NestJS | 2

Bootcamp

Discord | Official Documentation

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Disclaimer

- This is an optional course and will not effect your academic credit
- If you're not interested and cannot fullfill any requirement or class rules you will be resulted for class dropout.

General Rules

- Having a laptop and a separate notebook is compulsory
- Faliure to answer at least 3 viva question will result in dissmissal.
- Faliure to complete homework/classwork without any valid result will be unacceptable.

Prerequisite

- Separate notebook/copy for notes
- NVM with Node Installed
- PC with VS Code Installed
- Stable Internet Connection

Project Setup from Scratch

Something from Nothing?

- Will be hard ... very hard .. because we are staring from scratch
- What is scratch?
- We will learn behind-the-scenes stuff
- Know how NestJS works so will make all of Nest easy

Steps

- Open bash
- Go to `D:\backend\nestjs-bootcamp`
- Create a folder called `scratch`
- `cd` into `scratch`
- do `npm init -y` to make `package.json`

Steps

Install the following dependencies from terminal

- `npm install @nestjs/common@9.0.0`
- `npm install @nestjs/core@9.0.0`
- `npm install @nestjs/platform-express@9.0.0`
- `npm install reflect-metadata@0.1.13`
- `npm install typescript@4.7.4`

All are the basic necessary dependencies for NestJS

Open your `scratch` folder in VSCode after installation

package.json

@nestjs/common

> has functions, classes (libs) that we need from Nest

@nestjs/platform-express

> lets Nest use ExpressJs to handle http requests/response

reflect-metadata

> helps make decorators work (more later!)

