Godavari College Of Engineering, Jalgaon.

ACADEMIC YEAR
2021 - 2022

VII SEMESTER

LAB MANUAL
FULL STACK DEVELOPMENT LAB
[BTCOL705]

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Godavari Foundation's
GODAVARI COLLEGE OF ENGINEERING, JALGAON
(NAAC Accredited)

(An affiliated to Dr. Babasaheb Ambedkar Technological University)

CERTIFICATE

This is to certify that Miss. **Shweta Ravindra Patil** , Roll No: **02** of **L.Y. COMPUTER** class has satisfactorily carried out the practical work in the Subject : **Full Stack Development (LAMP / MEAN) Laboratory [BTCOL705]** as per laid down in the syllabus, in this Laboratory and that this journal represent **her** bonafide work in the year **2021-2022.**

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Practical 1

Title: Study of Full Stack Development(LAMP / MEAN)

Aim: To learn Full Stack Development Technology and it's related terms.

Theory :

Web development : It refers to the building, creating, and maintaining of websites. It includes aspects such as web design, web publishing, web programming, and database management. It is the creation of an application that works over the internet i.e. websites. The word Web Development is made up of two words, that is:

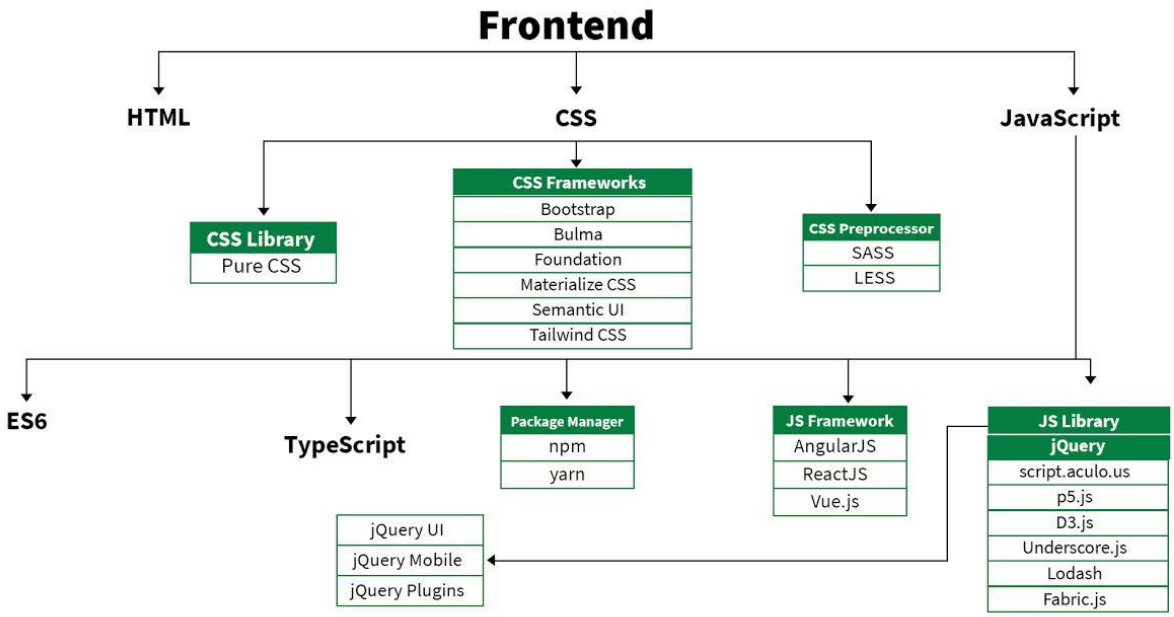
- **Web:** It refers to websites, web pages or anything that works over the internet.
- **Development:** Building the application from scratch.

Web Development can be classified into two ways:

1. Frontend Development
2. Backend Development

1) Frontend Development: The part of a website that the user interacts directly is termed as front end. It is also referred to as the 'client side' of the application.

Frontend Roadmap:



- **HTML:** HTML stands for HyperText Markup Language. It is used to design the front end portion of web pages using markup language. It acts as a skeleton for a website since it is used to make the structure of a website.

- **CSS:** Cascading Style Sheets fondly referred to as CSS is a simply designed language intended to simplify the process of making web pages presentable. It is used to style our website.

- **JavaScript:** JavaScript is a scripting language used to provide a dynamic behavior to our website.

