Angular 2
Module 3 - Services

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Services

Doel – datafunctionality herbruikbaar maken voor verschillende componenten

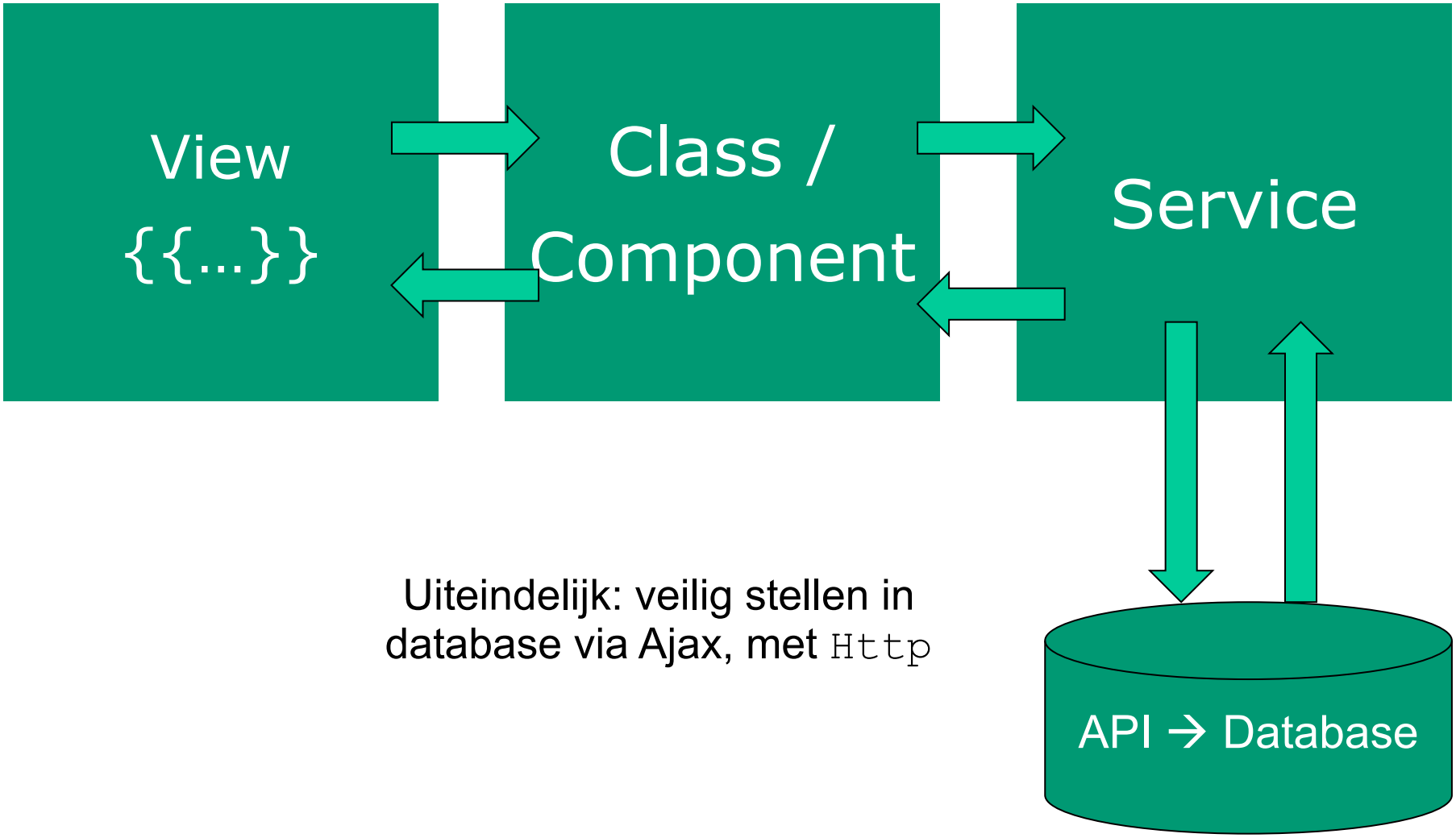
- Data retrieval
- Data caching
- Data Storage,
- …

- Angular 2 : één optie
  - `export class myDataService { … }`

Singleton?

