HTTP

HTTP

Outline

- Introduction
- Using @angular/comm/http
- Setup
  - Injecting HttpClient Service
- A Basic Request
  - Building Simple HTTP Component
  - Building Template
- APIs of @angular/comm/http
- Making a POST Request
- PUT / PATCH / DELETE / HEAD
- Making a DELETE Request
- Custom HTTP Headers
- Summary
- Q&A

Introduction

- **Angular** comes with its own **HTTP** library which we can use to call out to external **APIs**.
- **HTTP** requests are **asynchronous**.
- Dealing with **asynchronous** code is, historically, more **tricky**.
- There are generally three approaches to dealing with **async** code:
  - Callbacks
  - Observables
  - Promises
- In **Angular**, the preferred method of dealing with **async** code is using **Observables**.

143

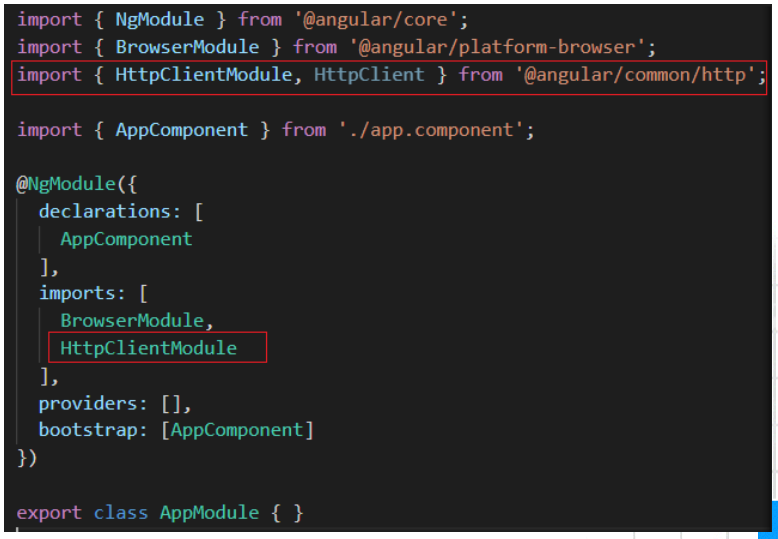
Using @angular/common/http

- **HTTP** has been split into a separate module in Angular.
- To use **HTTP** you need to **import** constants from **@angular/common/http**.

```
import {

//      The      NgModule      for      using
@angular/common/http

HttpClientModule,

// the class constants

HttpClient

} from '@angular/common/http';
```


144

Using @angular/common/http



```
import { NgModule } from '@angular/core';
import { BrowserModule } from '@angular/platform-browser';
import { HttpClientModule, HttpClient } from '@angular/common/http';

import { AppComponent } from './app.component';

@NgModule({
  declarations: [
    AppComponent
  ],
  imports: [
    BrowserModule,
    HttpClientModule
  ],
  providers: [],
  bootstrap: [AppComponent]
})

export class AppModule { }
```


145

Setup - @angular/common/http

- In our **app.module.ts** we're going to **import HttpClientModule** which is a convenience collection of modules.
- In our **@NgModule** we will add **HttpClientModule** to the list of **imports**.
  - Doing so, we will be able to **inject** HttpClient into our components.
- Now we can inject the **HttpClient service** into our components

```
export class SimpleHttpComponent implements OnInit {
  data: Object | undefined;
  loading: boolean = false;

  constructor(private http: HttpClient) { }
```


146

A Basic Request

- We're going to do make a simple **GET** request to the **jsonplaceholder** **API**.
- What we're going to do is:
  - Have a button that calls **makeRequest**
  - **makeRequest** will call the **http** library to perform a **GET** request on our API
  - When the request returns, we'll update **this.data** with the results of the **data**, which will be rendered in the view.

```
1   <h1>Basic Request</h1>
2   <button type="button" (click)="makeRequest()">Make Request</button>
3   <div *ngIf="loading">loading...</div>
4   <pre>{{data | json}}</pre>
```


