



Session 1

Understanding AngularJS and its Uses





Session Overview

In this session, you will be able to:

- Describe what AngularJS is
- Explain why we choose AngularJS
- Analyze MVC architecture concepts
- Describe where AngularJS is used

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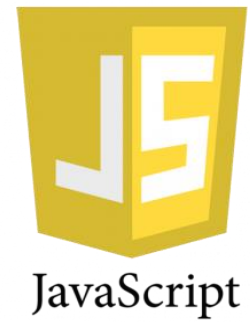


AngularJS – An Introduction

1-3

What is AngularJS?

- AngularJS is a JavaScript framework that is used to build browser based Web applications
- It is useful in building single-page Web applications to load varying content dynamically based on user actions



AngularJS – An Introduction

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What is AngularJS?

- It is written in JavaScript with a reduced jQuery library called jQuery lite
- Misko Hevery and Adam Abrons are the two developers who developed AngularJS
- It was first released in October 2010. The latest version, as of now, is Angular 2.4.3 in AngularJS



Misko Hevery



Adam Abrons

AngularJS – An Introduction

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What is AngularJS?

- It enables the developer, to encapsulate a portion of a page as one application
- The objective of AngularJS is to provide a framework that makes it easy to implement well-designed and well-structured Web pages and applications
- AngularJS makes Web application and the code very simple to write, test, and maintain



Why do we Choose AngularJS?

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Some of the reasons:

- It makes us implement MVC and makes it easy to correctly implement MVC
- The model components of AngularJS are basic JavaScript objects
- It allows us to have our custom defined tags in HTML
- It provides simple and flexible filters that help us to easily format data



Why do we Choose AngularJS?

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Some of the reasons:

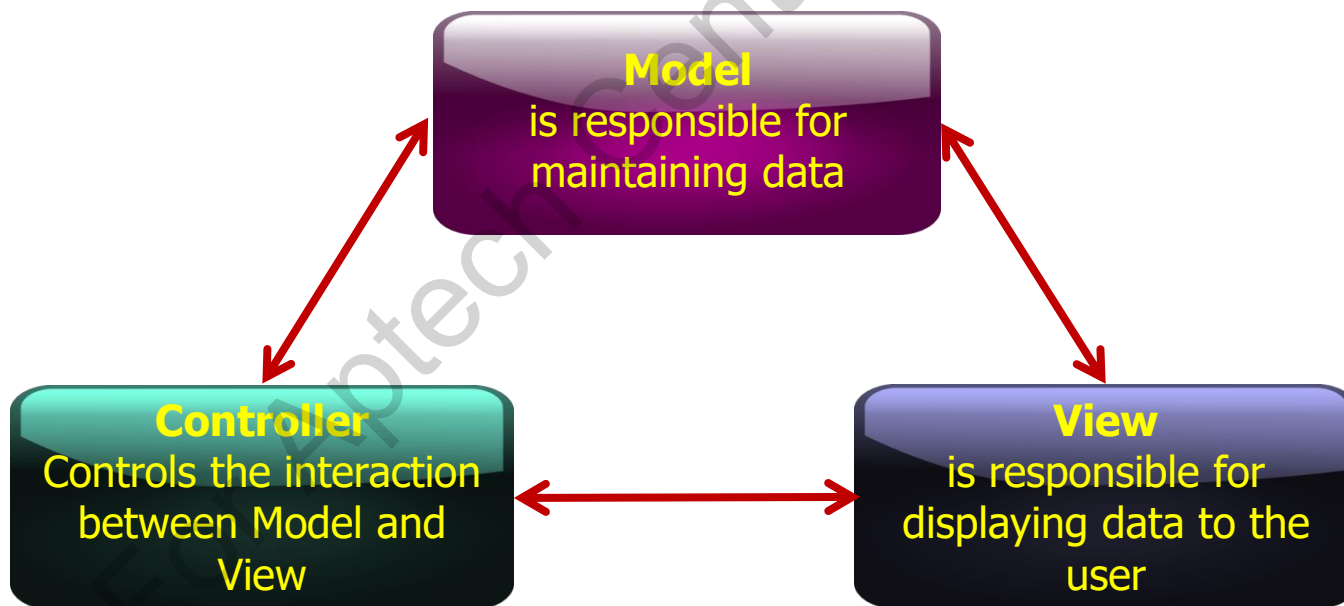
- AngularJS applications use less code than traditional JavaScript applications
- AngularJS applications need less Document Object Model (DOM) manipulation
- It supplies several built-in services and helps us to implement our own services
- It is easy to test applications and develop them using a test-driven approach

MVC Concepts

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MVC Architecture Pattern

- AngularJS supports MVC architecture in software development.
- The Model holds the data and logic, the View holds the visual layout and presentation, while the Controller coordinates the Model and View.

