



HOW
Hands On Workshop
By : Vijay Shivakumar





What do we need ?

Hardware and software

IDE : webstorm / atom / visual studio code

Browsers : chrome latest

Platform : nodejs latest

Database : mongodb / firebase

Version Control : git

Network : internet access to download
from git and npmjs.org



Objective

About this course

Understand and explore ES6 / ES7

Write Programs using Typescript 2.7

Understand members of Angular bundle

Develop programs using Angular platform

Workflow for fast Angular application creation with Angular CLI

Unit Testing Angular code



About | me



Vijay Shivakumar
Designer | Developer | Trainer



CERTIFIED EXPERT
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Training & Consultation of
Contemporary Web Technologies and Adobe products from past 14 years





About | you

Designer

Developer

Architect

Business Analyst

Technology Enthusiast



What's Angular

What is it ?

Designer

Developer

Architect

Business Analyst

Technology Enthusiast



Angular | Features



Leverages on new HTML5 Features

Includes cutting edge JavaScript features ES6, ES7

TypeScript for strong data typing

Better error handling

Speed and performance

Modular approach

Hybrid (Mobile, Tablet and Web support)

Feature rich to create SPAs

(DOM handling, 2 way Binding, Routing, Animation, Validation, Ajax, RESTful API)





Setup / Tooling

What is required...

NodeJS

TypeScript

TraceurJS

BabelJS

SystemJS

Webpack

Angular/cli

Express

MongoDB Mlab ID / Firebase ID

Karma

Git

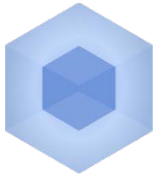
NodeMon

NVM



Build Tools

Using Angular-CLI



ES5 None

ES6 Traceur
BableJS
SystemJS
Webpack

TypeScript Traceur
BableJS
SystemJS
Webpack



Architecture

What make Angular ?

One way data flow : Data flow only from parent to child unlike angular 1

Dependency Injection : Resources are passed to a component as and when required

Components : Creates a custom tag where the component replaces its content

Directives : Adds new functionality to HTML elements that they never had

Templates : Are separate from component

Zone.js : Manages change detection

Rendering Targets : Render an app for many devices with

Browser-platform

Browser-platform-dynamic



Module

What is it doing..?

Is different from ES6 module

Every application must have at least 1 module (root module)

Root module is decorated with 'NgModule' from @angular/core

import : [FirstModule, SecondModule],

declarations : [Components, Pipes, Services, Directives]

providers: [servicesToInject1, servicesToInject2]

bootstrap : [mainComponent]



Component

What is it ?

A basic Component has two parts.

1. A Component decorator
2. A component definition class

Component Decorator :

We can think of decorators as metadata added to our code.
When we use `@Component` on a class,
we are “decorating” that class as a Component.

Component Class :

Will have a constructor, properties , methods and life cycle events by default



Component

What is it doing..?

A component is a combination of a view (the template) and some logic
Is decorated with 'Component' from @angular/core
By convention every application must have a main component which is bootstrapped via module.

selector: 'aDomElement'(usually a custom tag name)

template:

templateUrl:

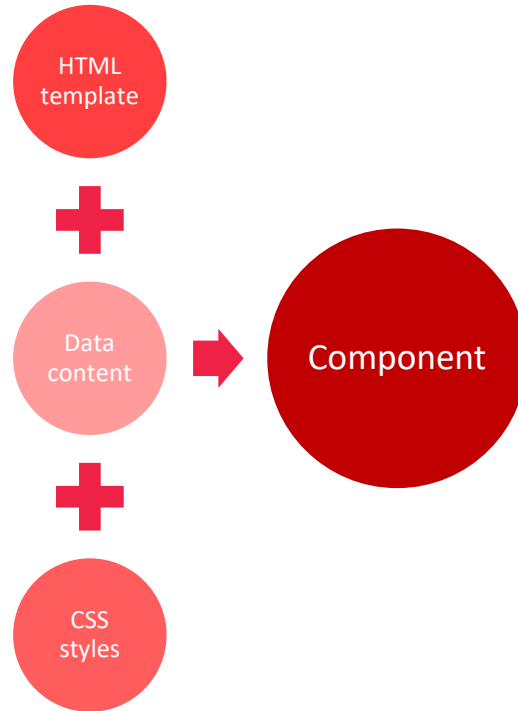
styles:[]

stylesUrl:[]



Component

What is it ?





