ANGULAR TRAINING

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What is Angular ?

- Web Framework that helps in building reliable applications
- Maintained by Google
- Opensource and JavaScript Framework
- It includes tools, libraries for building ,testing and maintaining .
- Cross Platform Support
- Custom and Reusable components

Why Angular ?

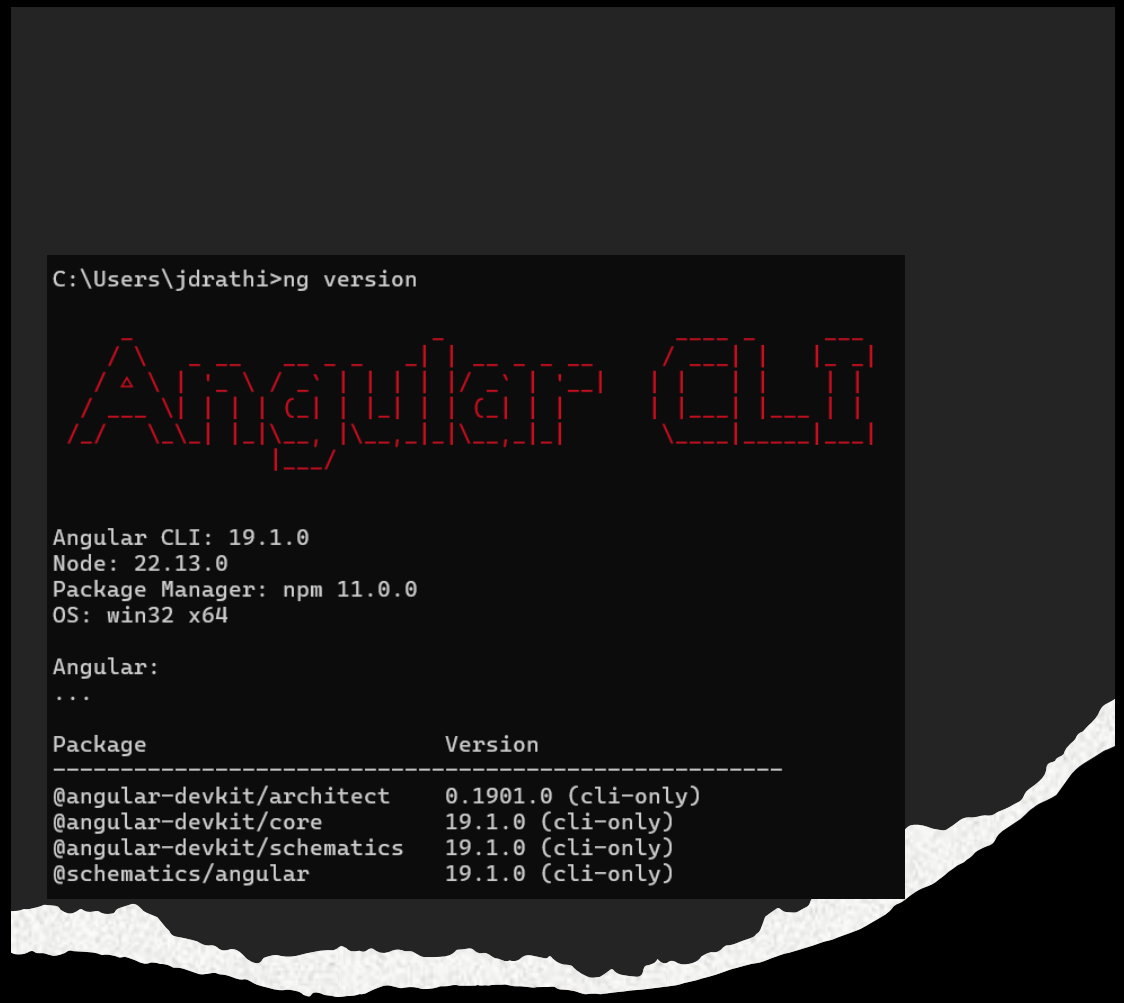
- Easier maintenance of code
- Lightweight architecture contributes faster loading times and user experience
- Large and Active community support
- Scalability -It can scale from single-developer projects to enterprise-level applications.
- Better error handling
- Supports multiple frameworks for f

System Setup

- Install Node.js(Angular 15 requires Node.js version **14.20.x**, **16.13.x**, or **18.10.x**.....)
- To check if node is properly:

Install Angular

- To install Angular CLI globally
- npm install –g @angular/cli@15
- To check proper installatiom
- ng version



Create a new Project

- ng new my-study-app
- You’ll be prompted to:
  - Add Angular routing? → **Yes/No**
  - Select stylesheet format (CSS/SCSS/etc.)

  It will automatically install dependencies.