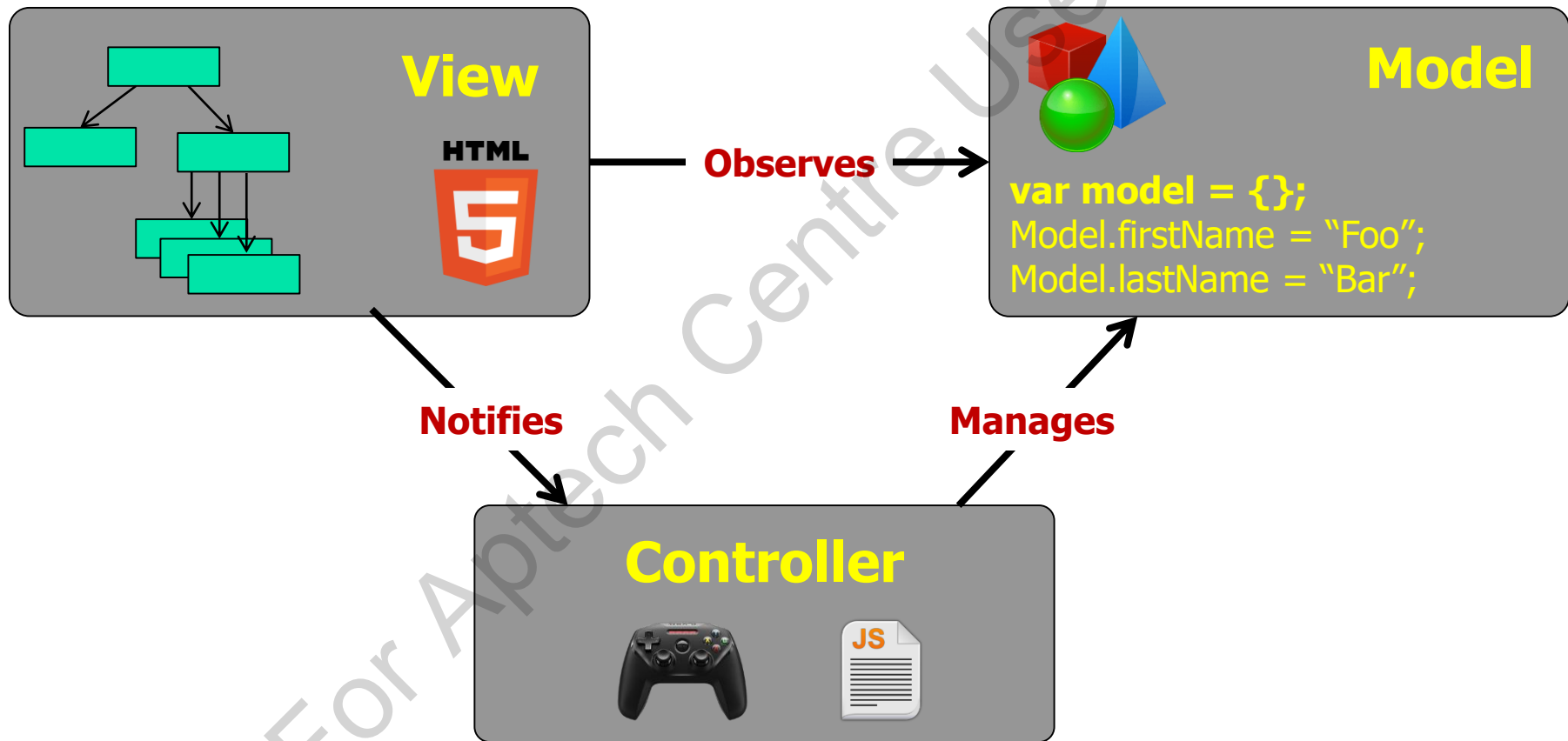


MVC Software Architecture Pattern

MVC Concepts

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MVC Pattern in AngularJS



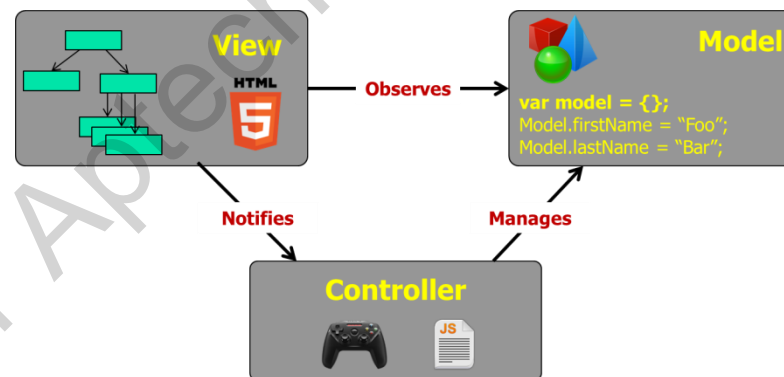
MVC Software Architecture Pattern

MVC Concepts

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MVC Architecture Benefits in AngularJS

- MVC-style architecture offers us a huge reduction in the effort required for the overall app development cycle
- Through MVC, we apply the principle of 'Separation of Concerns'
- MVC helps in the testing phase also. It leads to applications that are much easier to test unit wise and the total application as a whole
- MVC is a tried and tested way to build robust applications



MVC Software Architecture Pattern

Angular App Lifecycle

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Code for a Simple AngularJS Application

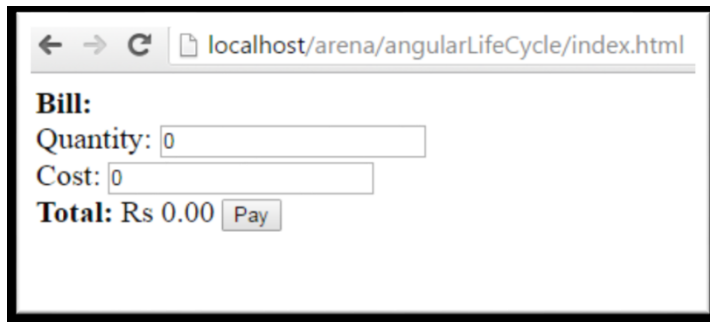
```
index.html
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <title>Demo for Angular App Lifecycle</title>
6   <script src="angular.min.js"></script>
7 </head>
8 <body>
9   <div ng-app="costApp" ng-controller="CostController">
10    <b>Bill:</b>
