',
23     'Oud Zuid',
24     'Rembrandtplein',
25     'Jordaan',
26     'The Plantagebuurt',
27     'De Pijp'
28   );
29 }
30
31 TouristsTrippingApp.prototype.updateNeighborhood = function(neighborhood, amount) {
32   this.neighborhoodHandler.updateNeighborhood(neighborhood, amount);
33 }
34
35 document.addEventListener('DOMContentLoaded', function() {
36   angular.bootstrap(TouristsTrippingApp, [SocketHandler]);
37 });
```




EXPLORE

WORKING FILES 1 UNSA...

TOURISTS-ON-A-TRIP

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socket-handler.js

vendor

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tourists-tripping.html

tourists-tripping.js

typings

tsconfig.json

tsd.json

• index.html /src

```
1 <!doctype html>
2 <html>
3   <head>
4     <title>Tourists on a Trip</title>
5     <link href="/vendor/bootstrap.min.css" rel="stylesheet"></link>
6     <link href="/vendor/material-fullpalette.css" rel="stylesheet"></link>
7     <script src="/vendor/traceur-runtime.js"></script>
8     <script src="/vendor/system@0.16.11.js"></script>
9     <script src="/vendor/angular2.sfx.dev.js"></script>
10    <script src="http://localhost:9898/socket.io/socket.io.js"></script>
11  </head>
12  <body>
13    <tourists-tripping-app></tourists-tripping-app>
14
15    <script>
16      System.import('tourists-tripping');
17    </script>
18  </body>
19 </html>
```




EXPLORE

WORKING FILES 1 UNSA...

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tourists-tripping.js

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index.html /src

```
1 <!doctype html>
2 <html>
3   <head>
4     <title>Tourists on a Trip</title>
5     <link href="/vendor/bootstrap.min.css" rel="stylesheet"></link>
6     <link href="/vendor/material-fullpalette.css" rel="stylesheet"></link>
7     <script src="/vendor/traceur-runtime.js"></script>
8     <script src="/vendor/system@0.16.11.js"></script>
9     <script src="/vendor/angular2.sfx.dev.js"></script>
10    <script src="http://localhost:9898/socket.io/socket.io.js"></script>
11
12    <script src="/component/people-count/people-count.js"></script>
13    <script src="/service/socket-handler/socket-handler.js"></script>
14    <script src="/service/neighborhood-handler/neighborhood.js"></script>
15    <script src="/service/neighborhood-handler/neighborhood-handler.js"></script>
16    <script src="/tourists-tripping.js"></script>
17  </head>
18  <body>
19    <tourists-tripping-app></tourists-tripping-app>
20
21    <script>
22      System.import('tourists-tripping');
23    </script>
24  </body>
25 </html>
```



EXPLORE

WORKING FILES

TOURISTS-ON-A-TRIP

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tourists-tripping.js

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index.html /src

```
1 <!doctype html>
2 <html>
3   <head>
4     <title>Tourists on a Trip</title>
5     <link href="/vendor/bootstrap.min.css" rel="stylesheet"></link>
6     <link href="/vendor/material-fullpalette.css" rel="stylesheet"></link>
7     <script src="/vendor/traceur-runtime.js"></script>
8     <script src="/vendor/system@0.16.11.js"></script>
9     <script src="/vendor/angular2.sfx.dev.js"></script>
10    <script src="http://localhost:9898/socket.io/socket.io.js"></script>
11
12    <script src="/component/people-count/people-count.js"></script>
13    <script src="/service/socket-handler/socket-handler.js"></script>
14    <script src="/service/neighborhood-handler/neighborhood.js"></script>
15    <script src="/service/neighborhood-handler/neighborhood-handler.js"></script>
16    <script src="/tourists-tripping.js"></script>
17  </head>
18  <body>
19    <tourists-tripping-app></tourists-tripping-app>
20  </body>
21 </html>
```

Convert to NG1



EXPLORE

▶ WORKING FILES

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▲ socket-handler

socket-handler.js

▶ vendor

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tourists-tripping.html

tourists-tripping.js

▶ typings

tsconfig.json



tourists-tripping.js /src



