



Angular Fundamentals

Module - Services



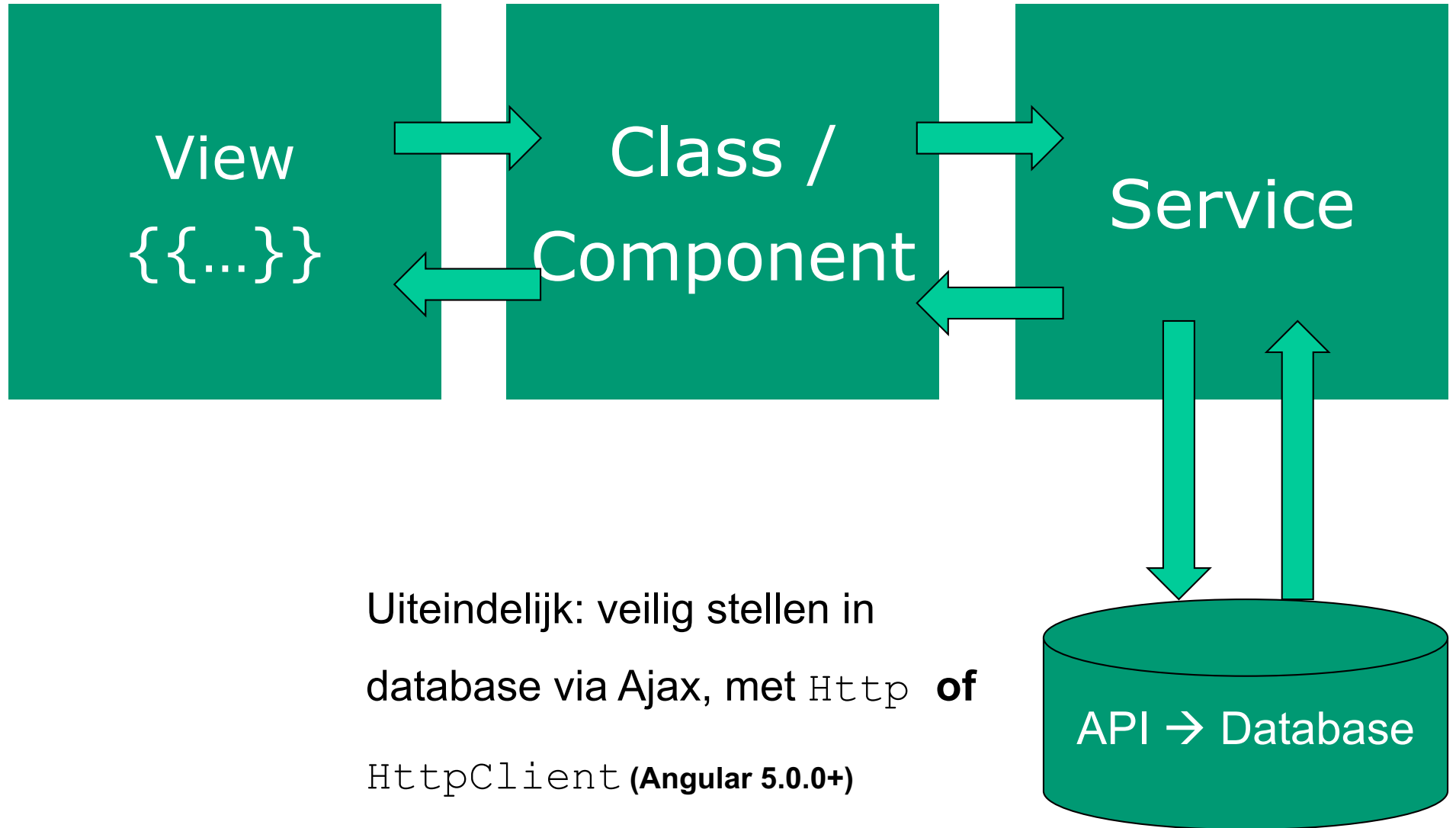
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Services

