Mobile Application Development

LECTURE 9

State Management and Services in Angular

- What is **State**? State is basically your data in the application.

- Data that comes from the server, UI state like toggles (on / off), alerts and errors messages,

  User input, such as form submissions.

- Managing state is hard when your application becomes complex. You need same data in

  multiple components. Now how are you going to make sure that its the same data?

State Management and Services in Angular

- How are you going to update data in once place and make sure its updated everywhere?

- In our previous class, we displayed the students list in **studentslist** page and then a single student information in **student** page/component. We used the same data but for that, we had to repeat same data in two different components. Not ideal. Becomes very hard to manage.

- How do we handle this? We handle it in Angular via **Services**.

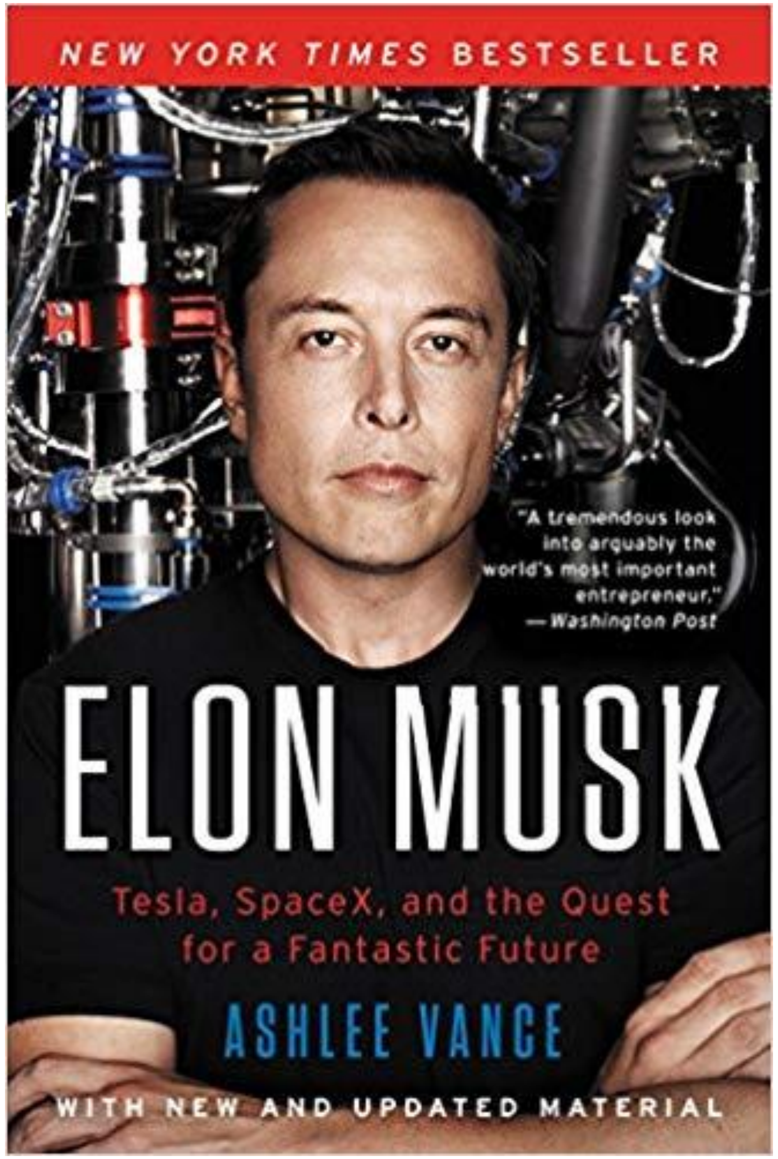
State Management Options

- Angular provides **(1) Services** by default which help us with state management across our application.
- Other frameworks use different philospy, a global **(2) Store,** to manage their state.
- There are open source libraries for these e.g **NgRx** (built for angular), Redux, MobX, Immer, VueX, Overmindjs etc
- Some large angular applications use NgRx but it's not really necessary as Services are enough.

Elon Musk. He has a Computer Science (Bachelors) degree. He is the co-creator of PayPal.