11    <div> Quantity: <input type="number" min="0" ng-model="qty" required ></div>
12    <div> Cost: <input type="number" min="0" ng-model="cost" required > </div>
13    <div>
14      <b>Total:</b>
15      <span>
16        {{total | currency:'Rs '}}
17      </span>
18      <button class="btn" ng-click="pay()">Pay</button>
19    </div>
20    <script>
21      var app = angular.module('costApp', []);
22      app.controller('CostController', function ($scope) {
23        $scope.qty = 0;
24        $scope.cost = 0;
25        $scope.total = 0;
26        $scope.pay = function(){
27          this.total = this.qty * this.cost
28        };
29      });
30    </script>
31  </div>
32 </html>
```

Code for the AngularJS Application

Angular App Lifecycle

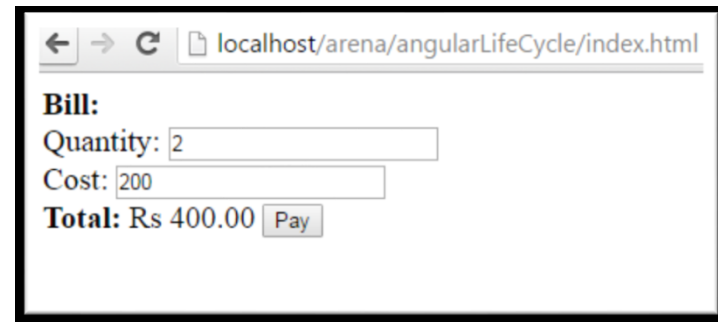
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Working of a Simple AngularJS Application



A screenshot of a web browser showing the initial state of an AngularJS application. The address bar displays 'localhost/arena/angularLifeCycle/index.html'. The page content includes a 'Bill:' label, a 'Quantity:' input field with the value '0', a 'Cost:' input field with the value '0', and a 'Total: Rs 0.00' label followed by a 'Pay' button.