```
1 TouristsTrippingApp.annotations = [  
2   new angular.ComponentAnnotation({  
3     selector: 'tourists-tripping-app',  
4     appInjector: [NeighborhoodHandler]  
5   }),  
6   new angular.ViewAnnotation({  
7     templateUrl: 'tourists-tripping.html',  
8     directives: [angular.NgFor, PeopleCount]  
9   })  
10 ];  
11 TouristsTrippingApp.parameters = [  
12   [NeighborhoodHandler]  
13 ];  
14 function TouristsTrippingApp(neighborhoodHandler) {  
15   this.neighborhoodHandler = neighborhoodHandler;  
16  
17   this.neighborhoods = neighborhoodHandler.neighborhoods;  
18  
19   neighborhoodHandler.pushNeighborhood(  
20     'Central Amsterdam',  
21     'Red Light District',  
22     'Leidseplein',  
23     'Oud Zuid',  
24     'Rembrandtplein',  
25     'Jordaan',
```



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socket-handler

socket-handler.js

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index.html /src

```
1 <!doctype html>
2 <html>
3   <head>
4     <title>Tourists on a Trip</title>
5     <link href="/vendor/bootstrap.min.css" rel="stylesheet"></link>
6     <link href="/vendor/material-fullpalette.css" rel="stylesheet">
7     <script src="/vendor/traceur-runtime.js"></script>
8     <script src="/vendor/system@0.16.11.js"></script>
9     <script src="/vendor/angular-1.4.0.js"></script>
10    <script src="http://localhost:9898/socket.io/socket.io.js"></script>
11
12    <script src="/component/people-count/people-count.js"></script>
13    <script src="/service/socket-handler/socket-handler.js"></script>
14    <script src="/service/neighborhood-handler/neighborhood.js"></script>
15    <script src="/service/neighborhood-handler/neighborhood-handler.js"></script>
16    <script src="/tourists-tripping.js"></script>
17  </head>
18  <body>
19    <tourists-tripping-app></tourists-tripping-app>
20  </body>
21 </html>
```





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index.html /src

```
1 <!doctype html>
2 <html>
3   <head>
4     <title>Tourists on a Trip</title>
5     <link href="/vendor/bootstrap.min.css" rel="stylesheet"></link>
6     <link href="/vendor/material-fullpalette.css" rel="stylesheet">
7     <script src="/vendor/traceur-runtime.js"></script>
8     <script src="/vendor/system@0.16.11.js"></script>
9     <script src="/vendor/angular-1.4.0.js"></script>
10    <script src="http://localhost:9898/socket.io/socket.io.js"></script>
11
12    <script src="/tourists-tripping.js"></script>
13    <script src="/component/people-count/people-count.js"></script>
14    <script src="/service/socket-handler/socket-handler.js"></script>
15    <script src="/service/neighborhood-handler/neighborhood.js"></script>
16    <script src="/service/neighborhood-handler/neighborhood-handler.js"></script>
17  </head>
18  <body>
19    <tourists-tripping-app></tourists-tripping-app>
20  </body>
21 </html>
```



EXPLORE

WORKING FILES 1 UNSAVED

TOURISTS-ON-A-TRIP

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tourists-tripping.js

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tourists-tripping.js /src

```
1 angular.module('tourists-tripping', [])
2   .directive('', function () {
3     |
4   })
5
6 TouristsTrippingApp.annotations = [
7   new angular.ComponentAnnotation({
8     selector: 'tourists-tripping-app',
9     appInjector: [NeighborhoodHandler]
10  }),
11   new angular.ViewAnnotation({
12     templateUrl: 'tourists-tripping.html',
13     directives: [angular.NgFor, PeopleCount]
14  })
15 ];
16 TouristsTrippingApp.parameters = [
17   [NeighborhoodHandler]
18 ];
19 function TouristsTrippingApp(neighborhoodHandler) {
20   this.neighborhoodHandler = neighborhoodHandler;
21
22   this.neighborhoods = neighborhoodHandler.neighborhoods;
23
24   neighborhoodHandler.pushNeighborhood(
25     'Central Amsterdam',
```



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tourists-tripping.js /src