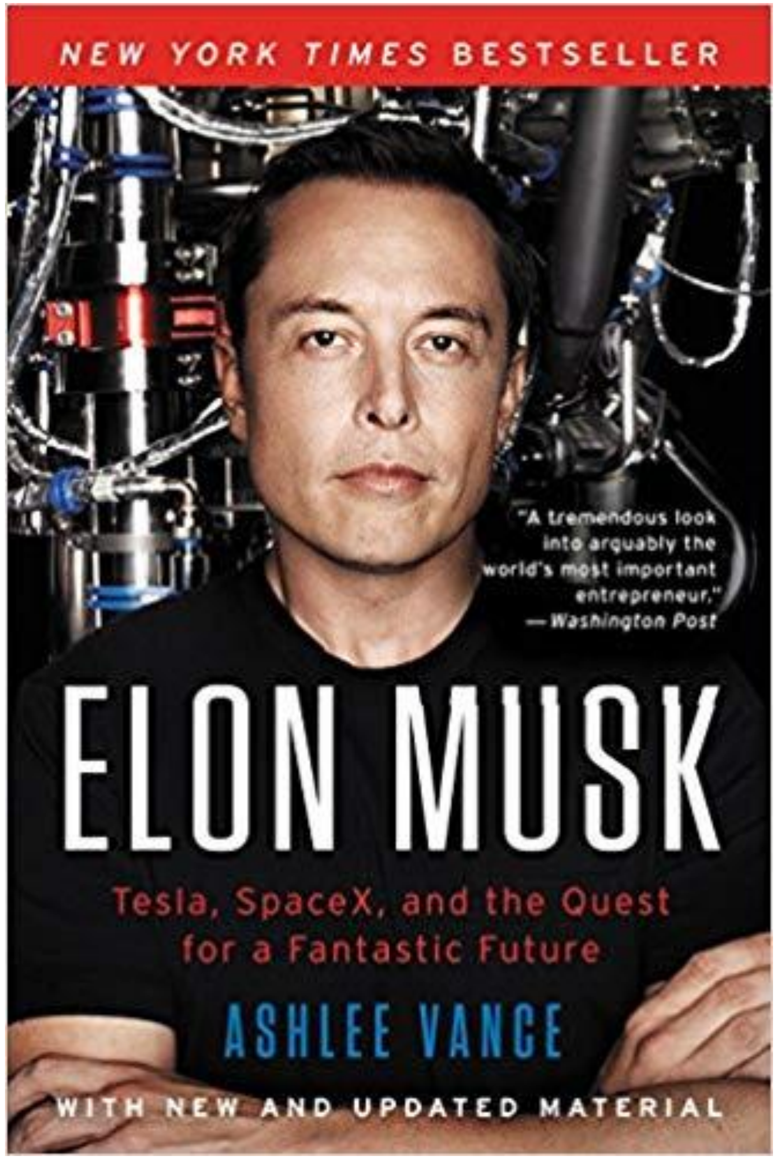
He is the first person with 3 companies worth $1Billion+ each.

Tesla Motors (Electric Cars)
SpaceX (Competitor of NASA) SolarCity (Renewable Energy Sources)


NEW YORK TIMES BESTSELLER
"A tremendous look into arguably the world's most important entrepreneur." —Washington Post
ELON MUSK
Tesla, SpaceX, and the Quest for a Fantastic Future
ASHLEE VANCE
WITH NEW AND UPDATED MATERIAL

3 Entire different fields. And he has only a Computer Science Degree.

Takeaway here is, your degree shouldnot define you. If you have a Computer Science / Software Engineering degree, it doesnot means you can only do “this” but not “that”. False mentality. The only person who decides that is YOU.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Services

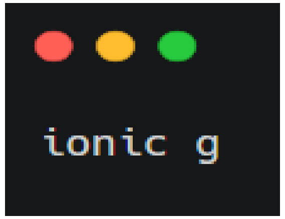
- Angular provides **Services** by default which help us with state management across our application.
- Angular services are singleton objects which get instantiated only once during the lifetime of an application.
- They contain methods that maintain data throughout the life of an application, i.e. data does not get refreshed and is available all the time.

