# AngularJS

# Introduction

- Angular JS is an open source JavaScript framework that is used to build web applications. It can be freely used, changed and shared by anyone.
- Angular Js is developed by Google.
- It is an excellent framework for building single phase applications and line of business applications.

- **Following are the advantages of AngularJS over other JavaScript frameworks:**
- **Dependency Injection:** Dependency Injection specifies a design pattern in which components are given their dependencies instead of hard coding them within the component.
- **Two way data binding:** AngularJS creates a two way data-binding between the select element and the orderProp model. orderProp is then used as the input for the orderBy filter.
- **Model View Controller:** In Angular JS, it is very easy to develop application in a clean MVC way. You just have to split your application code into MVC components i.e. Model, View and the Controller.

# Introduction

- Angular JS is an open-source JavaScript framework by Google to build web applications. It can be freely used, changed and shared by anyone.
- AngularJS applications are a mix of HTML and JavaScript. The first thing you need is an HTML page.

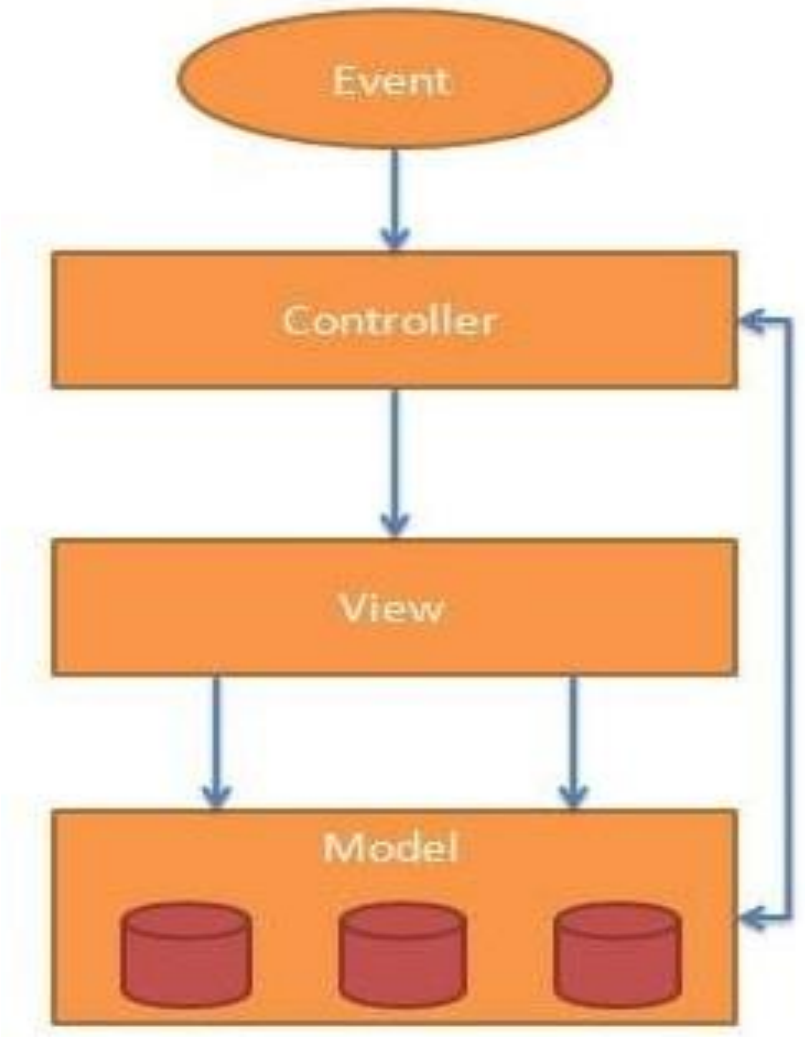
```
<!DOCTYPE html>
<html>
<head>
.
.
</head>
<body>
.
.
</body>
</html>
```

- Second, you need to include the AngularJS JavaScript file in the HTML page so we can use AngularJS:
- `<script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.2.5/angular.min.js"></script>`