Initial View of the AngularJS Application

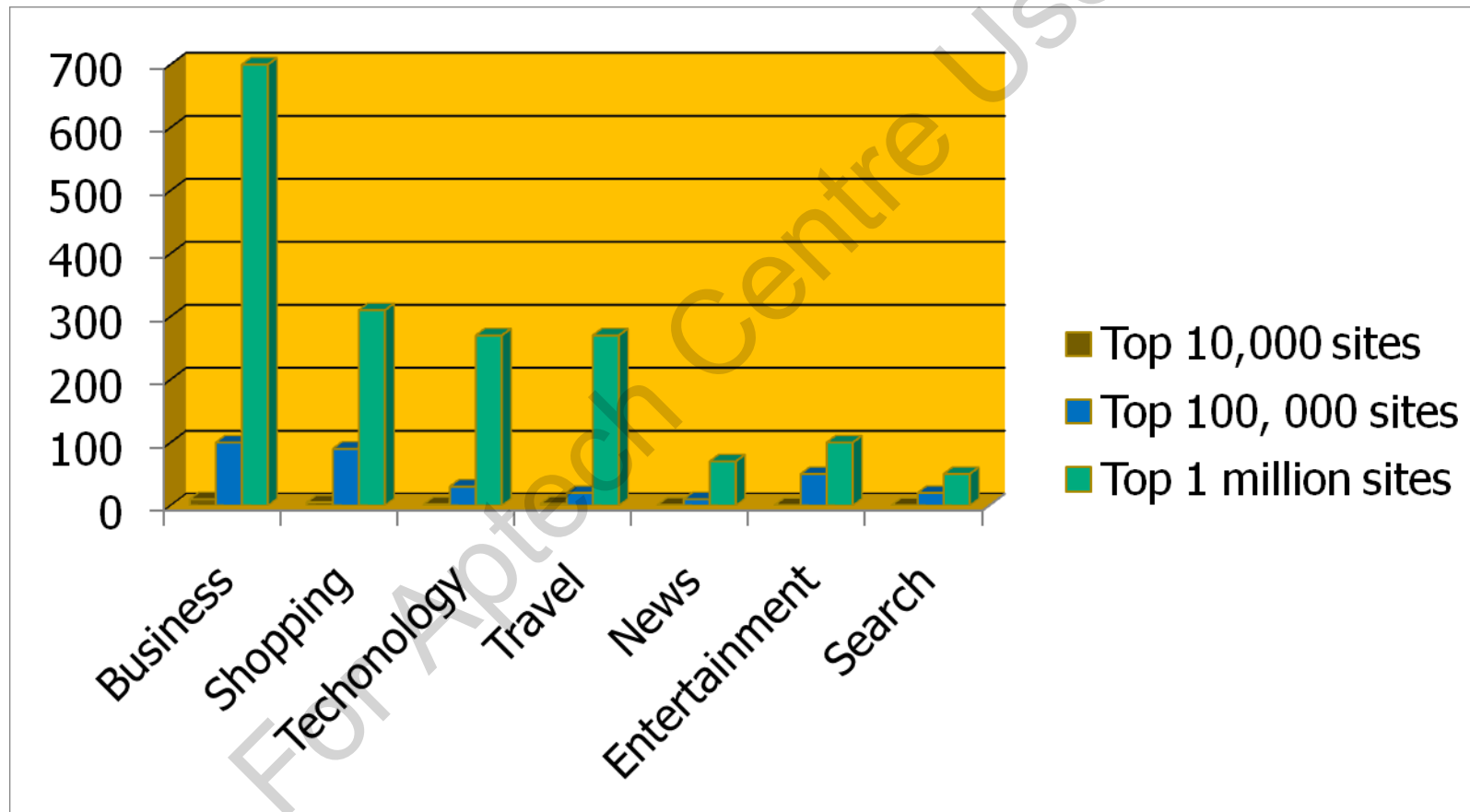


A screenshot of the same web browser showing the application after user input. The 'Quantity' input field now contains the value '2', and the 'Cost' input field contains the value '200'. The 'Total' label has updated to 'Rs 400.00', and the 'Pay' button remains visible.

View of the Angular Application after new Inputs and Calculation

Where is AngularJS Used?