Services

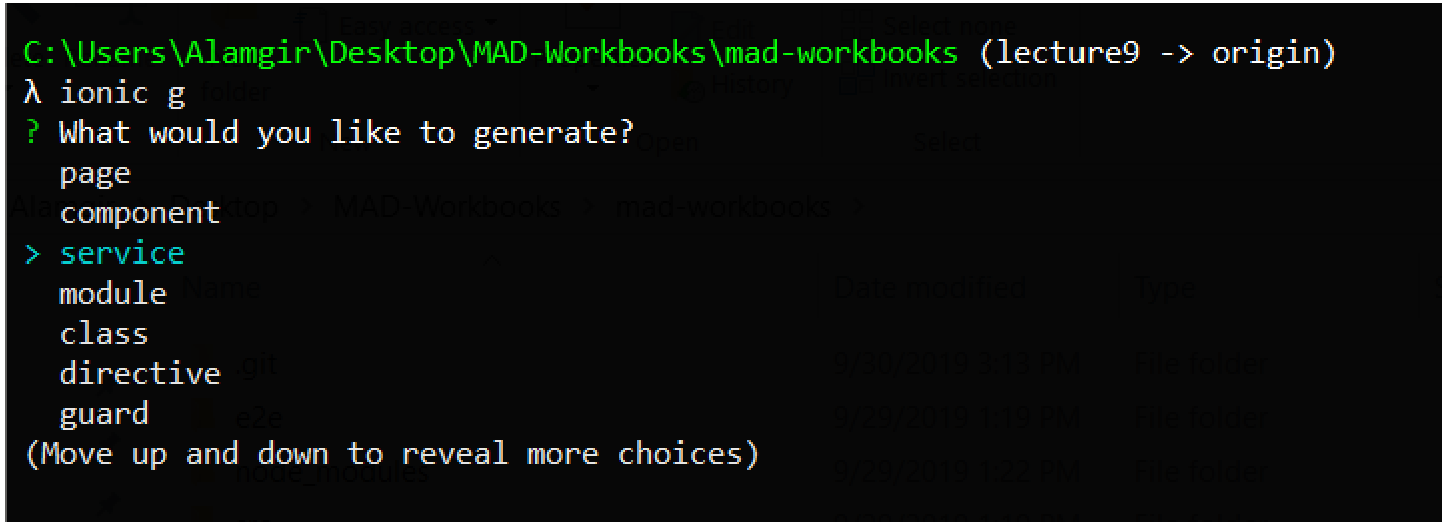
- The main objective of a service is to organize and share business logic, models, or data and functions with different components of an Angular application.
- We might come across a situation where we need some code to be used everywhere on the page. Services help us achieve that. With services, we can access methods and properties across other components in the entire project.

Services

- Lets create a service



```
ionic g
```

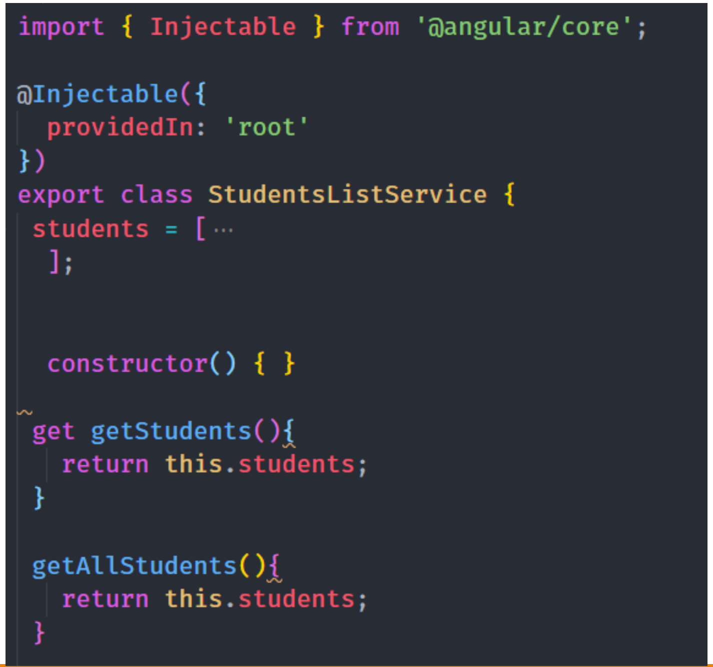


```
C:\Users\Alamgir\Desktop\MAD-Workbooks\mad-workbooks (lecture9 -> origin)
λ ionic g
? What would you like to generate?
  page
  component
> service
  module
  class
  directive
  guard
(Move up and down to reveal more choices)
```

Services

- A new Service file has been created. Students-list.service.ts

- Now lets move that studentListing from component to service file.