# AngularJS MVC Architecture

- MVC stands for Model View Controller. It is a software design pattern for developing web applications. It isolates the application logic from the user interface layer and supports separation of concerns.
- The MVC pattern is made up of the following three parts:

1. **Model:** It is responsible for managing application data. It responds to the requests from view and to the instructions from controller to update itself.
2. **View:** It is responsible for displaying all data or only a portion of data to the users. They are script-based template systems such as JSP, ASP, PHP and very easy to integrate with AJAX technology.
3. **Controller:** It is responsible to control the relation between models and views. It responds to user input and performs interactions on the data model objects. The controller receives input, validates it, and then performs business operations that modify the state of the data model.



# AngularJS First Example

- Following is a simple "Hello Word" example made with AngularJS. It specifies the Model, View, Controller part of an AngularJS app.
- **View Part**

```
<div ng-controller="HelloController" >
```

//The ng-controller directive **adds a controller to your application**. In the controller you can write code, and make functions and variables, which will be parts of an object, available inside the current HTML element.

```
<h2>Hello {{helloTo.title}} !</h2>
</div>
```

- **Controller Part**

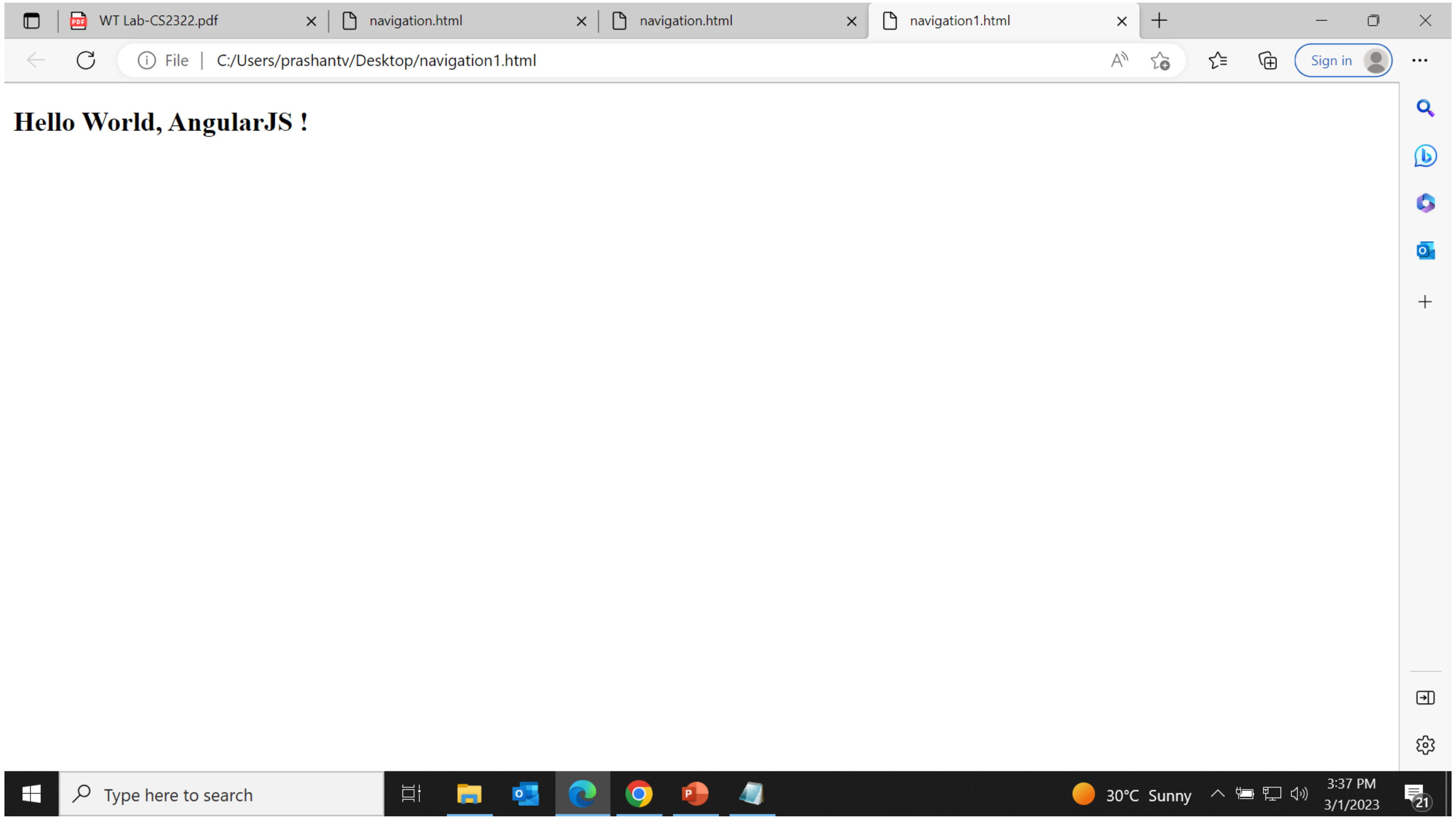
```
<script>
angular.module("myapp", [])
   .controller("HelloController", function($scope) {
      $scope.helloTo = {};
      $scope.helloTo.title = "World, AngularJS";
   });
</script>
```