typescript

> Nest app with typescript

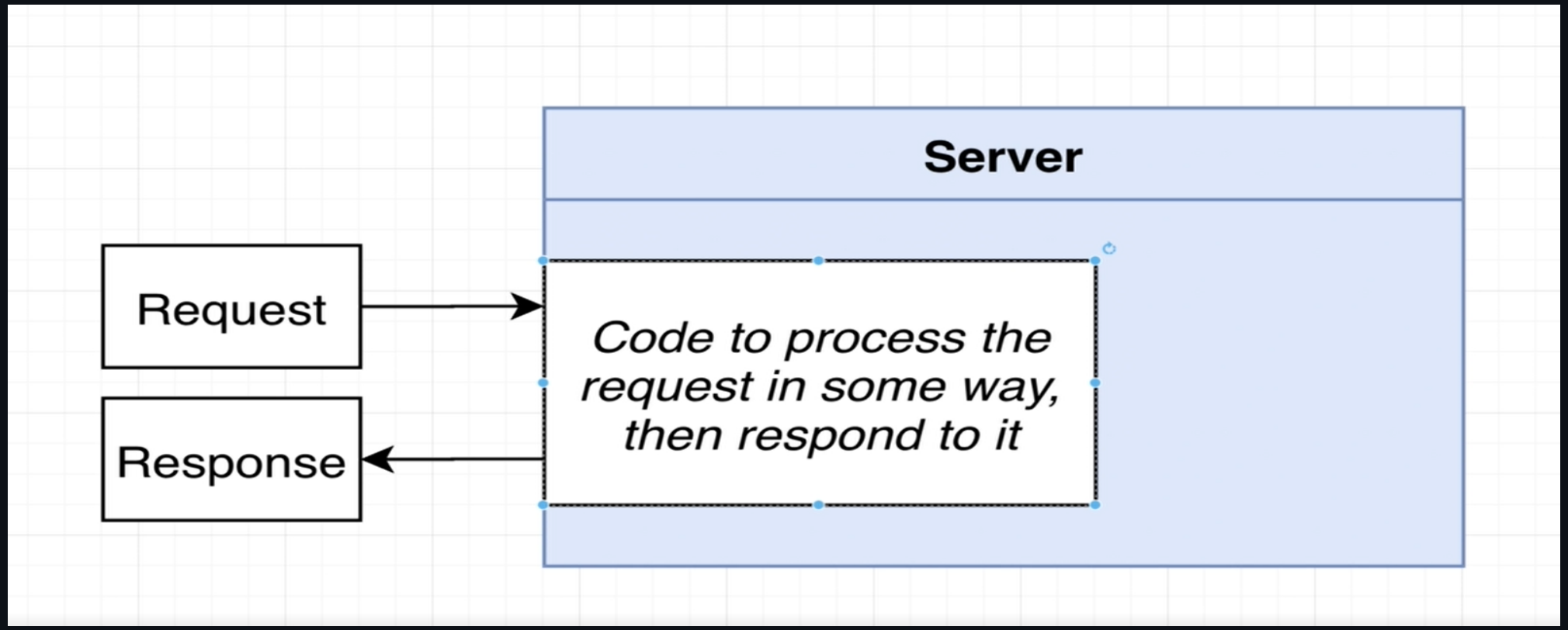
Configure TypeScript

- create file `tsconfig.json` in root
- write the following

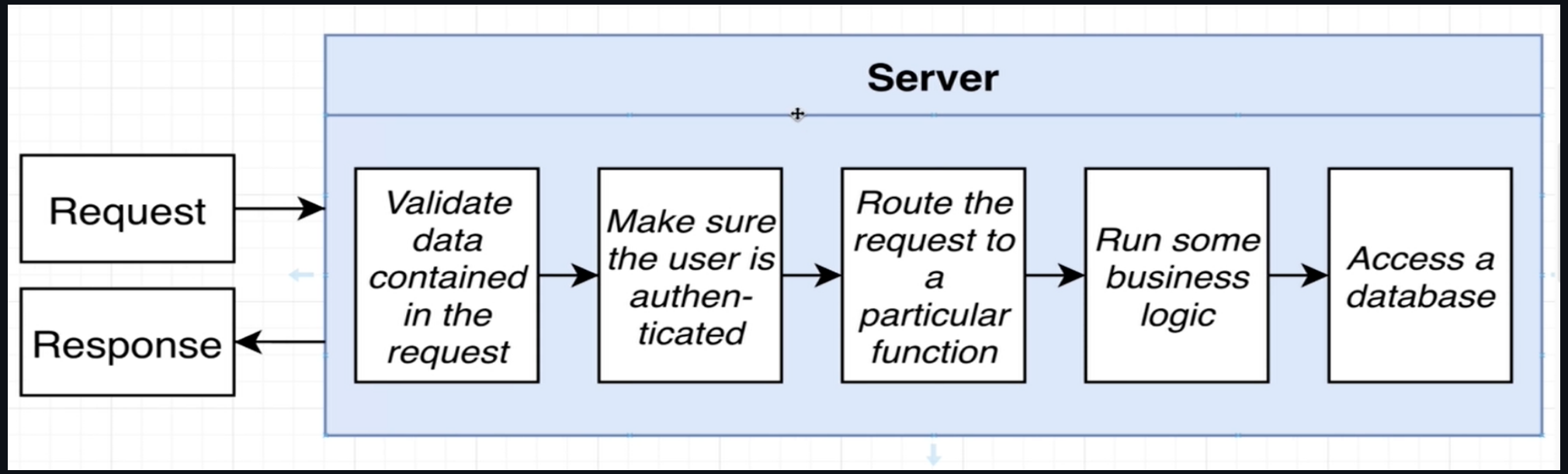
```
{
  "compilerOptions": {
    "module": "commonjs",
    "target": "es2017",
    "experimentalDecorators": true,
    "emitDecoratorMetadata": true
  }
}
```