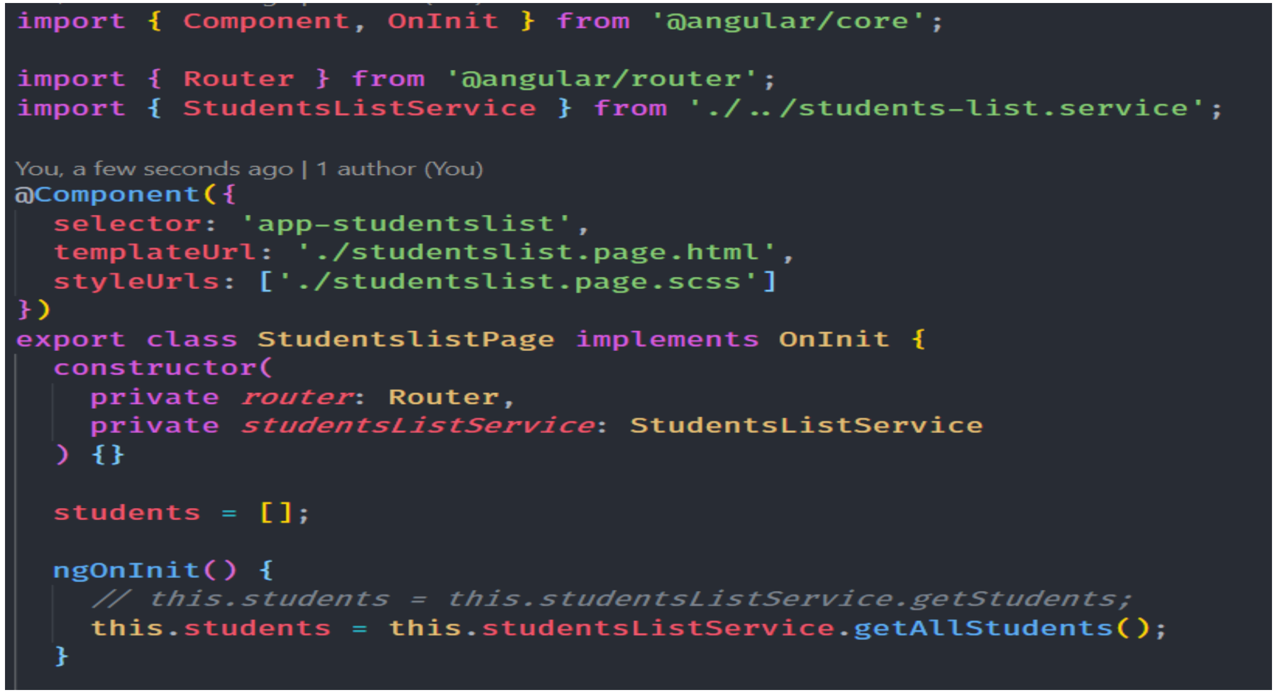


```
import { Injectable } from '@angular/core';

@Injectable({
  providedIn: 'root'
})
export class StudentsListService {
 students = [ ···
  ];


  constructor() { }

 get getStudents(){
   return this.students;
 }

 getAllStudents(){
   return this.students;
 }
```

Services

- Now lets use this service in component. First, we import it and inject it in constructor

(Dependency Injection).



```
import { Component, OnInit } from '@angular/core';

import { Router } from '@angular/router';
import { StudentsListService } from './../students-list.service';

You, a few seconds ago | 1 author (You)
@Component({
  selector: 'app-studentslist',
  templateUrl: './studentslist.page.html',
  styleUrls: ['./studentslist.page.scss']
})
export class StudentslistPage implements OnInit {
  constructor(
    private router: Router,
    private studentsListService: StudentsListService
  ) {}

  students = [];

  ngOnInit() {
    // this.students = this.studentsListService.getStudents;
    this.students = this.studentsListService.getAllStudents();
  }
```