```
1 angular.module('tourists-tripping', [])
2   .directive('touristsTrippingApp', function () {
3     return {
4       restrict: 'E',
5     }
6   })
7
8 TouristsTrippingApp.annotations = [
9   new angular.ComponentAnnotation({
10     selector: 'tourists-tripping-app',
11     appInjector: [NeighborhoodHandler]
12   }),
13   new angular.ViewAnnotation({
14     templateUrl: 'tourists-tripping.html',
15     directives: [angular.NgFor, PeopleCount]
16   })
17 ];
18 TouristsTrippingApp.parameters = [
19   [NeighborhoodHandler]
20 ];
21 function TouristsTrippingApp(neighborhoodHandler) {
22   this.neighborhoodHandler = neighborhoodHandler;
23
24   this.neighborhoods = neighborhoodHandler.neighborhoods;
25 }
```




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tourists-tripping.js

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● tourists-tripping.js /src

```
1 angular.module('tourists-tripping', [])
2   .directive('touristsTrippingApp', function () {
3     return {
4       restrict: 'E',
5       templateUrl: 'tourists-tripping.html'
6     }
7   })
8
9 TouristsTrippingApp.annotations = [
10   new angular.ComponentAnnotation({
11     selector: 'tourists-tripping-app',
12     appInjector: [NeighborhoodHandler]
13   }),
14   new angular.ViewAnnotation({
15     templateUrl: 'tourists-tripping.html',
16     directives: [angular.NgFor, PeopleCount]
17   })
18 ];
19 TouristsTrippingApp.parameters = [
20   [NeighborhoodHandler]
21 ];
22 function TouristsTrippingApp(neighborhoodHandler) {
23   this.neighborhoodHandler = neighborhoodHandler;
24
25   this.neighborhoods = neighborhoodHandler.neighborhoods;
```



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TOURISTS-ON-A-TRIP

src

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people-count.js

service

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neighborhood-handler.js

socket-handler

socket-handler.js

vendor

index.html

tourists-tripping.html

tourists-tripping.js

typings

tsconfig.json

● tourists-tripping.js /src

```
1 angular.module('tourists-tripping', [])
2   .directive('touristsTrippingApp', function () {
3     return {
4       restrict: 'E',
5       templateUrl: 'tourists-tripping.html',
6       link: function (scope) {
7
8       }
9     }
10  })
11
12 TouristsTrippingApp.annotations = [
13   new angular.ComponentAnnotation({
14     selector: 'tourists-tripping-app',
15     appInjector: [NeighborhoodHandler]
16   }),
17   new angular.ViewAnnotation({
18     templateUrl: 'tourists-tripping.html',
19     directives: [angular.NgFor, PeopleCount]
20   })
21 ];
22 TouristsTrippingApp.parameters = [
23   [NeighborhoodHandler]
24 ];
25 function TouristsTrippingApp(neighborhoodHandler) {
```




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tourists-tripping.js

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tsconfig.json

tourists-tripping.js /src

```
11     }  
12   })  
13  
14   TouristsTrippingApp.annotations = [  
15     new angular.ComponentAnnotation({  
16       selector: 'tourists-tripping-app',  
17       appInjector: [NeighborhoodHandler]  
18     }),  
19     new angular.ViewAnnotation({  
20       templateUrl: 'tourists-tripping.html',  
21       directives: [angular.NgFor, PeopleCount]  
22     })  
23   ];  
24   TouristsTrippingApp.parameters = [  
25     [NeighborhoodHandler]  
26   ];  
27   function TouristsTrippingApp(neighborhoodHandler) {  
28     this.neighborhoodHandler = neighborhoodHandler;  
29  
30     this.neighborhoods = neighborhoodHandler.neighborhoods;  
31  
32     neighborhoodHandler.pushNeighborhood(  
33       'Central Amsterdam',  
34       'Red Light District',  
35       'Leidseplein',
```



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tourists-tripping.html

tourists-tripping.js

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tsconfig.json

tourists-tripping.js /src

```
3 :turn {
4   restrict: 'E',
5   templateUrl: 'tourists-tripping.html',
6   link: function (scope) {
7     scope.neighborhoods = neighborhoodHandler.neighborhoods;
8
9     scope.updateNeighborhood = function(neighborhood, amount) {
10       neighborhoodHandler.updateNeighborhood(neighborhood, amount);
11     };
12   }
13
14
15
16 touristsTrippingApp(neighborhoodHandler) {
17   neighborhoodHandler = neighborhoodHandler;
18
19   neighborhoods = neighborhoodHandler.neighborhoods;
20
21   neighborhoodHandler.pushNeighborhood(
22     'Central Amsterdam',
23     'Red Light District',
24     'De Nieuwe Markt',
25     'De Oude Zuid',
26     'Rembrandtplein',
27     'De Jordaan',
```



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tourists-tripping.js /src