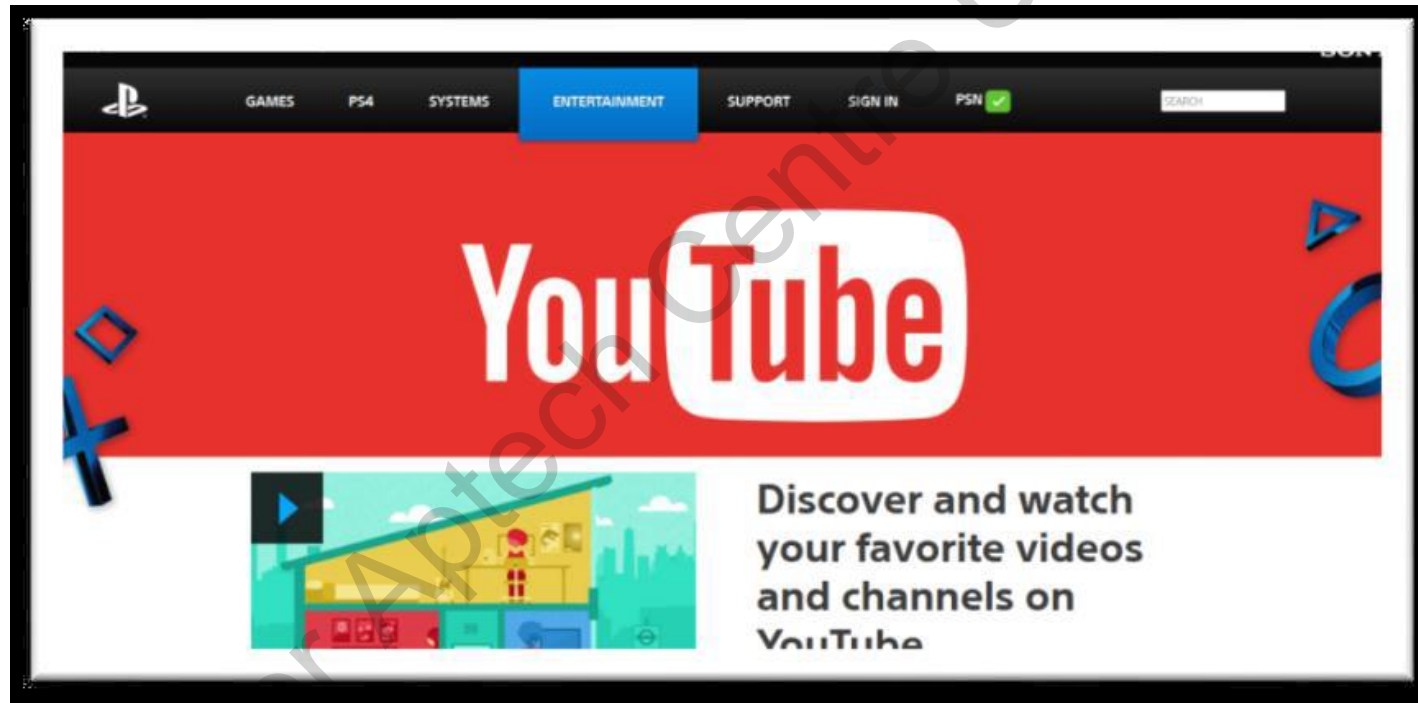
AngularJS Popular Website Verticals



Where is AngularJS Used?