Example 1.

```html
<!DOCTYPE html>
<html lang="en">
<head>
   <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.2.5/angular.min.js"></script>
</head>
<body ng-app="myapp">
<div ng-controller="HelloController" >
<h2>Hello {{helloTo.title}} !</h2>
</div>

<script>
angular.module("myapp", [])
   .controller("HelloController", function($scope) {
      $scope.helloTo = {};
      $scope.helloTo.title = "World, AngularJS";
   } );
</script>
</body>
</html>
```

# Output:



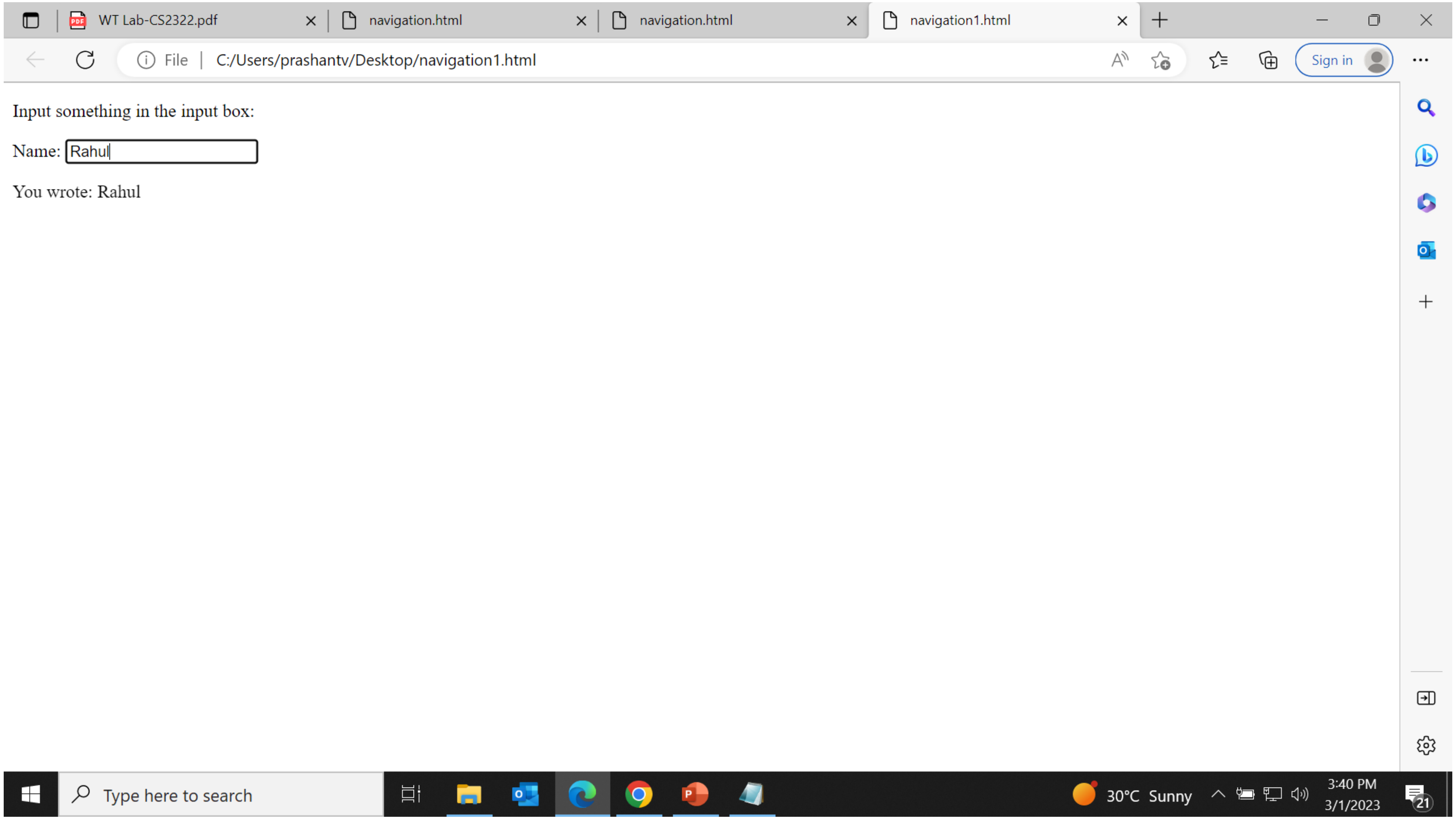
WT Lab-CS2322.pdf
navigation.html
navigation.html
navigation1.html
File
C:/Users/prashantv/Desktop/navigation1.html
Sign in
Hello World, AngularJS !
Type here to search
30°C Sunny
3:37 PM
3/1/2023