```
1 angular.module('tourists-tripping', [])
2   .directive('touristsTrippingApp', function (neighborhoodHandler) {
3     return {
4       restrict: 'E',
5       templateUrl: 'tourists-tripping.html',
6       link: function (scope) {
7         scope.neighborhoods = neighborhoodHandler.neighborhoods
8
9         scope.updateNeighborhood = function(neighborhood, amount) {
10           neighborhoodHandler.updateNeighborhood(neighborhood, amount)
11         };
12       }
13     }
14  })
15
16 function TouristsTrippingApp(neighborhoodHandler) {
17
18   neighborhoodHandler.pushNeighborhood(
19     'Central Amsterdam',
20     'Red Light District',
21     'Leidseplein',
22     'Oud Zuid',
23     'Rembrandtplein',
24     'Jordaan',
25     'The Plantagebuurt',
```




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tourists-tripping.js /src

```
1 angular.module('tourists-tripping', [])
2   .run(function (neighborhoodHandler) {
3     neighborhoodHandler.pushNeighborhood(
4       'Central Amsterdam',
5       'Red Light District',
6       'Leidseplein',
7       'Oud Zuid',
8       'Rembrandtplein',
9       'Jordaan',
10      'The Plantagebuurt',
11      'De Pijp'
12    );
13  })
14  .directive('touristsTrippingApp', function (neighborhoodHandler) {
15    return {
16      restrict: 'E',
17      templateUrl: 'tourists-tripping.html',
18      link: function (scope) {
19        scope.neighborhoods = neighborhoodHandler.neighborhoods
20
21        scope.updateNeighborhood = function(neighborhood, amount) {
22          neighborhoodHandler.updateNeighborhood(neighborhood, amount)
23        };
24      }
25    }
26  })
```



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tourists-tripping.js /src

```
12     );
13   })
14   .directive('touristsTrippingApp', function (neighborhoodHandler) {
15     return {
16       restrict: 'E',
17       templateUrl: 'tourists-tripping.html',
18       link: function (scope) {
19         scope.neighborhoods = neighborhoodHandler.neighborhoods;
20
21         scope.updateNeighborhood = function(neighborhood, amount) {
22           neighborhoodHandler.updateNeighborhood(neighborhood, amount);
23         };
24       }
25     };
26   });
27
28 document.addEventListener('DOMContentLoaded', function () {
29   angular.bootstrap(document, ['tourists-tripping']);
30 });
31
```




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• neighborhood-handler.js /src/service/neighborhood-handler

```
1 angular.module('tourists-tripping')
2   .service('neighborhoodHandler', NeighborhoodHandler);|
3
4 function NeighborhoodHandler(socketHandler) {
5   var neighborhoods = this.neighborhoods = [];
6   this.socketHandler = socketHandler;
7
8   this.socketHandler.onUpdateNeighborhood(function(name, amount) {
9     var neighborhood = neighborhoods.filter(
10       function(n) { return n.name === name; }
11     )[0];
12
13     if (neighborhood) {
14       neighborhood.setTTAmount(amount);
15     }
16   });
17 }
18
19 NeighborhoodHandler.prototype.pushNeighborhood = function() {
20   this.neighborhoods.push.apply(
21     this.neighborhoods,
22     Array.prototype.slice.call(arguments).map(
23       function(name) { return new Neighborhood(name); }
24     )
25   );
```



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neighborhood-handler.js /src/service/neighborhood-handler

```
10     var neighborhood = neighborhoods.filter(  
11         function(n) { return n.name === name; }  
12     )[0];  
13  
14     if (neighborhood) {  
15         neighborhood.setTTAmount(amount);  
16     }  
17 });  
18 }  
19  
20 NeighborhoodHandler.prototype.pushNeighborhood = function() {  
21     var Neighborhood = this.Neighborhood;  
22     this.neighborhoods.push.apply(  
23         this.neighborhoods,  
24         Array.prototype.slice.call(arguments).map(  
25             function(name) { return new Neighborhood(name); }  
26         )  
27     );  
28 };  
29  
30 NeighborhoodHandler.prototype.updateNeighborhood = function(neighborhood  
31     neighborhood.setTTAmount(amount);  
32     this.socketHandler.updateNeighborhood(neighborhood.name, amount);  
33 };  
34
```



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neighborhood-handler.js /src/service/neighborhood-handler