147

Building - SimpleHttpComponent

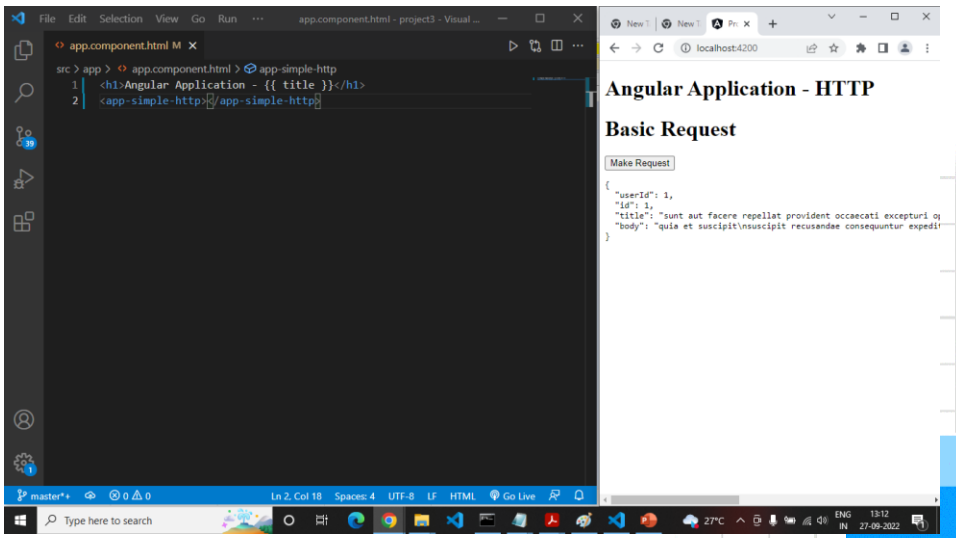
```
export class SimpleHttpComponent implements OnInit {
  data: Object | undefined;
  loading: boolean = false;

  constructor(private http: HttpClient) { }

  ngOnInit(): void {
  }

  makeRequest(): void {
    this.loading = true;
    this.http
    .get('https://jsonplaceholder.typicode.com/posts/1')
    .subscribe(data => {
    this.data = data;
    this.loading = false;
    });
  }
}
```


148

A Basic Request

- When we call **makeRequest**, the first thing we do is set **this.loading = true**.
- This will turn on the loading indicator in our view.
- To make an **HTTP** request is straightforward:
  - We call **this.http.get** and pass the URL to which we want to make a **GET** request.
- **http.get** returns an **Observable**.
  - We can **subscribe** to changes using subscribe.
- When the request returns, we'll update **this.data** with the results of the **data**.
- We're not loading anymore so we set **this.loading = false**.

Building the Template



APIs of @angular/common/http

- The **HTTP** requests we've made is the simple **GET** request.
- It's important that we know how we can make other requests too.
  - **POST**
  - **PUT**
  - **PATCH**
  - **DELETE**
  - **HEAD**