# Data Binding

- Data binding is an approach where a value is taken from the data model and inserted into an HTML element.

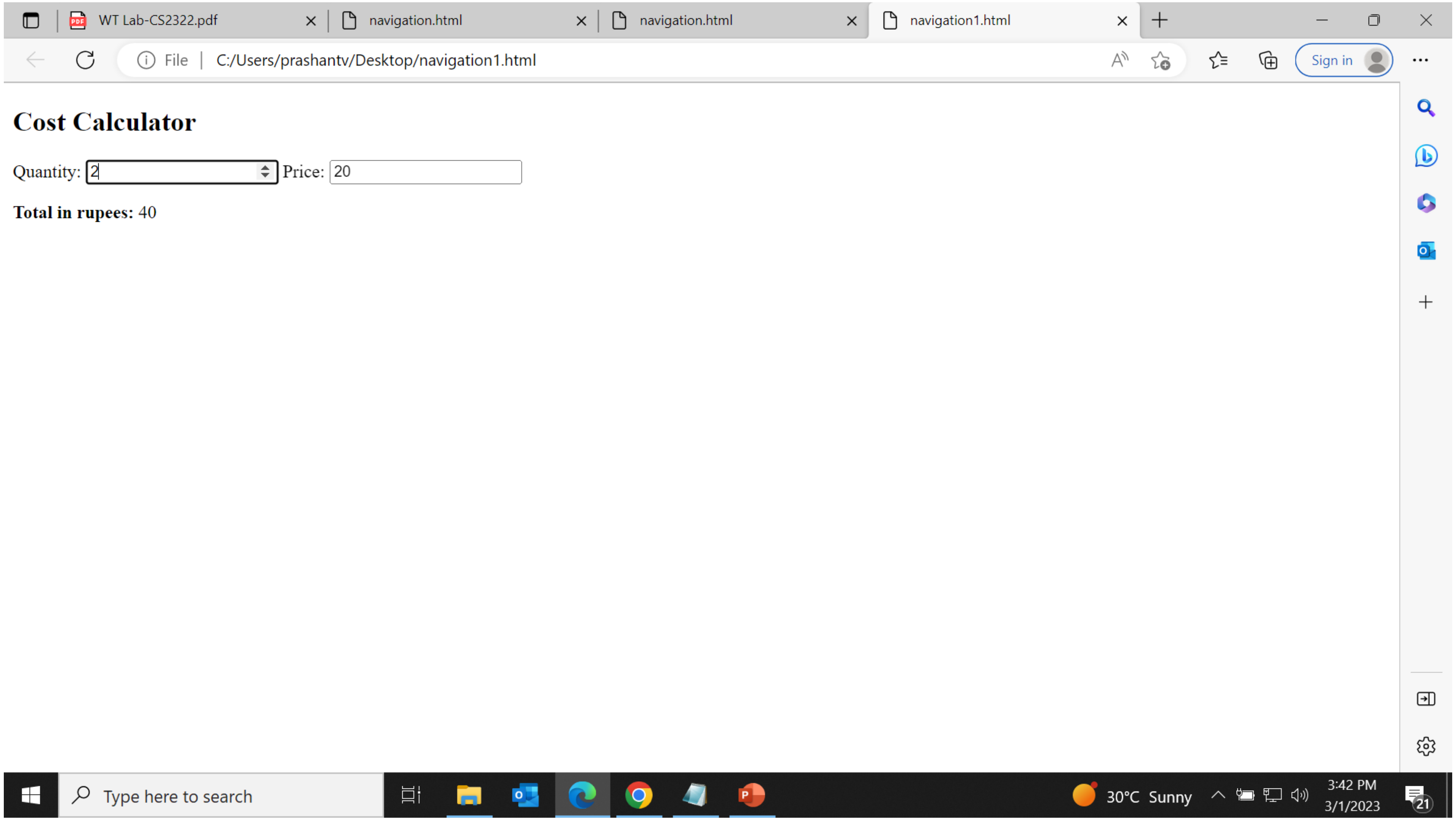
```
<!DOCTYPE html>
<html>
<script src="http://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js">
</script>
<body>
<div ng-app="" ng-init="firstName='Ajeet'">
<p>Input something in the input box:</p>
<p>Name: <input type="text" ng-model="firstName"></p>
<p>You wrote: {{ firstName }}</p>
</div>
</body>
</html>
```