Some popular Websites and apps built with AngularJS

YouTube for PS3

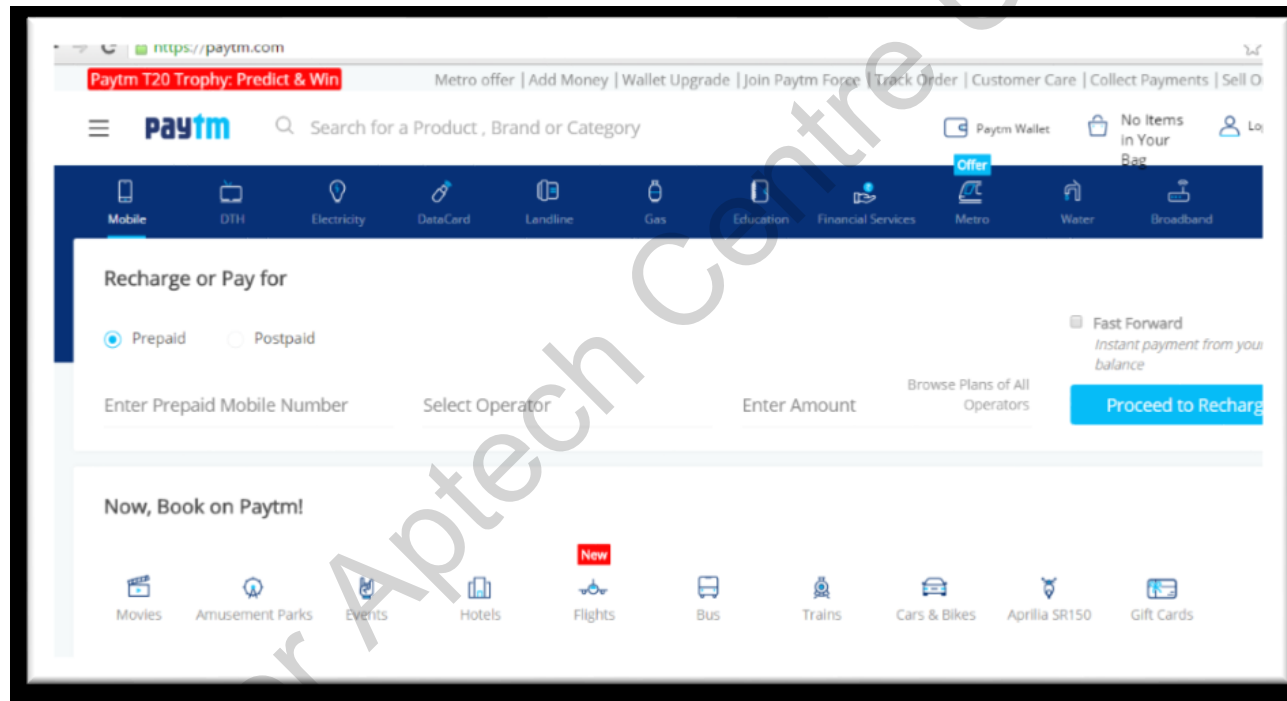


Popular YouTube for PS3 Website

Where is AngularJS Used?

Some popular Websites and apps built with AngularJS

Paytm

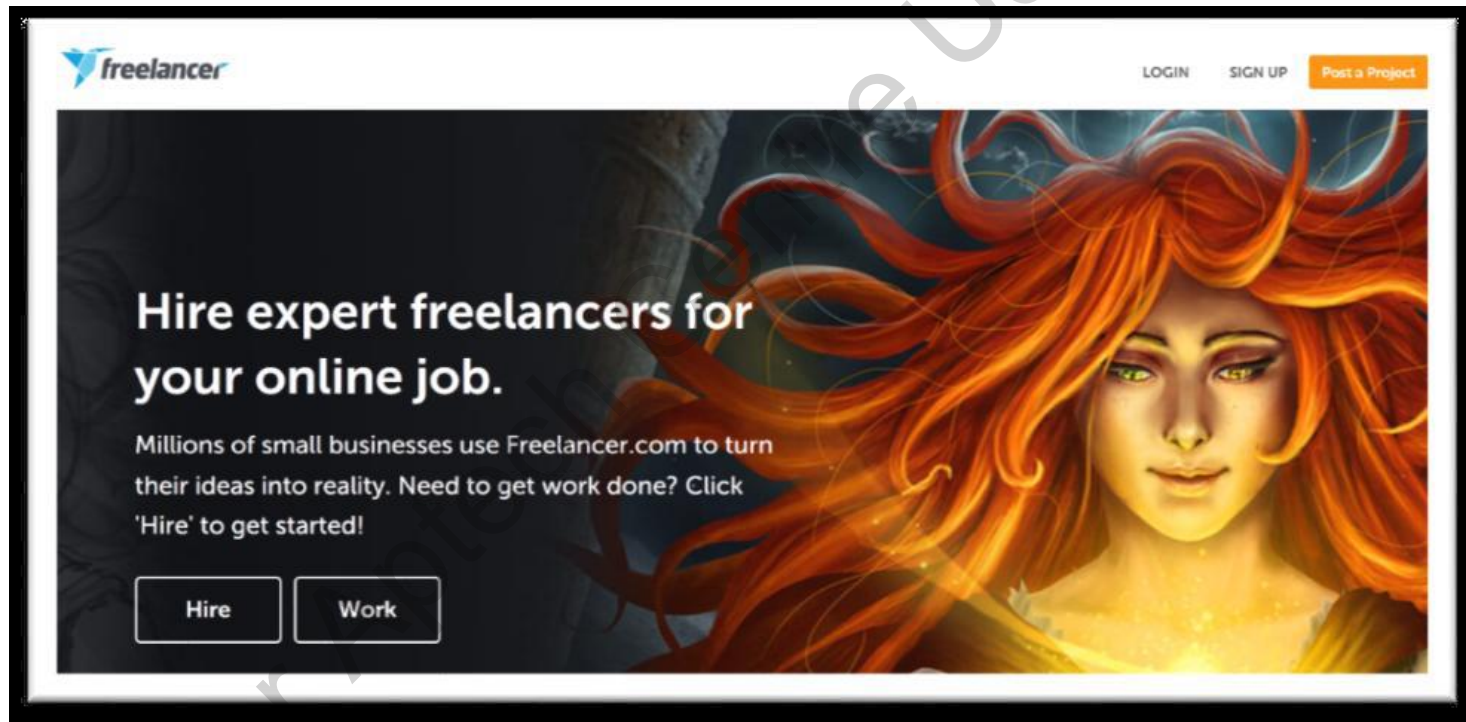


Popular Online Store Website

Where is AngularJS Used?