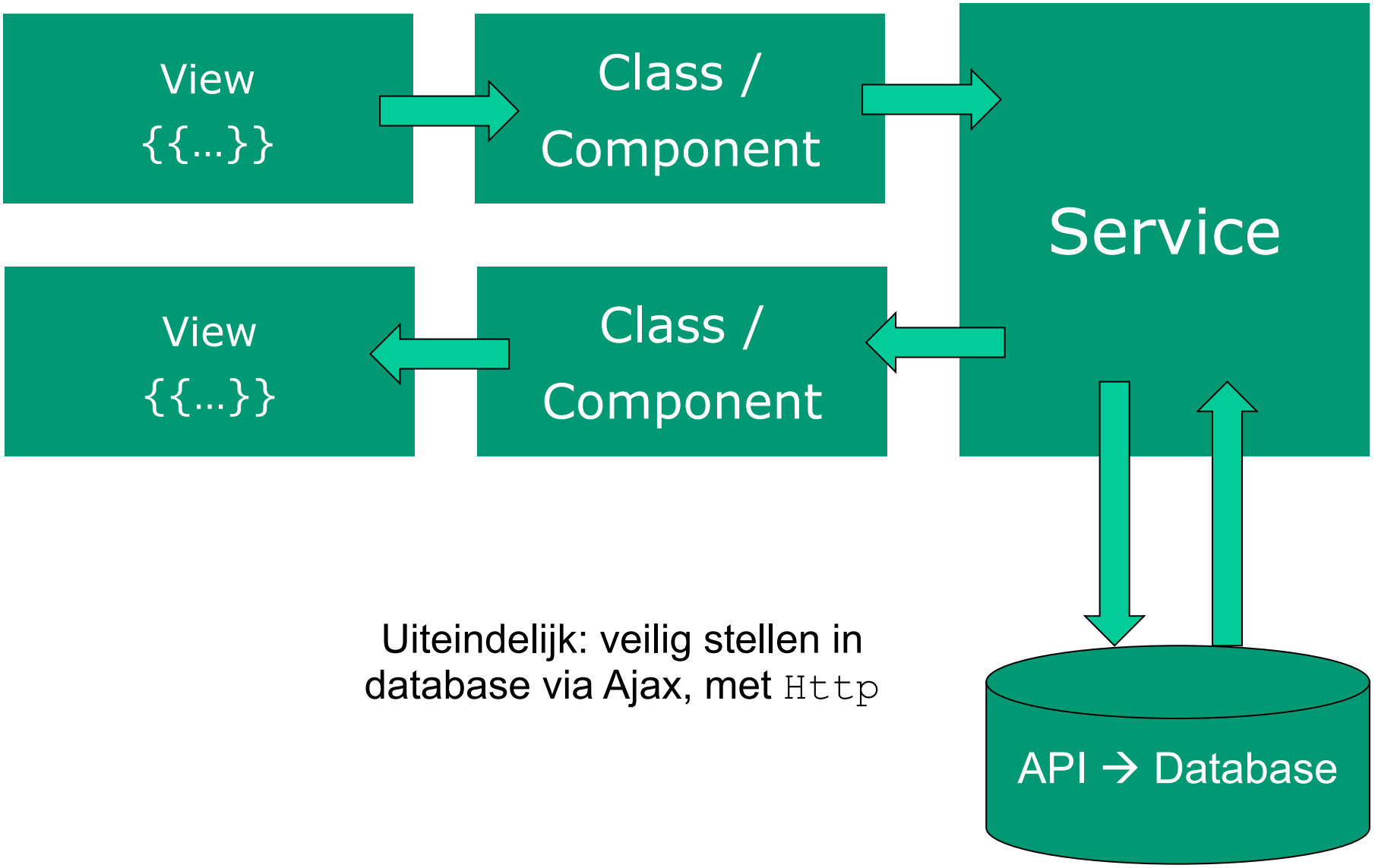
- Services zijn (in principe) singletons
  - Maar: afhankelijk van de plek waar ze geïnstantieerd worden!
  - Ze zijn een singleton voor de component en alle child components.
  - Module/Site-wide gebruiken? Instantieer service in `app.module.ts`

Data flow



Uiteindelijk: veilig stellen in database via Ajax, met `Http`

Data flow



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Services in Angular 2

Data services in Angular 1:

```
angular.module('myApp')
  .service(…)
  .factory(…)
  .provider(…)
```

Data services in Angular 2:

```
import {Injectable} from 'angular2/core';

@Injectable()
export class CityService{
   //....
}
```

De rol van @Injectable

Why? – Dependency Injection (DI) en metadata!

"TypeScript sees the @Injectable() decorator and emits metadata about our service, metadata that Angular may need to inject other dependencies into this service."

https://angular.io/docs/ts/latest/tutorial/toh-pt4.html

"Our service doesn't have any dependencies at the moment. Add the decorator anyway.