```
1 (function () {
2   angular.module('tourists-tripping')
3     .service('neighborhoodHandler', NeighborhoodHandler);
4
5   function NeighborhoodHandler(socketHandler, Neighborhood) {
6     var neighborhoods = this.neighborhoods = [];
7     this.socketHandler = socketHandler;
8     this.Neighborhood = Neighborhood;
9
10    this.socketHandler.onUpdateNeighborhood(function(name, amount) {
11      var neighborhood = neighborhoods.filter(
12        function(n) { return n.name === name; }
13      )[0];
14
15      if (neighborhood) {
16        neighborhood.setTTAmount(amount);
17      }
18    });
19  }
20
21  NeighborhoodHandler.prototype.pushNeighborhood = function() {
22    var Neighborhood = this.Neighborhood;
23    this.neighborhoods.push.apply(
24      this.neighborhoods,
25      Array.prototype.slice.call(arguments).map(
```




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● socket-handler.js /src/service/socket-handler

```
1 (function () {
2   angular.module('tourists-tripping')
3     .service('socketHandler', SocketHandler);
4
5   function SocketHandler() {
6     this.socket = io.connect("http://localhost:9898");
7   }
8
9   SocketHandler.prototype.updateNeighborhood = function(name, TTAmount) {
10     var event = {};
11     event[name] = TTAmount;
12     this.socket.emit('updateNeighborhoods', event);
13   };
14
15   SocketHandler.prototype.onUpdateNeighborhood = function(listener) {
16     this.socket.on('updateNeighborhoods', function(data) {
17       Object.keys(data).forEach(function(name) {
18         listener(name, data[name]);
19       });
20     });
21   };
22 }());
```



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neighborhood.js /src/service/neighborhood-handler

```
1 angular.module('tourists-tripping')
2   .factory('Neighborhood', function () {
3     return Neighborhood;
4   });
5
6 function Neighborhood(name, TTAmt) {
7   this.name = name;
8   this.TTAmt = TTAmt || 0;
9 }
10
11 Neighborhood.prototype.setTTAmt = function (value) {
12   this.TTAmt = parseFloat(value);
13   return this;
14 };
15
```




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neighborhood.js /src/service/neighborhood-handler

```
1 (function () {  
2     angular.module('tourists-tripping')  
3         .factory('Neighborhood', function () {  
4             return Neighborhood;  
5         });  
6  
7     function Neighborhood(name, TTAmount) {  
8         this.name = name;  
9         this.TTAmount = TTAmount || 0;  
10    }  
11  
12    Neighborhood.prototype.setTTAmount = function (value) {  
13        this.TTAmount = parseFloat(value);  
14        return this;  
15    };  
16 }());
```



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neighborhood.js /src/service/neighborhood-handler



```
1 (function () {  
2     angular.module('tourists-tripping')  
3         .value('Neighborhood', Neighborhood);  
4  
5     function Neighborhood(name, TTAmt) {  
6         this.name = name;  
7         this.TTAmt = TTAmt || 0;  
8     }  
9  
10    Neighborhood.prototype.setTTAmt = function (value) {  
11        this.TTAmt = parseFloat(value);  
12        return this;  
13    };  
14 }());
```



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tsconfig.json



people-count.js /src/component/people-count



```
1 PeopleCount.annotations = [  
2   new angular.ComponentAnnotation({  
3     selector: 'people-count',  
4     properties: ['title: tt-title', 'amount: tt-amount'],  
5     appInjector: [angular.FormBuilder],  
6     lifecycle: [angular.onChange],  
7     events: ['ttAmountChange']  
8   }),  
9   new angular.ViewAnnotation({  
10    templateUrl: 'component/people-count/people-count',  
11    directives: [angular.formDirectives]  
12  })  
13 ];  
14 PeopleCount.parameters = [  
15   [angular.FormBuilder]  
16 ];  
17 function PeopleCount(builder) {  
18   this.ttAmountChange = new angular.EventEmitter();  
19  
20   this.amountControl = new angular.Control();  
21  
22   this.peopleCountForm = builder.group({  
23     amount: this.amountControl  
24   });  
25 }
```



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• people-count.js /src/component/people-count