Some popular Websites and apps built with AngularJS

Freelancer

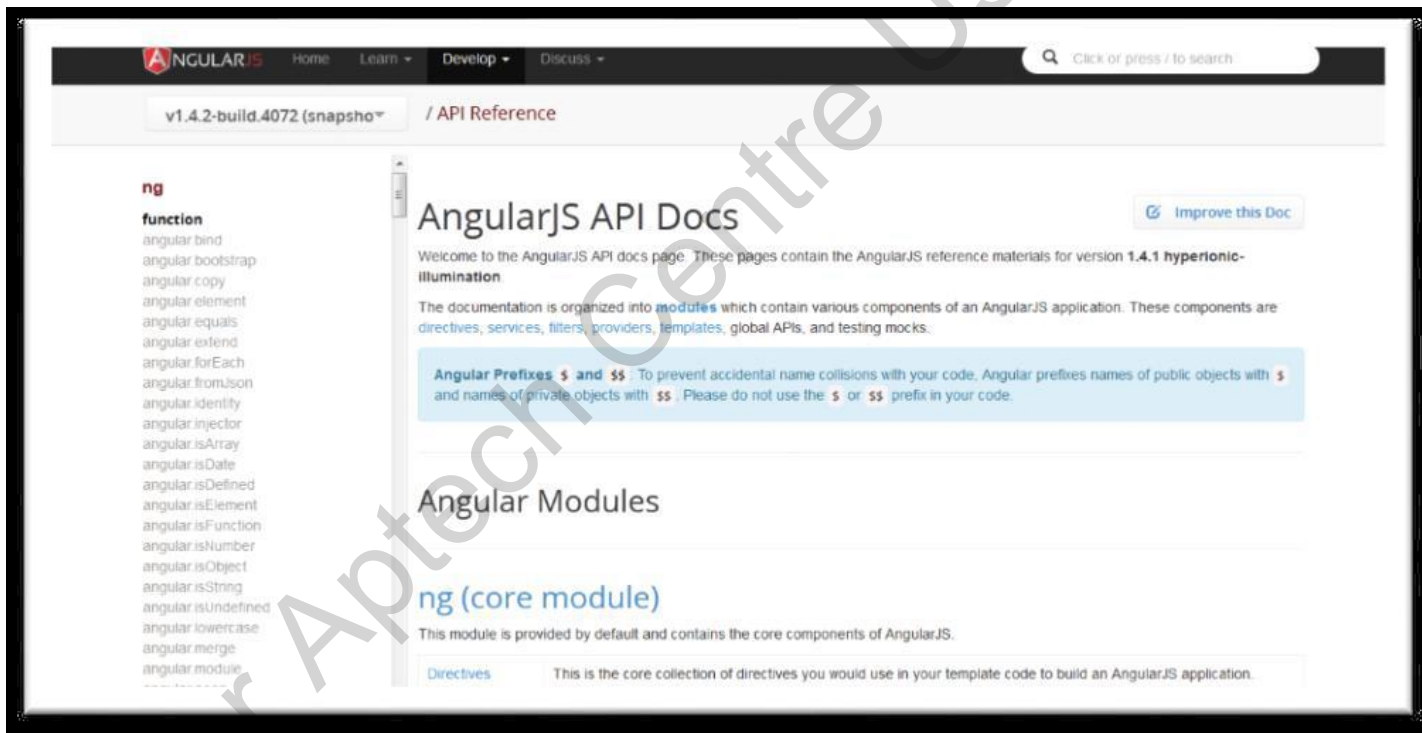


Popular Website for Freelance Work

Where is AngularJS Used?