It is a best practice to apply the `@Injectable()` *decorator* ***from the start*** *both for consistency and for future-proofing"*

Stap 1 – service maken (static data)

```
import { Injectable } from '@angular/core';
import { City } from './city.model'

@Injectable()
export class CityService {
   cities:City[] = [
      new City(1, 'Groningen', 'Groningen'),
      …
   ];

   // retourneer alle cities
   getCities() {
      return this.cities
   }

   // retourneer city op basis van ID
   getCity(id:number) {
       return this.cities.find(c => c.id === id);
   }
}
```

Stap 2 – Service consumeren/injecten

```
…
import {CityService} from "./city.service";

@Component({
   selector    : 'hello-world',
   templateUrl: 'app/app.html',
})

export class AppComponent implements OnInit {
   // Properties voor de component/class
   currentCity: City;
   cities: City[];
   cityPhoto: string;

   constructor(private cityService: CityService) {

   }

   ngOnInit() {
      this.cities = this.cityService.getCities();
   }

   getCity(city: City) {
      this.currentCity = this.cityService.getCity(city.id);
      this.cityPhoto   = `img/${this.currentCity.name}.jpg`;
      console.log('City opgehaald:', this.currentCity);
   }
}
```

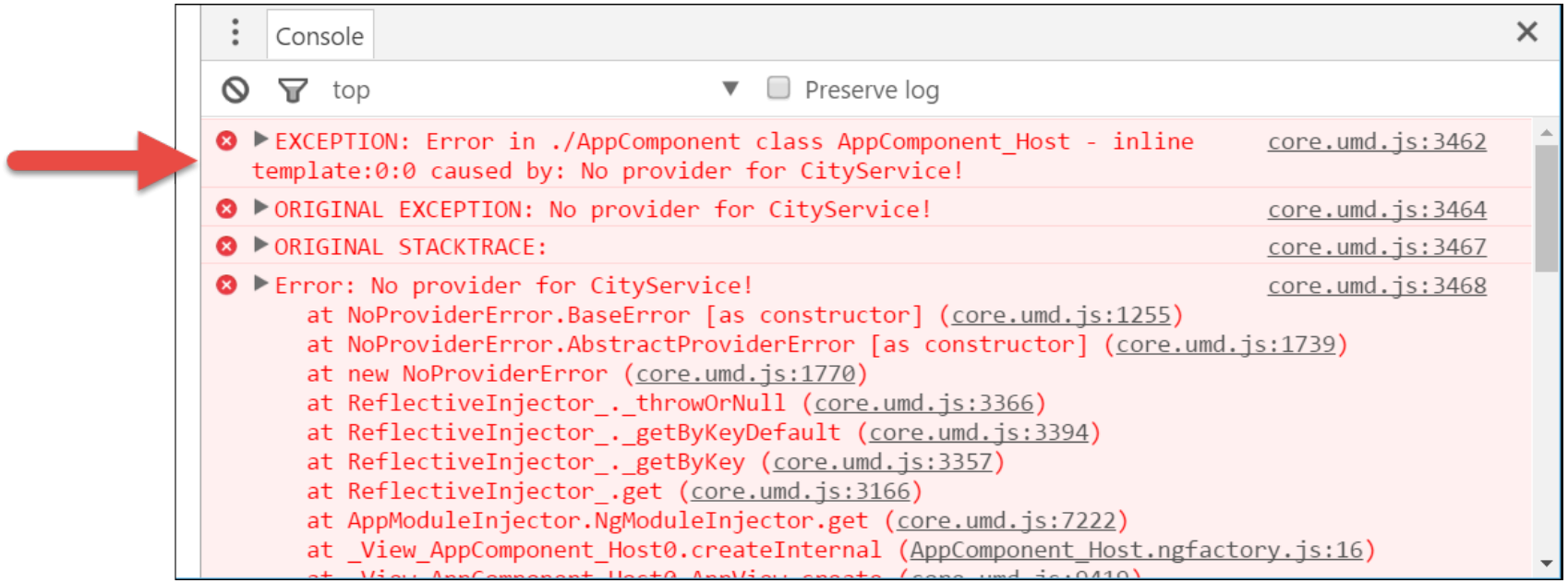
local variables

Constructor: shorthand voor nieuwe private variable + instantiering!

Detailgegevens voor city bij (click) event

“No provider for CityService”

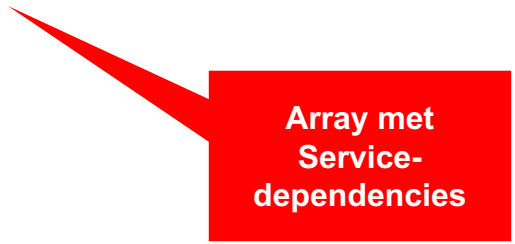
- Solution: inject in `app.module.ts`



Service injecteren in Module

- Alleen de *referentie* naar CityService is niet voldoende.
- Angular moet de service *injecteren* in de module
- Gebruik de annotatie `providers: [ … ]`

```
// Module declaration
@NgModule({
    imports      : [BrowserModule],
    declarations: [AppComponent],
    bootstrap    : [AppComponent],
    providers    : [CityService] // DI voor service
})
export class AppModule {
}
```



Checkpoint

- Elke service in Angular 2 is een `class`
- Class importeren in de component die hem gebruikt
- Instantiëren in `constructor()`
- Service invoegen in de Module
- Oefening 5a) + 5b)

Oefening….