```
1 angular.module('tourists-tripping')
2   .directive('peopleCount', function () {
3     return {
4       restrict: 'E'
5     }
6   })
7
8 PeopleCount.annotations = [
9   new angular.ComponentAnnotation({
10     selector: 'people-count',
11     properties: ['title: tt-title', 'amount: tt-amount'],
12     appInjector: [angular.FormBuilder],
13     lifecycle: [angular.onChange],
14     events: ['ttAmountChange']
15   }),
16   new angular.ViewAnnotation({
17     templateUrl: 'component/people-count/people-count',
18     directives: [angular.formDirectives]
19   })
20 ];
21 PeopleCount.parameters = [
22   [angular.FormBuilder]
23 ];
24 function PeopleCount(builder) {
25   this.ttAmountChange = new angular.EventEmitter();
```




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● people-count.js /src/component/people-count

```
1 angular.module('tourists-tripping')
2   .directive('peopleCount', function () {
3     return {
4       restrict: 'E',
5       templateUrl: '%component/people-count/people-count'
6     }
7   })
8
9 PeopleCount.annotations = [
10   new angular.ComponentAnnotation({
11     selector: 'people-count',
12     properties: ['title: tt-title', 'amount: tt-amount'],
13     appInjector: [angular.FormBuilder],
14     lifecycle: [angular.onChange],
15     events: ['ttAmountChange']
16   }),
17   new angular.ViewAnnotation({
18     templateUrl: 'component/people-count/people-count',
19     directives: [angular.formDirectives]
20   })
21 ];
22 PeopleCount.parameters = [
23   [angular.FormBuilder]
24 ];
25 function PeopleCount(builder) {
```




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● people-count.js /src/component/people-count

```
1 angular.module('tourists-tripping')
2   .directive('peopleCount', function () {
3     return {
4       restrict: 'E',
5       templateUrl: 'component/people-count/people-count',
6       scope: {
7         title: '=ttTitle',
8         amount: '=ttAmount'
9       }
10    }
11  })
12
13 PeopleCount.annotations = [
14   new angular.ComponentAnnotation({
15     selector: 'people-count',
16     properties: ['title: tt-title', 'amount: tt-amount'],
17     appInjector: [angular.FormBuilder],
18     lifecycle: [angular.onChange],
19     events: ['ttAmountChange']
20   }),
21   new angular.ViewAnnotation({
22     templateUrl: 'component/people-count/people-count',
23     directives: [angular.formDirectives]
24   })
25 ];
```



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● people-count.js /src/component/people-count

```
1 angular.module('tourists-tripping')
2   .directive('peopleCount', function () {
3     return {
4       restrict: 'E',
5       templateUrl: 'component/people-count/people-count',
6       scope: {
7         title: '=ttTitle',
8         amount: '=ttAmount',
9         ttAmountChange: '&'
10      }
11    }
12  })
13
14 PeopleCount.annotations = [
15   new angular.ComponentAnnotation({
16     selector: 'people-count',
17     properties: ['title: tt-title', 'amount: tt-amount'],
18     appInjector: [angular.FormBuilder],
19     lifecycle: [angular.onChange],
20     events: ['ttAmountChange']
21   }),
22   new angular.ViewAnnotation({
23     templateUrl: 'component/people-count/people-count',
24     directives: [angular.formDirectives]
25   })
26 ]
```



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● people-count.js /src/component/people-count

```
1 angular.module('tourists-tripping')
2   .directive('peopleCount', function () {
3     return {
4       restrict: 'E',
5       templateUrl: 'component/people-count/people-count',
6       scope: {
7         title: '=ttTitle',
8         amount: '=ttAmount',
9         ttAmountChange: '&'
10      },
11      link: function (scope) {
12
13      }
14    }
15  })
16
17 PeopleCount.annotations = [
18   new angular.ComponentAnnotation({
19     selector: 'people-count',
20     properties: ['title: tt-title', 'amount: tt-amount'],
21     appInjector: [angular.FormBuilder],
22     lifecycle: [angular.onChange],
23     events: ['ttAmountChange']
24   }),
25   new angular.ViewAnnotation({
```




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● people-count.js /src/component/people-count

