Angular

-It was originally developed in 2009 by Misko Hevery and Adam Abrons. It is now maintained by Google.

- framework(collection of Js,html and css files) used to design client side application
- the angular application will be executed by browser
- used to develop ***SPA(single page application)*** type application
    - the angular applicaiton will load only one page at the beginning
    - then it will kep on refreshes only part(s) of pages
- **benifit of Angular**
    - best performance like native application
    - because the entire UI gets loaded at the beginning , application works in case of no internet connection(provided the application is already loaded in browser)
- **disadvantages**
    - the application takes more time to start
- **alternative to angular--> (by google)**
    - vue.js by alibaba
    - react-facebook

(fast reloading)

- typescript will be used for developing applications using angular
    - the typescript code will get transpiled to javascript
    - the transpiled JS code will get passed to the browser

configuration

- documentation

> angular.io

- to install angular framework use npm install command

```
npm install -g @angular/cli
```

- #angular/cli install a utility name **ng** (angular)

ng

- used to create/build/test angular application.

- **ng new**
  - used to create a new angular application
  - e.g

```
> ng new my-app
```

- **ng serve**
  - The ng serve command launches the server, watches your files, and rebuilds the app as you make changes to those files.
  - used to run the application

```
# visit localhost:4200
 > sudo ng serve
  # visit localhost:4200
 > sudo ng serve --port 9090
 //open in browser at # localhost:4200
 ng serve --open
  # visit localhost:4200
 # --host = will accept incoming connection from networking
 ng serve --host '0.0.0.0'

 // if folder access is restricted
 //it showns you are not the owner
  use

  sudo chown -R username /path/to/directory-ofapp-folder
```

- **ng generate**
- used to create different types of classes
  - **components**
    - used to create a component
    - create files with .html,.css,.ts and .spec.ts extensions
    - declares the components in the AppModule
- e.g

```
    # create component
 ng generate component first
#or use


ng g c third
```

angular project hierarchy (in app1 folder)

- **e2e folder**
    - end to end testing
    - used to test the application's functionality
- **node modules**
    - directory which contains all the dependency modules
    - e.g
    - @angular/animations : used to add animation support in the application
    - @angular/cli : used for managing the application
    - @angular/core: used to provide fundamental components to the application
    - @angular/forms : used to add the forms support (used to get input from user)
    - @angular/router : used to add routing facility
    - @angular/commong/http: used to provide HttpClient which can be used to connect the angular application with backend
- **src folder**
    - **app**
        - contains the application source code
    - **assets**
        - contains the application assets
        - like images,audio or videos
    - **environments**
        - used to separate the configuration logically
        - e.g
            - environment.ts : represent the dev environment
            - environment.prod.ts : respresents the production(cloud server) environment
    - **favicon.ico**
        - usd to display the shortcut icon
        - the ne which will be displayed on the tab
    - **index.html**
        - the only hmtl file which has header and body
        - the applicaiton starts by loading this file
    - **main.ts**
        - angular's entry point
        - when applications starts,the application modules get bootstrapped using main.ts

- **polyfill.ts**
    - used to fill the gap between older JS version with latest ES7/ES8 changes
- **styles.css**
    - used to add global styles
    - the styles which can be shared with multiple component
- **test.ts**
    - used to test end to end application
- **in app1 folder **
    - **editorconfigs**
        - used to configure the editors
- **gitignore**
    - used to ignore the files/folders while commiting the changes to git repository
- **angular.json**
    - used to configure the application
- **karma.config.js**
    - configuration used by jasmin
- **package.json**
    - configuration on your application
    - e.g
        - applicaiton dependencies
        - application basic information
- > **README.md**
    - used to configure the readme for your application
- **tsconfig.json**
- **tsconfig.json**
    - used to configure the typescript
- **tsconfig.spec.json**
    - used for configuring the test cases
- **tslint.json** +

NgModule

- every angular application is a modular application
- every angular application requiress at least one NgModule
- NgModule represents a module which brings all the application parts together
- Ngmodule is different than node module
- to create a angular module , call @NgModule Decorator

```
@NgModule({
  declarations: [
    AppComponent
  ],
  imports: [
    BrowserModule
  ],
  providers: [],
  bootstrap: [AppComponent]
})
export class AppModule {}
```

- @NgModule is called with metadata in {} which contains

1. **declarations**
    - list of components , pipe,etc in the application
2. **imports**

- list of modules require to run the current module

3. **providers**

- list of service classes used in application

4. **bootstrap**

- the components need to be loaded by default when the module gets loaded

5. **exports**

- list of components,pipes,etc. exported current module

Component

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1. In angular,component represents a screen (page) or part of page
2. angular application development is a component or module based
3. contains files