- In the above example, the {{ firstName }} expression is an AngularJS data binding expression. Data binding in AngularJS binds AngularJS expressions with AngularJS data.
- {{ firstName }} is bound with ng-model="firstName".


WT Lab-CS2322.pdf
navigation.html
navigation.html
navigation1.html
File
C:/Users/prashantv/Desktop/navigation1.html
Sign in
Input something in the input box:
Name: Rahul
You wrote: Rahul
Type here to search
30°C Sunny
3:40 PM
3/1/2023

- Let's take another example where two text fields are bound together with two ng-model directives:

```html
<!DOCTYPE html>
<html>
<script  src="http://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js"></script>
<body>
<div data-ng-app="" data-ng-init="quantity=1;price=20">
<h2>Cost Calculator</h2>
Quantity: <input type="number" ng-model="quantity">
Price: <input type="number" ng-model="price">
<p><b>Total in rupees:</b> {{quantity * price}}</p>
</div>
</body>
</html>
```


WT Lab-CS2322.pdf
navigation.html
navigation.html
navigation1.html
File
C:/Users/prashantv/Desktop/navigation1.html
Sign in
Cost Calculator
Quantity: 2
Price: 20
Total in rupees: 40
Type here to search
30°C Sunny
3:42 PM
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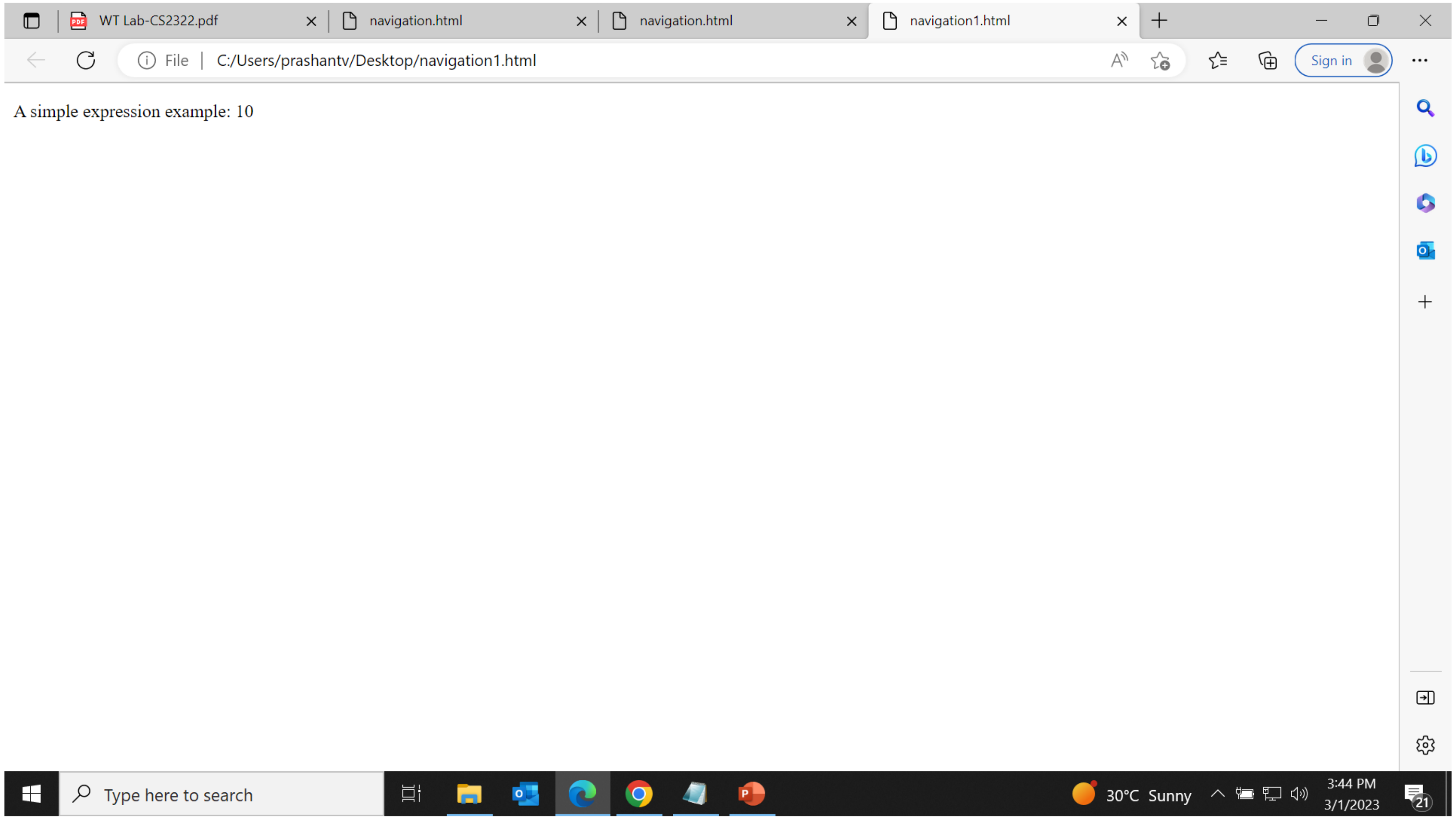
- **AngularJS Expressions**
- In AngularJS, expressions are used to bind application data to HTML. AngularJS resolves the expression, and return the result exactly where the expression is written.
- AnularJS expressions are very similar to JavaScript expressions. They can contain literals, operators, and variables. For example:

{{ 5 + 5 }} or {{ firstName + " " + lastName }}

```
<!DOCTYPE html>
<html>
<script src="http://ajax.googleapis.com/ajax/libs/angularjs/1.4.8/angular.min.js"></script>
<body>
<div ng-app>
<p>A simple expression example: {{ 5 + 5 }}</p>
</div>
</body>
</html>
```


WT Lab-CS2322.pdf
navigation.html
navigation.html
navigation1.html
File
C:/Users/prashantv/Desktop/navigation1.html
Sign in
A simple expression example: 10
Type here to search
30°C Sunny
3:44 PM
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