```
6         title: '=ttTitle',
7         amount: '=ttAmount',
8         ttAmountChange: '&'
9     },
10    },
11    link: function (scope) {
12    },
13    },
14    },
15    })
16
17    PeopleCount.annotations = [
18        new angular.ComponentAnnotation({
19            selector: 'people-count',
20            properties: ['title: tt-title', 'amount: tt-amount'],
21            appInjector: [angular.FormBuilder],
22            lifecycle: [angular.onChange],
23            events: ['ttAmountChange']
24        }),
25        new angular.ViewAnnotation({
26            templateUrl: 'component/people-count/people-count',
27            directives: [angular.formDirectives]
28        })
29    ];
30    PeopleCount.parameters = [
31        [angular.FormBuilder]
```



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● people-count.js /src/component/people-count

```
2      .directive('peopleCount', function () {
3          return {
4              restrict: 'E',
5              templateUrl: 'component/people-count/people-count',
6              scope: {
7                  title: '=ttTitle',
8                  amount: '=ttAmount',
9                  ttAmountChange: '&'
10             },
11             link: function (scope) {
12
13             }
14         }
15     })
16
17     function PeopleCount(builder) {
18         this.ttAmountChange = new angular.EventEmitter();
19
20         this.amountControl = new angular.Control();
21
22         this.peopleCountForm = builder.group({
23             amount: this.amountControl
24         });
25     }
26
```




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● people-count.js /src/component/people-count

```
4      restrict: 'E',
5      templateUrl: 'component/people-count/people-count',
6      scope: {
7          title: '=ttTitle',
8          amount: '=ttAmount',
9          ttAmountChange: '&'
10     },
11     link: function (scope) {
12         scope.amountControl = 0;
13
14         scope.$watch('amount', function (value) {
15             scope.amountControl = value;
16         });
17     }
18 }
19 });
20
21 function PeopleCount(builder) {
22     this.ttAmountChange = new angular.EventEmitter();
23
24     this.amountControl = new angular.Control();
25
26     this.peopleCountForm = builder.group({
27         amount: this.amountControl
28     });
```



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people-count.js /src/component/people-count



```
1 angular.module('tourists-tripping')
2   .directive('peopleCount', function () {
3     return {
4       restrict: 'E',
5       templateUrl: 'component/people-count/people-count',
6       scope: {
7         title: '=ttTitle',
8         amount: '=ttAmount',
9         ttAmountChange: '&'
10      },
11      link: function (scope) {
12        scope.amountControl = 0;
13
14        scope.$watch('amount', function (value) {
15          scope.amountControl = value;
16        });
17
18        scope.reportAmount = function() {
19          var event = {
20            amount: this.amountControl
21          };
22          this.ttAmountChange({$event: event});
23        };
24      }
25    }
26  }
```



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people-count.html /src/component/people-count

```
1
2 <div class="panel panel-default">
3   <div class="panel-heading">
4     {{ title }}
5   </div>
6   <div class="panel-body">
7     <p>How many Tourists on a trip do you see?</p>
8     <form>
9       <input type="range" ng-model="amountControl" />
10      Value: {{ amountControl }}
11    </form>
12  </div>
13  <div class="panel-footer">
14    <button type="button" class="btn btn-success"
15      (click)="reportAmount()">Report</button>
16  </div>
17 </div>
```



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people-count.html /src/component/people-count



```
1
2 <div class="panel panel-default">
3   <div class="panel-heading">
4     {{ title }}
5   </div>
6   <div class="panel-body">
7     <p>How many Tourists on a trip do you see?</p>
8     <form>
9       <input type="range" ng-model="amountControl" />
10      Value: {{ amountControl }}
11    </form>
12  </div>
13  <div class="panel-footer">
14    <button type="button" class="btn btn-success"
15      ng-click="reportAmount()">Report</button>
16  </div>
17 </div>
```




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• tourists-tripping.html /src

```
1 <h1>
2   Tourists on a Trip
3 </h1>
4
5 <div class="row" ng-repeat="neighborhood in neighborhoods">
6   <div class="col-md-12">
7     ModelValue: {{ neighborhood.TTAmount }}
8     <people-count
9       [tt-title]="neighborhood.name"
10      [tt-amount]="neighborhood.TTAmount"
11      (tt-amount-change)="updateNeighborhood(neighborhood, $event)"
12    ></people-count>
13  </div>
14 </div>
```




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tourists-tripping.html /src