Some popular Websites and apps built with AngularJS

Angularjs.org

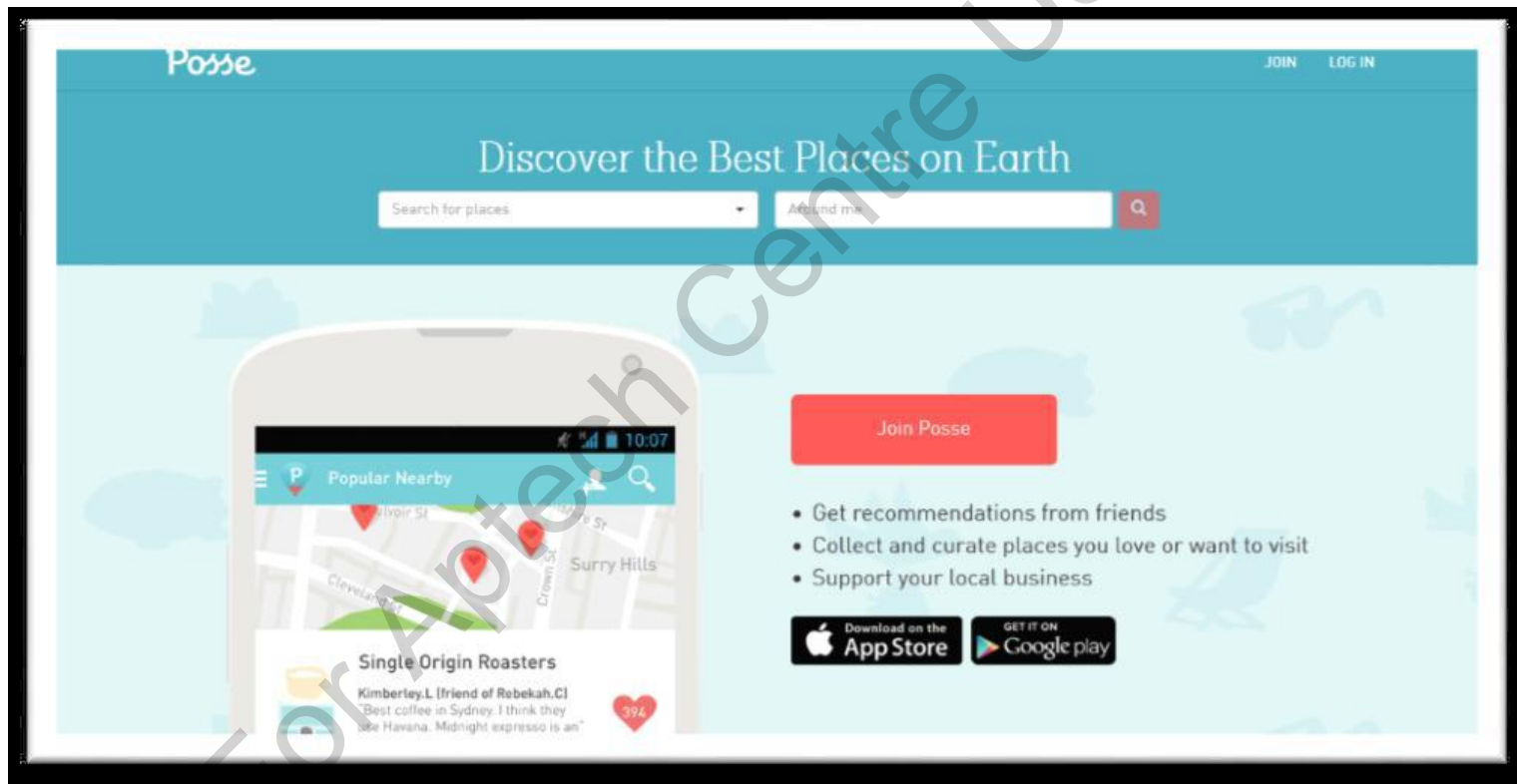


Website of AngularJS

Where is AngularJS Used?

Some popular Websites and apps built with AngularJS

Posse



Screen Grab of Posse app

Where is AngularJS Used?

Some popular Websites and apps built with AngularJS

MallZee



Screen Grab of MallZee app



Summary

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- AngularJS is a JavaScript framework which we use to build Web applications and dynamic Websites.
- MVC is a software design pattern that we follow while we develop our applications.
- AngularJS helps us to implement well-designed and well-structured Web applications using a Model-View-Controller (MVC), Model-View-Viewmodel (MVVM), and Model-View-Whatever (MVW) framework.
- Model has the application data.
- View is what is visible to the users of our application
- Controller acts as the link between the model and view.



Summary

2-2

- The view is defined in HTML, while the model and controllers are implemented in JavaScript.
- Important components of an AngularJS application are directives, expressions and filters.
- AngularJS has attained widespread acceptance and many popular Websites and Web applications are based on it.