Nest Module and Controller

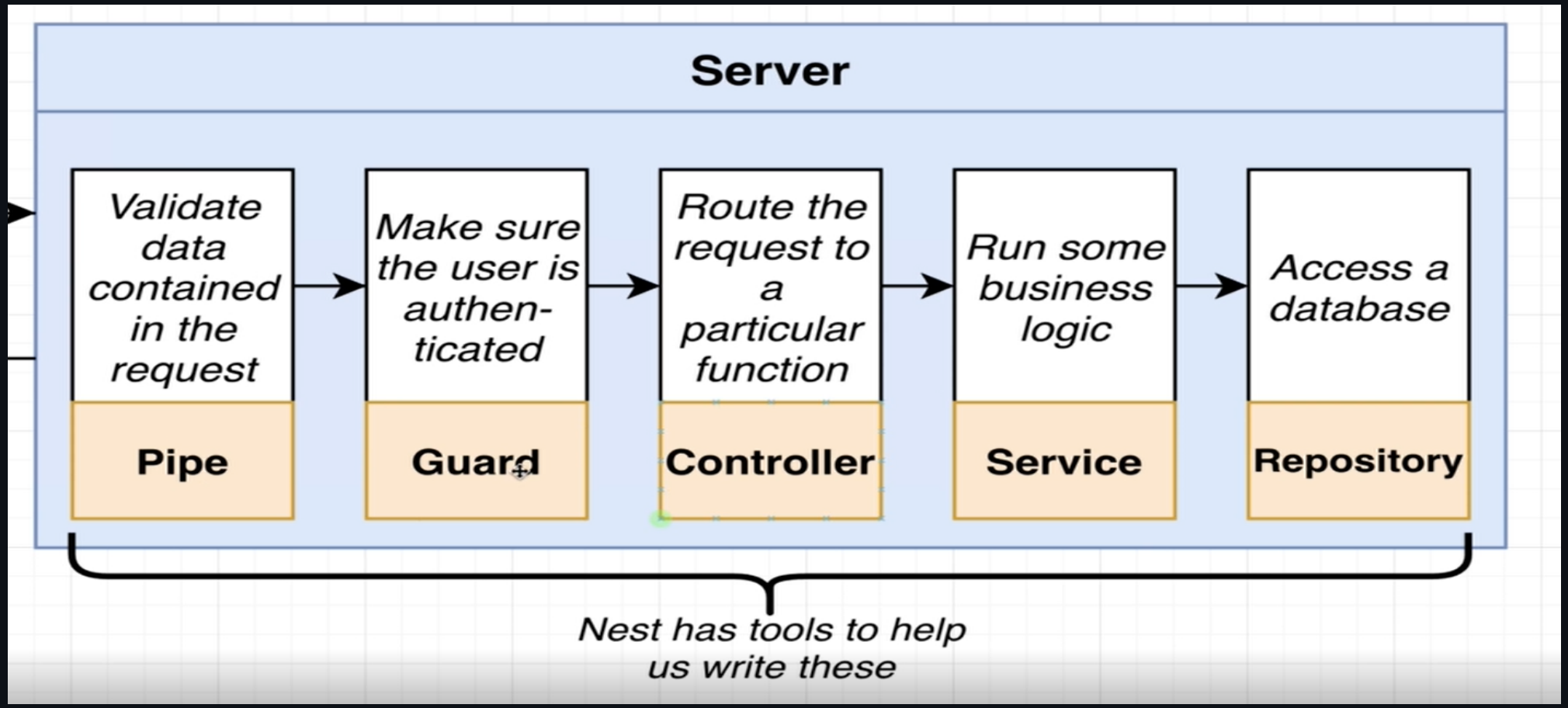
Basic Concept of Server



Detail Concept of Server

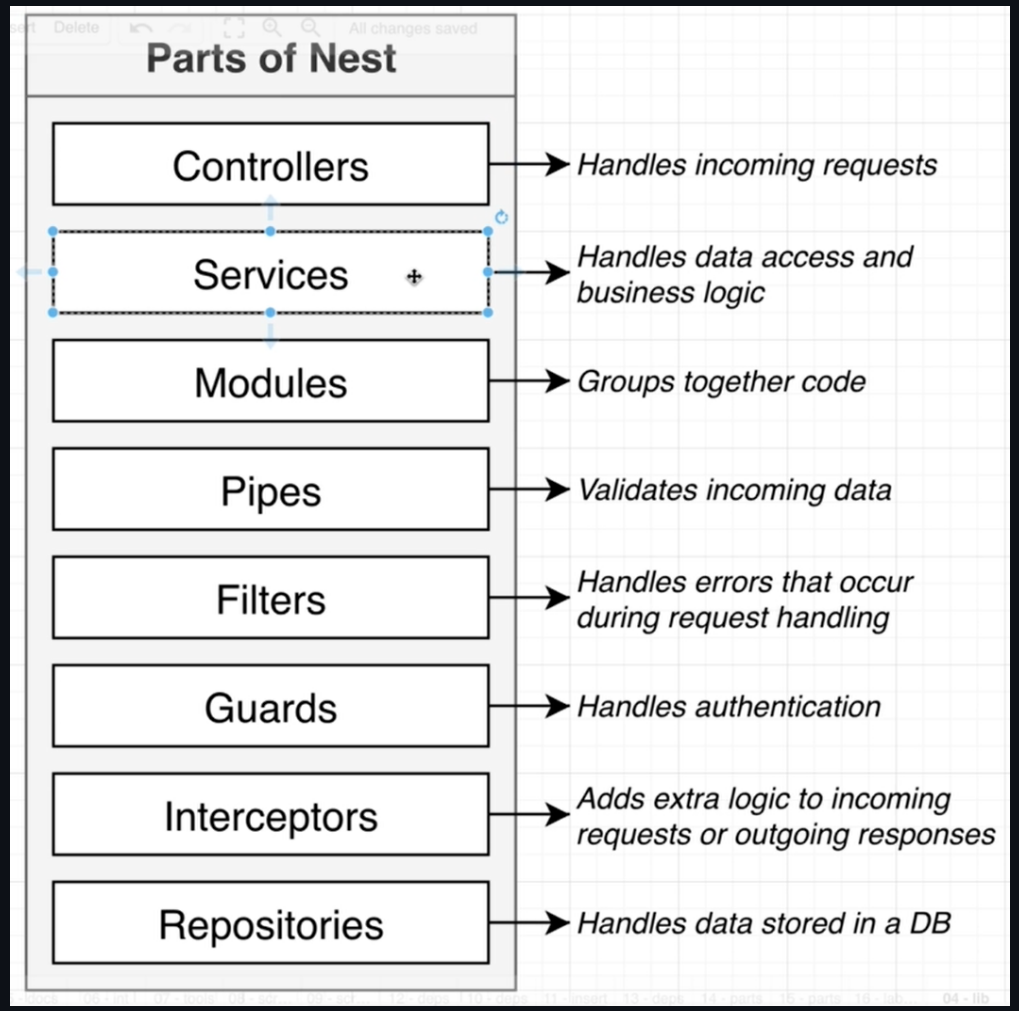


Nest has special tools for each steps



We will learn each tools in this series

Parts of Nest



Basic Nest App

- to exist as an app
- a simple nest app will contain
  - a controller
  - a module
- which is the minimum criteria for it's existance

Creating the basics of Nest

- in your scratch folder, make `main.ts` file
- main.ts is the 1st file to get executed in any Nest project
- Complete the following code in `main.ts`

```
import {Controller, Module} from '@nestjs/common`
```

- these tools provided by nest for us to create our own controllers and modules

Creating a controller

- below import, write

```
class AppController {}
```

- decorate the `AppController` with `@Controller()`

What did we do?

```
@Controller()
class AppController {}
```

- We made own own controller using a decorator which tells nest that AppController is a controller
- Controller is made to handle and route incoming request
- Inside controller we will creating functions that will be able to handle specific requests

Task!

- Delete this `main.ts` file
- Make a new `main.ts` and do creation of a controller

Method Route in Controller

- import `Get` decorator and use for `getRootRoute`
- Add a method with following content

```
import { Controller, Module, Get } from "@nestjs/common";

@Controller()
class AppController {
  @Get()
  getRootRoute() {
    return "Hello Root Route!";
  }
}
```

Now Module

- Module is going to `wrap-up` a controller
- Every app we create must have at least one module
- Create a module below the previous `controller`

Create Module