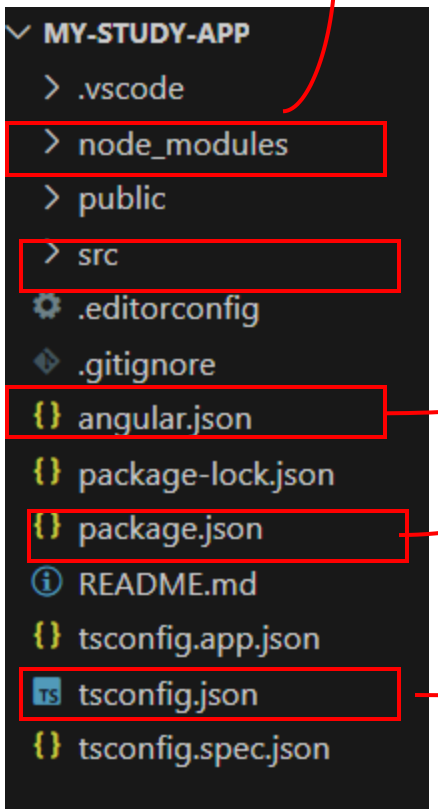
```
C:\Users\jdrathi>ng new my-study-app
✓ Which stylesheet format would you like to use? CSS             [ https://developer.mozilla.org/docs/Web/CSS
✓ Do you want to enable Server-Side Rendering (SSR) and Static Site Generation (SSG/Prerendering)? Yes
✓ Would you like to use the Server Routing and App Engine APIs (Developer Preview) for this server application? Yes
CREATE my-study-app/angular.json (2870 bytes)
CREATE my-study-app/package.json (1281 bytes)
CREATE my-study-app/README.md (1532 bytes)
CREATE my-study-app/tsconfig.json (942 bytes)
CREATE my-study-app/.editorconfig (331 bytes)
CREATE my-study-app/.gitignore (629 bytes)
CREATE my-study-app/tsconfig.app.json (508 bytes)
CREATE my-study-app/tsconfig.spec.json (449 bytes)
CREATE my-study-app/.vscode/extensions.json (134 bytes)
CREATE my-study-app/.vscode/launch.json (490 bytes)
CREATE my-study-app/.vscode/tasks.json (980 bytes)
CREATE my-study-app/src/main.ts (256 bytes)
CREATE my-study-app/src/index.html (309 bytes)
CREATE my-study-app/src/styles.css (81 bytes)
CREATE my-study-app/src/main.server.ts (271 bytes)
CREATE my-study-app/src/server.ts (1674 bytes)
CREATE my-study-app/src/app/app.component.html (20239 bytes)
CREATE my-study-app/src/app/app.component.spec.ts (963 bytes)
CREATE my-study-app/src/app/app.component.ts (300 bytes)
CREATE my-study-app/src/app/app.component.css (0 bytes)
CREATE my-study-app/src/app/app.config.ts (447 bytes)
CREATE my-study-app/src/app/app.routes.ts (80 bytes)
CREATE my-study-app/src/app/app.config.server.ts (519 bytes)
CREATE my-study-app/src/app/app.routes.server.ts (174 bytes)
CREATE my-study-app/public/favicon.ico (15086 bytes)
\ Installing packages (npm)...
```

Serve the Application

- cd my-study-app
- ng serve

Then open `http://localhost:4200` in your browser.

FOLDER STRUCTURE



Contains all the **installed dependencies** (libraries) like Angular, RxJS, etc.

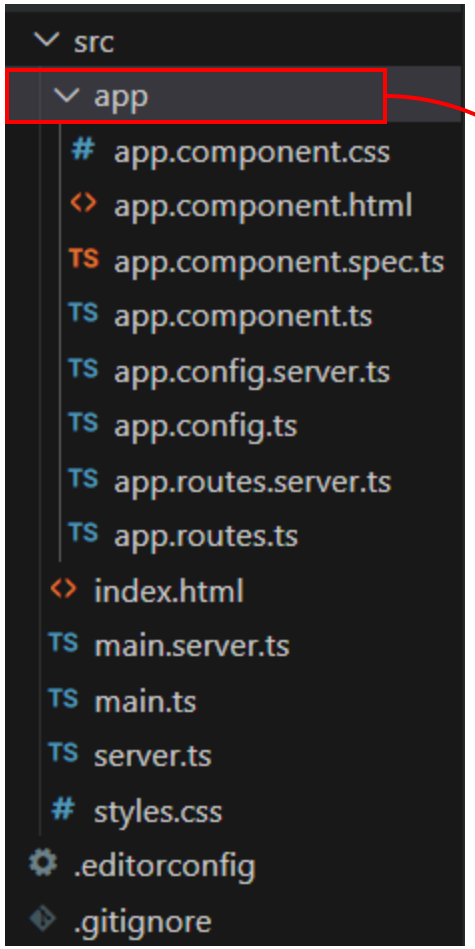
Heart of your application, whatever we see in the browser is inside this folder

Main config file for your Angular project.

- Tells Angular how to build and serve the app.
- Manages styles, scripts, and build settings.

- Lists all the **npm packages** your app uses.
- Defines the scripts to build and serve the app.

Configuration file for **TypeScript** — sets rules like how strict the code should be, and how modules are handled.