151

Making a POST request

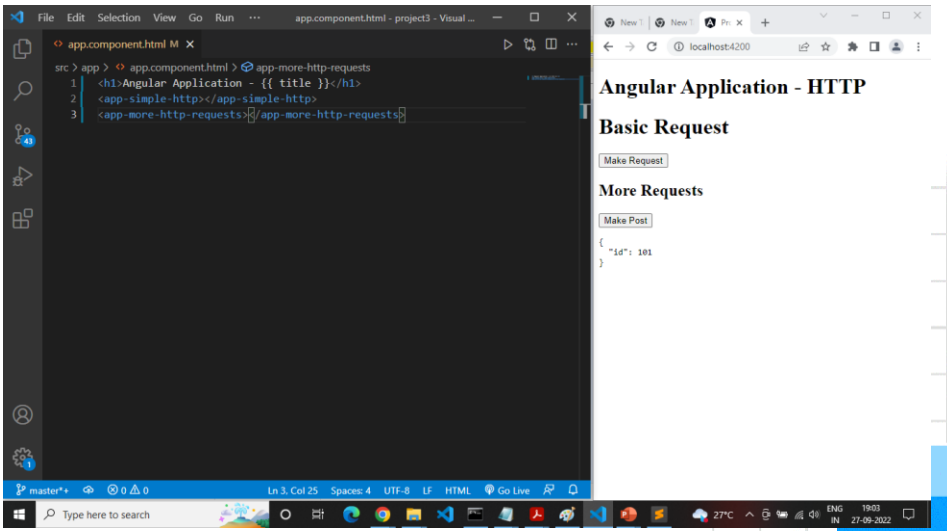
- Making **POST** request with **@angular/common/http** is very much like making a **GET** request except that we have one **additional parameter**: a body.
- **jsonplaceholder** API also provides a convent URL for testing our **POST** requests, so let's use it for a POST:

152

Making a POST request

```
makePost(): void {
  this.loading = true;
  this.http
    .post(
      'https://jsonplaceholder.typicode.com/posts',
      JSON.stringify({
        body: 'HTTP POST Method',
        title: 'Http Methods',
        userId: 1
      })
    )
    .subscribe(data => {
      this.data = data;
      this.loading = false;
    });
}
```


Making a POST request



PUT / PATCH / DELETE / HEAD

- There are a few other fairly common **HTTP** requests and we call them in much the same way.
- **http.put** and **http.patch** map to **PUT** and **PATCH** respectively and both take a URL and a body
- **http.delete** and **http.head** map to **DELETE** and **HEAD** respectively and both take a URL (no body)

155

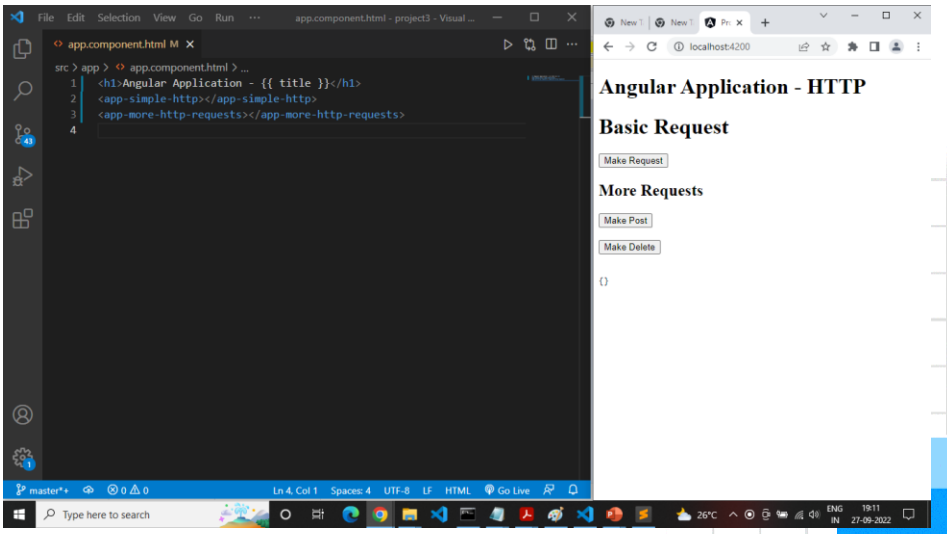
Making a DELETE Request

- The delete request just take an URL (no body)
- Look into the following code:

```
makeDelete(): void {
  this.loading = true;
  this.http
    .delete(
      'https://jsonplaceholder.typicode.com/posts/1')
    .subscribe(data => {
      this.data = data;
      this.loading = false;
    });
}
```