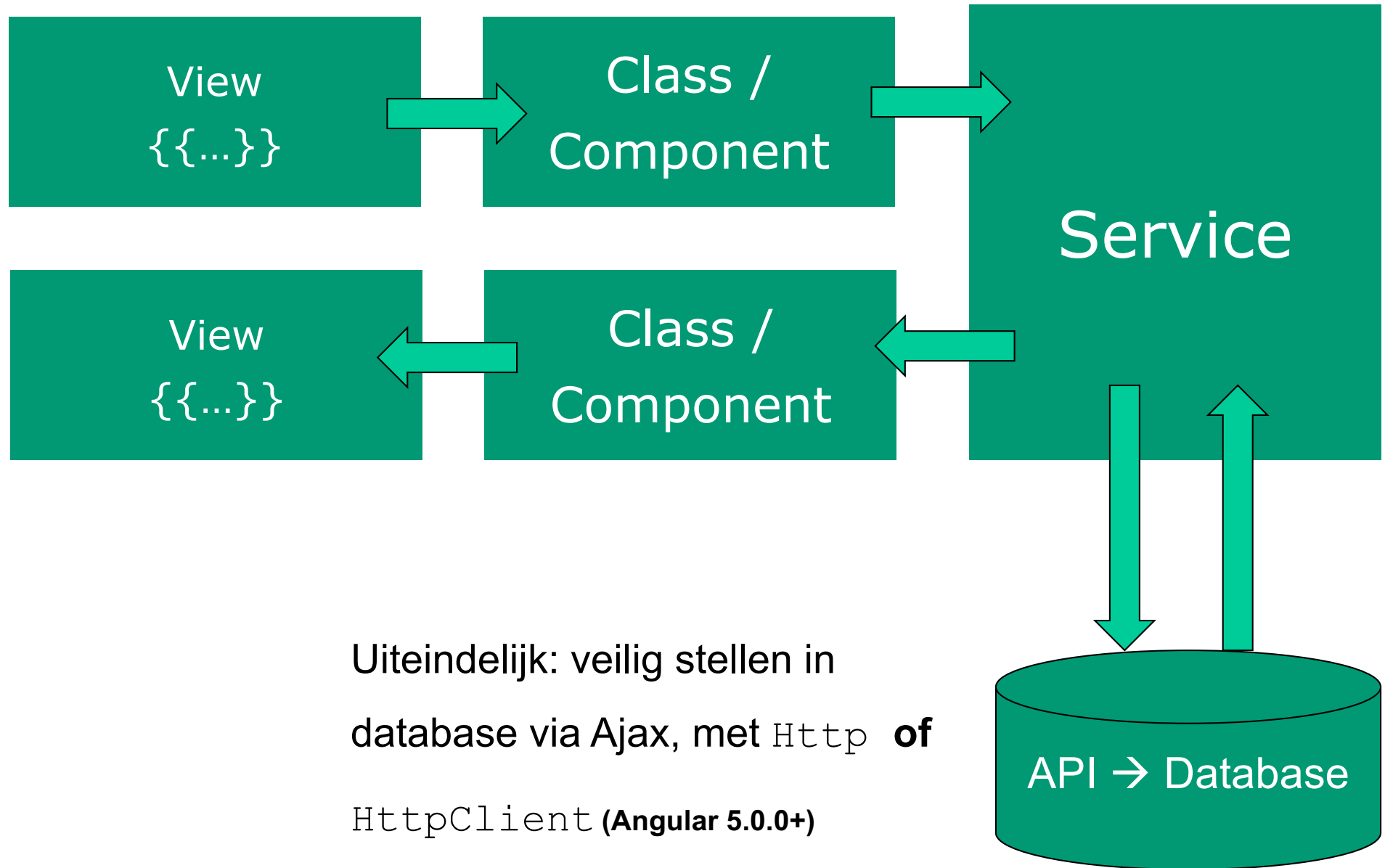
Doel – datafunctionality herbruikbaar maken voor verschillende componenten