Templates | View

template : Inline

templateUrl : external

Display Data

Format Data

User Interaction

Avoid business logic



Styling a component

```
styles:[`  
  selector { property : value; property : value }  
  selector { property : value; property : value }  
`]
```

OR

```
stylesUrl:[ "location/style.css", "anotherlocation/style.css" ]
```

Styling a page

That you define in the html page in the head or body section



Binding Interpolation

Property Binding

```
<h1>{{ 2+2 }}</h1>
```

```
<h1>{{ user.name }}</h1>
```

```
<h1 [textContent]="user.name"></h1>
```

```
<h1 bind-innerHTML='user.name'></h1>
```

```
<h1>{{ user.message() }}</h1>
```

Keep it simple and fast (they should not take more time to compute)

Avoid multiple statements

You can not use assignment operators e.g. = , +=, ++, -- in property binding

You can not create an object e.g. new User().



Binding Interpolation

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<h1>{{ user.message() }}</h1>
```

Tip: Use ? to handle undefined
Use the safe navigation operator
e.g. `<h1>{{ no-user?.prop }}</h1>`

Keep it simple and fast (they should not take more time to compute)

Avoid multiple statements

You can not use assignment operators e.g. =, +=, ++, -- in property binding

You can not create an object e.g. `new User()`.



Event Binding

Statement Binding

```
<button (click)="callfun()"> Click Me </button>
```

Keep it simple and fast (they should not take more time to compute)

The callback functions can take a single parameter which is referred as `$event`

(If you wish to send multiple params you can wrap them in an object and send)

Avoid business logic on templates

You can not create an object e.g. `new User()`.



Events

Element events supported

mouseenter

mousedown

mouseup

click

dblclick

drag

dragover

drop

focus

blur

submit

scroll

cut

copy

paste

keydown

keypress

keyup



Style Binding

class / ngClass

```
[class.className] = "stronghero"
```

```
[ngClass] = { expression that returns a string, object or an array }
```

In the example below both stronghero and boxclass can be applied if it matches the conditions

Eg;

```
[ngClass] = "{ stronghero: heroPower > 5, boxclass: rating > 0.5 }
```

Tip: conditionally applied classes will append to existing classes



Style Binding | style/

```
[style.color] = "#333"
```

```
[ngStyle] = { expression that returns a style value }
```

In the example below the ternary operator will return a style property and value combination

Eg;

```
[ngStyle] = "{ 'color': heroPower > 5 ? 'green' : 'red' }"
```

Tip: conditionally applied classes
will append to existing classes



Structural Directive

Repeat / If / hidden

Adds or removes the DOM contents or they change the structure of DOM hence the name

```
<ul>
```

```
  <li *ngFor = "let user of users"> </li>
```

```
</ul>
```

In this example it shall loop over and for users
and create a temp variable user in the scope of the loop

For every loop the li and its content is repeated

```
<li *ngIf="true/false">{{ data }}</li> OR <li [hidden]="true/false">{{ data }}</li>
```



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<li *ngIf="true/false">{{ data }}</li> OR <li [hidden]="true/false">{{ data }}</li>
```

Tip: Usage of hidden is efficient



Structural Directive

Switch

```
<div [ngSwitch]="hero.power">  
  <h1 *ngSwitchCase="8">Strong</h1>  
  <h1 *ngSwitchCase="7">Weak</h1>  
  <h1 *ngSwitchDefault>Recovering</h1>  
</div>
```



Pipes

Format your output

AsyncPipe	will deal with observable values and display latest result
DatePipe	used to format the date as needed
LowerCasePipe	converts to lowercase
UpperCasePipe	converts to uppercase
CurrencyPipe	applies a currency symbol and manage integer and decimals
DecimalPipe	manages decimal values



Communication

Input & Outputs

@Input decorator from @angular/core
allows data inlet in to the component

@Output decorator from @angular/core
allows data to be sent from the component

Tip : only events are allowed to
be used as an output

The same can be done with these properties of a component

input :

output :

You can use template variables to
communicate from a child
component to parent component



Services

Dealing with Data



Simple classes that fetch some data

@Injectable decorator required if you inject other built-in service

Attach the service in the module as a provider so that every component can have access to it..

Inject it in to any component you may want to use the service





Routing

Navigating / Multipage

Angular supports HTML5 and Hash based URL Routing

Define Base Path

Import Router

Configure Routes

Place Templates

Activate Routes



Thank you

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