```
1 <h1>
2   Tourists on a Trip
3 </h1>
4
5 <div class="row" ng-repeat="neighborhood in neighborhoods">
6   <div class="col-md-12">
7     ModelValue: {{ neighborhood.TTAmount }}
8     <people-count
9       tt-title="neighborhood.name"
10      tt-amount="neighborhood.TTAmount"
11      tt-amount-change="updateNeighborhood(neighborhood, $event, amount)"
12    ></people-count>
13  </div>
14 </div>
```



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index.html /src

```
1 <!doctype html>
2 <html>
3   <head>
4     <title>Tourists on a Trip</title>
5     <link href="/vendor/bootstrap.min.css" rel="stylesheet"></link>
6     <link href="/vendor/material-fullpalette.css" rel="stylesheet">
7     <script src="/vendor/traceur-runtime.js"></script>
8     <script src="/vendor/system@0.16.11.js"></script>
9     <script src="/vendor/angular-1.4.0.js"></script>
10    <script src="http://localhost:9898/socket.io/socket.io.js"></script>
11
12    <script src="/tourists-tripping.js"></script>
13    <script src="/component/people-count/people-count.js"></script>
14    <script src="/service/socket-handler/socket-handler.js"></script>
15    <script src="/service/neighborhood-handler/neighborhood.js"></script>
16    <script src="/service/neighborhood-handler/neighborhood-handler.js"></script>
17  </head>
18  <body>
19    <tourists-tripping-app></tourists-tripping-app>
20  </body>
21 </html>
```

Tourists on a Trip

ModelValue: 67

Central Amsterdam

How many Tourists on a trip do you see?

Value: 3

REPORT

ModelValue: 0

Red Light District

How many Tourists on a trip do you see?

Value: 0

REPORT

ModelValue: 0

Leidseplein

How many Tourists on a trip do you see?

Value: 0

REPORT

Tourists on a Trip

ModelValue: 67

Central Amsterdam

How many Tourists on a trip do you see?

Value: 67

REPORT

ModelValue: 0

Red Light District

How many Tourists on a trip do you see?

Value: 0

REPORT

ModelValue: 0

Leidseplein

How many Tourists on a trip do you see?

Value: 0

REPORT



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socket-handler.js /src/service/socket-handler



```
1 (function () {
2     angular.module('tourists-tripping')
3         .service('socketHandler', SocketHandler);
4
5     function SocketHandler() {
6         this.socket = io.connect("http://localhost:9898");
7     }
8
9     SocketHandler.prototype.updateNeighborhood = function(name, TTAmount) {
10         var event = {};
11         event[name] = TTAmount;
12         this.socket.emit('updateNeighborhoods', event);
13     };
14
15     SocketHandler.prototype.onUpdateNeighborhood = function(listener) {
16         this.socket.on('updateNeighborhoods', function(data) {
17             Object.keys(data).forEach(function(name) {
18                 listener(name, data[name]);
19             });
20         });
21     };
22 }());
```




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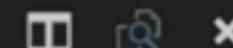
tourists-tripping.js

▶ typings

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socket-handler.js /src/service/socket-handler



```
2  angular.module('tourists-tripping')
3      .service('socketHandler', SocketHandler);
4
5  function SocketHandler($rootScope) {
6      this.$rootScope = $rootScope;
7      this.socket = io.connect("http://localhost:9898");
8  }
9
10 SocketHandler.prototype.updateNeighborhood = function(name, TTAmount) {
11     var event = {};
12     event[name] = TTAmount;
13     this.socket.emit('updateNeighborhoods', event);
14 };
15
16 SocketHandler.prototype.onUpdateNeighborhood = function(listener) {
17     var $rootScope = this.$rootScope;
18     this.socket.on('updateNeighborhoods', function(data) {
19         $rootScope.$apply(function () {
20             Object.keys(data).forEach(function(name) {
21                 listener(name, data[name]);
22             });
23         });
24     });
25 };
26 }();
```


Done Coding!

What Did We Learn?

Modules

ES6 & Typescript

Components & Isolation

Declarative

Controller As

Resources

<http://victorsavkin.com/>

<http://blog.ionic.io/angular-2-series-introduction/>

<http://blog.thoughttram.io/>

<http://angular-tips.com/blog/2015/06/why-will-angular-2-rock/>

<https://github.com/angular/angular>

& Much More...

Demo & Presentation Repository

<https://github.com/rodyhaddad/tourists-on-a-trip>

Please evaluate
this talk via the
mobile app!



Questions?

@rodyhaddad