- Data retrieval
 - Data caching
 - Data Storage,
 - ...
-
- Angular 2 : één optie
 - `export class myDataService { ... }`

Data flow



Data flow



Services in Angular 2

Data services in Angular 1:

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

Data services in Angular 2:

```
import {Injectable} from '@angular/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 +
instantiëring!

Detailgegevens voor
city bij (click) event

Instantiation?

- Let op: geen `new()` instantie van de Service!
 - Services zijn Singletons
 - Worden opgehaald uit de Module en/of geïnstantieerd in een `constructor()`

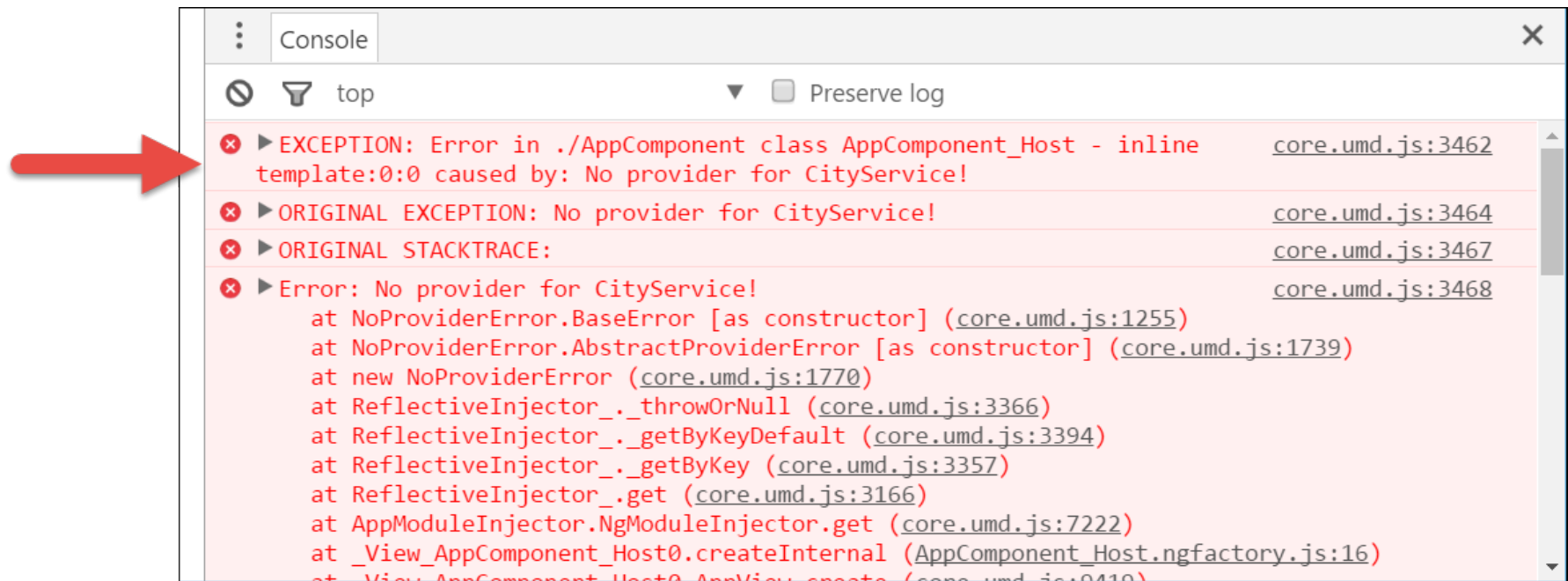
```
constructor(private cityService:CityService) { ... }
```

"The constructor itself does nothing.

*The parameter simultaneously defines a
private cityService property and identifies it
as a CityService injection service."*

“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 {  
}
```



Array met
Service-
dependencies

Singleton?

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

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
- Voorbeeld: `/200-services-static`
- Oefening 5a) + 5b)

Oefening....