156

Making a DELETE request



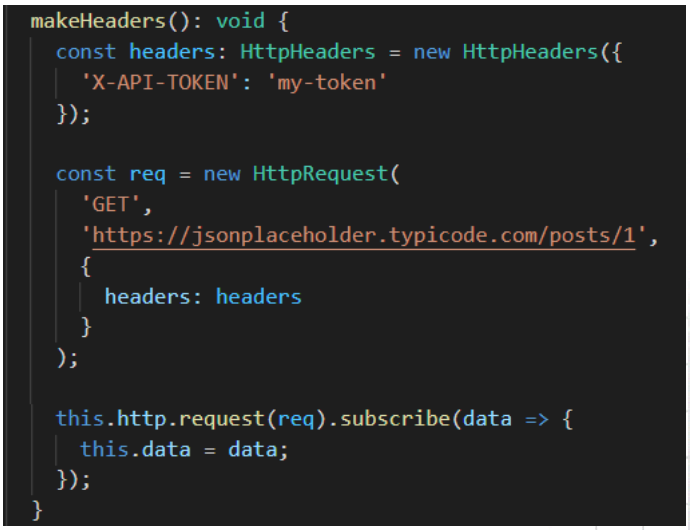
Custom HTTP Headers

- Let's say we want to craft a **GET** request that uses a special **X-API-TOKEN** header.
- We can create a request with this header as follows:

```
makeHeaders(): void {
  const headers: HttpHeaders = new HttpHeaders({
    'X-API-TOKEN': 'my-token'
  });
```

- Don't forget to import the **HttpHeaders** and **HttpRequest** modules
- Once the headers are crafted, we can sent the request to the **GET** method with the **URL** and the **header**.

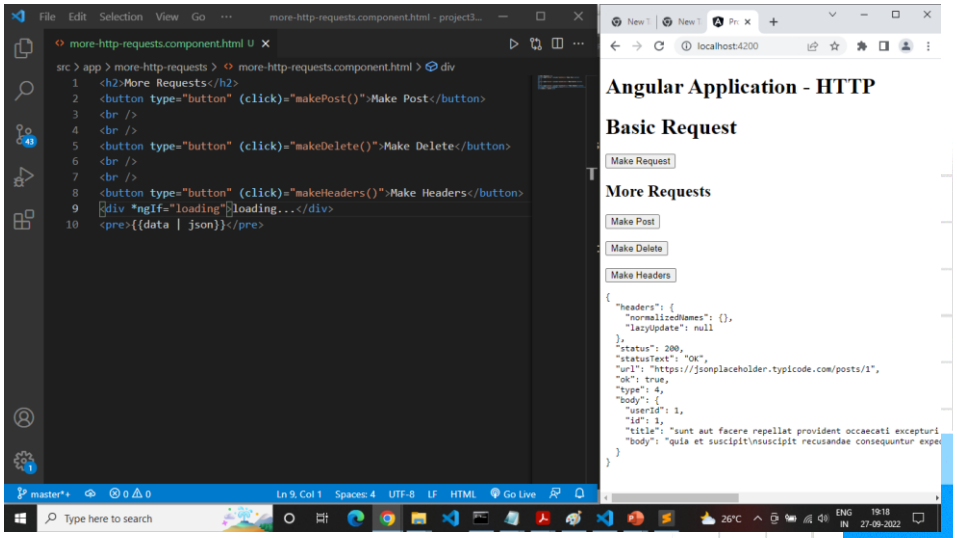
Custom HTTP Headers



```
makeHeaders(): void {
  const headers: HttpHeaders = new HttpHeaders({
    'X-API-TOKEN': 'my-token'
  });

  const req = new HttpRequest(
    'GET',
    'https://jsonplaceholder.typicode.com/posts/1',
    {
      headers: headers
    }
  );

  this.http.request(req).subscribe(data => {
    this.data = data;
  });
}
```


159

Custom HTTP Headers



160

Summary

- **@angular/common/http** is flexible and suitable for a wide variety of APIs.
- One of the great things about **@angular/common/http** is that it has support for mocking the backend which is very useful in testing.