- .html
- .ts
- .css

- spec.ts

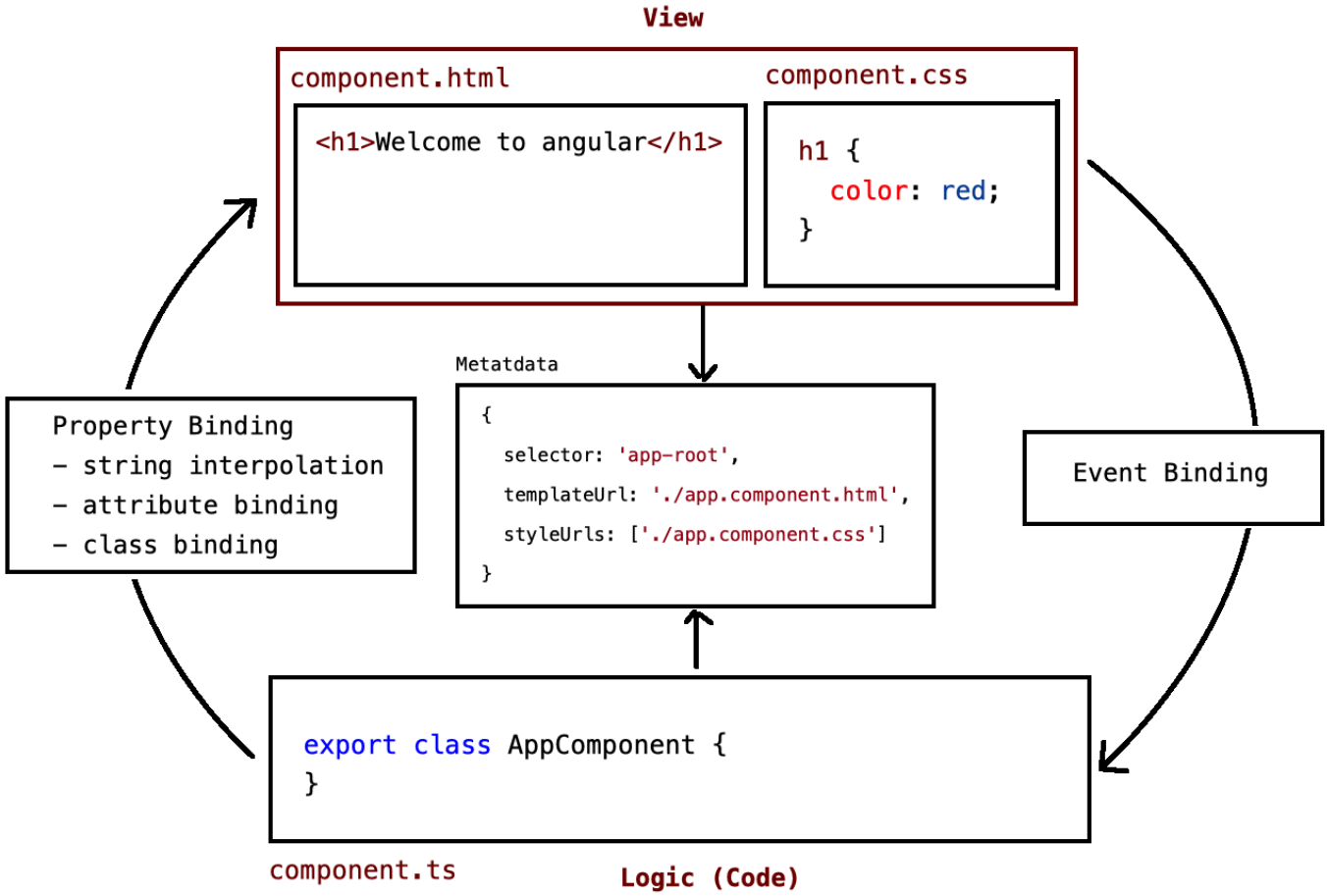
3. to create a component

- 1. step- create a class and call a decorator @component() -decorator accepts a metadata

    1. **selector**
    - used to load the component in a parent component
    - use it as a tag
    - e.g.
    - <app-root></app-root>
    2. **templateUrl**
    - used to attach the view (html) which is the screen design
    - use it for designing the component uI
    3. styleUrls:
    - used to attach the style on the html loaded in the component
- 2. step- Register the component in AppModule's declarations array

```
  @Component({
  selector: 'app-root',
  templateUrl: './app.component.html',
  styleUrls: ['./app.component.css']
})
export class AppComponent {
  title = 'my-app';
}
```

Component



binding

- attaching one part to another
- types
- 1. **Property Binding**
  - 1. **string interpolation**
  - way to get value from a class member
  - wrap the class member with {{}}
  - e.g

```
<!-- string interpolation getting value of firstName-->
  <div> Firstname : {{firstName}} </div>
```

```
  export class FirstComponent{
      //class member
      firstName = 'steve'
```

```
}
```

- 2. **Attribute Binding**
  - used to bind value of a variable with an attribute
  - wrap the attribute in [] for binding the value with variable
  - e.g

```
  <div>Color: {{color}}</div>
<div [style.color]="color">Color: {{color}}</div>

<div
 [style.width]="size"
 [style.background-color]="color" > </div>
```

```
 export class SecondComponent implements OnInit {
color = 'green'
size = 100}
```

- 3. **Class binding**
- 4. **Event bindiing**

directive

- feature which directs the code to process the data
- types
- 1. attribute directive
  2. positional directive

  - syntax for pd *=""

    - 1. **Ng For**
    - used to iterate over an array inside the html

```
<div class="employee" *ngFor="let employee of employees">
<div> Name : {{employee['name']}}</div>
  <div> id : {{employee['id']}}</div>
  <div> job : {{employee['job']}}</div>
  <div> department : {{employee['department']}}</div>
  <div> salary : {{employee['salary']}}</div>
  <hr>
  </div>
```

- 2. **Ng If**
- 3. **Ng Switch**