This folder contains your **Angular components, services, and modules**.

- app.component.ts: Main component with your logic (TypeScript)
- app.component.html: UI template
- app.component.css: Styles for the component
- app.module.ts: Registers components and services

assets/
Used for **static files** like images, icons, fonts, etc.

MVC ARCHITECTURE

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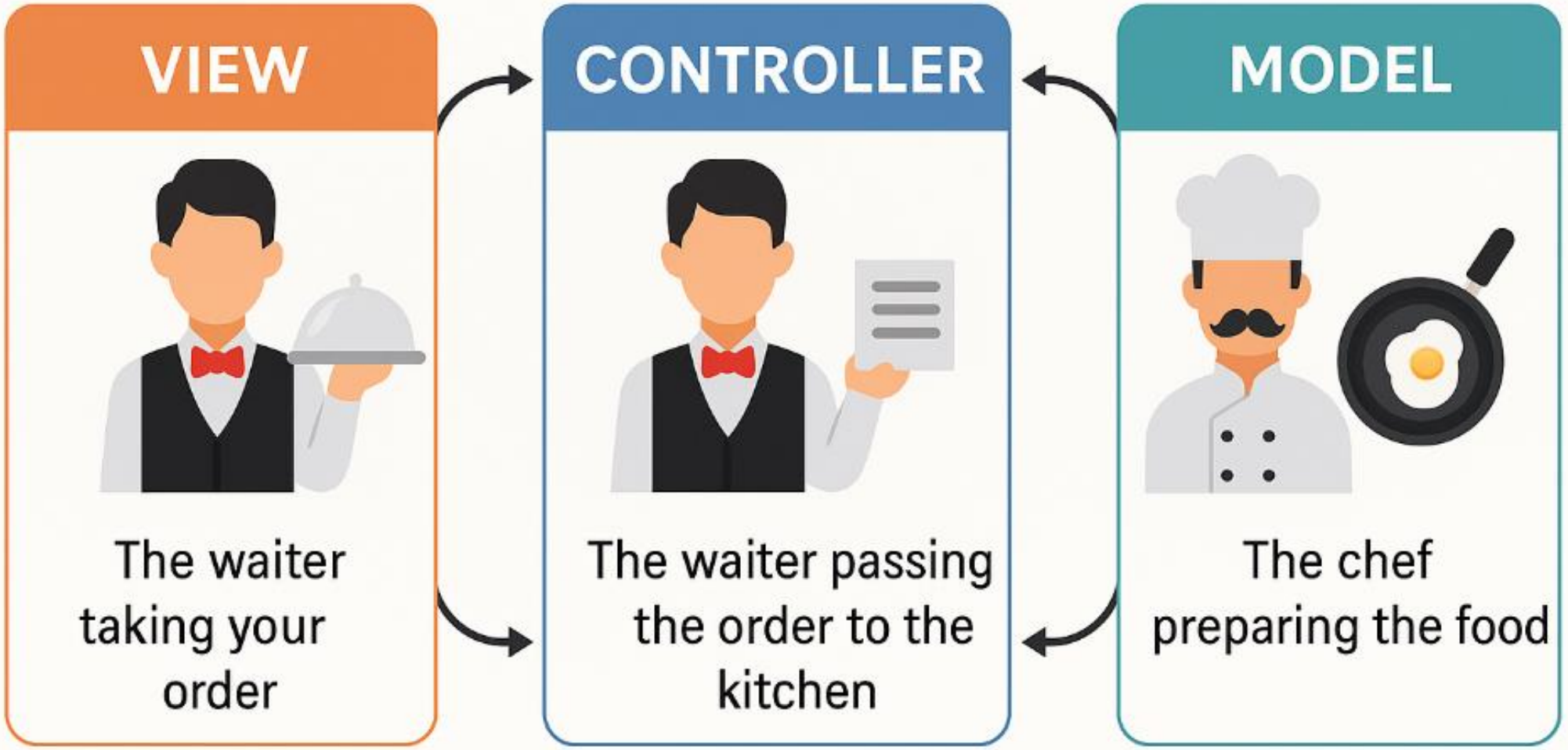

- MVC stands for:
  Model
  View
  Controller

- It’s a **design pattern** used to organize code so that it's easier to manage and scale.

Part	Role	Angular Equivalent
Model	Represents the **data** and business logic	Interfaces, services, APIs
View	What the **user sees** (UI)	HTML templates (.html)
Controller	Manages user input, updates the model/view	Component class (.ts files)

COMPONENTS

What is Component?

- Components are the main building blocks for Angular applications. Each component consists of:
- An HTML template that declares what renders on the page
- A TypeScript class that defines behavior
- A CSS selector that defines how the component is used in a template
- Optionally, CSS styles applied to the template
- Creating a component : ng generate component <component-name>
- By default this component creates :
  - A directory named after the component
  - A component file, `<component-name>.component.ts`
  - A template file, `<component-name>.component.html`
  - A CSS file, `<component-name>.component.css`
  - A testing specification file, `<component-name>.component.spec.ts`

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