- create a class `AppModule`
- decorate it with `@Module()`
- Try it yourself!

Passing configuration object to Module

- There is error in Module decorator
- It needs configuration as

```
@Module({
  controllers: [AppController],
})
class AppModule {}
```

- controllers property will list all controllers in the application

What will happen?

Whenever our nest app starts

- It will look into this `AppModule`
- It will find all the `Controllers` listed in `Module`
- Automatically creates instances of all controller classes
- So `AppController` instance will be created
- Will check all the decorators, eg: `@Get()`, and define `route handlers`

Review

What we did :

- main.ts as entry point
- Nest needs Module and Controller so we made both in main.ts
- `Module` wraps `Controller`
- `Controller` wraps `routes` with `methods` like `@Get()`
- Module needs `configuration`

Bootstrap

- main entrypoint needs a function
- async function called bootstrap()

```
import {NestFactory} from '@nestjs/core

async function bootstrap(){
    const app = await NestFactory.create(AppModule);
    await app.listen(3000);
}

bootstrap();
```

Run Application

Terminal

- make sure you're inside the project in cmd
- `npx ts-node-dev src/main.ts`
- will run the app
- "Nest Application Successfully Started"
- other program using port 3000?
- now see `localhost:3000`

Congratulations

You've completed:

- Core understanding of Nest and its components
- Module and Controller concept and creation
- main.ts file structure and use

Homework

- create a Nest project from scratch where:
  - in main.ts there is a module
  - module will have `Hello EEC Student`
  - submit the code via github from your account in discord

Viva questions:

- Module and Controller