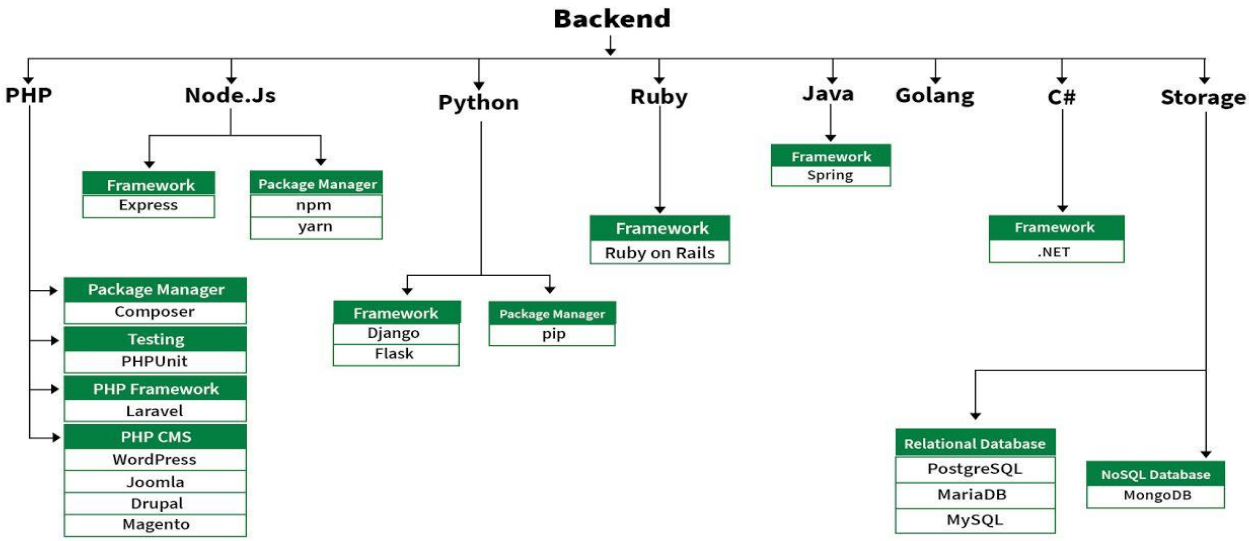
- **Bootstrap:** Bootstrap is a free and open-source tool collection for creating responsive websites and web applications. It is the most popular CSS framework for developing responsive, mobile-first websites. Nowadays, the websites are perfect for all the b2rowsers (IE, Firefox, and Chrome) and for all sizes of screens (Desktop, Tablets, Phablets, and Phones).
    - Boostrap 4
    - Boostrap 5

Frontend Frameworks and Libraries:

1. AngularJS 2. React.js 3. VueJS 4. jQuery 5. Bootstrap
6. Material UI 7. Tailwind CSS 8)jQuery UI etc.

2) Backend Development: Backend is the server side of a website. It is the part of the website that users cannot see and interact. It is the portion of software that does not come in direct contact with the users. It is used to store and arrange data.

Backend Roadmap:

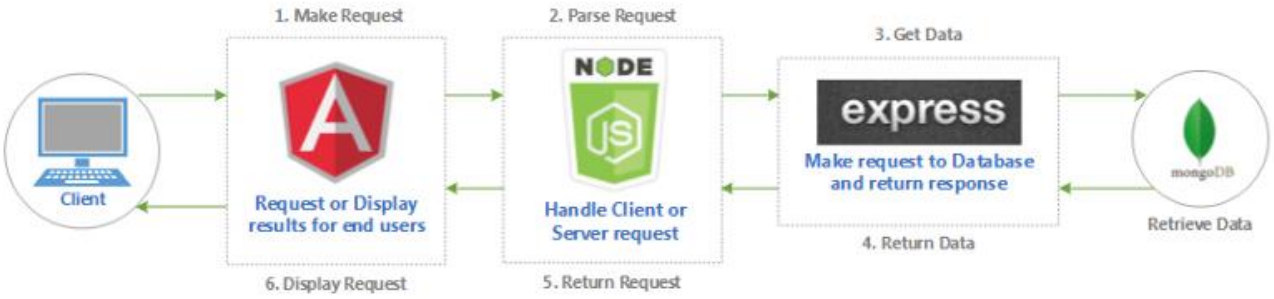


1. <u>MEAN Stack Developer</u> : MEAN refers to

- M for MongoDB (No SQL database)
- E for Express.js (a framework on top of Node.js)
- A for Angular (a front end framework)

- N for Node.js (JavaScript runtime environment)

MEAN Stack Developer is an IT professional who develops a web application using a collection of JavaScript technologies. Here the database, server and even client also is based on JavaScript technology. It is a full-stack and a user-friendly collection of JavaScript framework, which is ideal for making dynamic websites and applications. It is also available for free as an open-source stack.



- **MongoDB** is a schemaless NoSQL database system. MongoDB saves data in binary JSON format which makes it easier to pass data between client and server.
- **Express** is lightweight framework used to build web applications in Node. It provides a number of robust features for building single and multi page web application. Express is inspired by the popular Ruby framework, Sinatra.
- **AngularJS** is a JavaScript framework developed by Google. It provides some awesome features like the two-way data binding. It's a complete solution for rapid and awesome front end development.
- **Node.js** is a server side JavaScript execution environment. It's a platform built on Google Chrome's V8 JavaScript runtime. It helps in building highly scalable and concurrent applications rapidly.

Pros of MEAN Stack Development :

- It is full stack JavaScript which is fully free for working.
- It helps in developing applications on rapid base.
- It uses very low memory as overhead.
- It organizes the whole applications.
- It helps to avoid every unnecessary groundwork.
- Its Mongo Data Base is used for cloud storage.

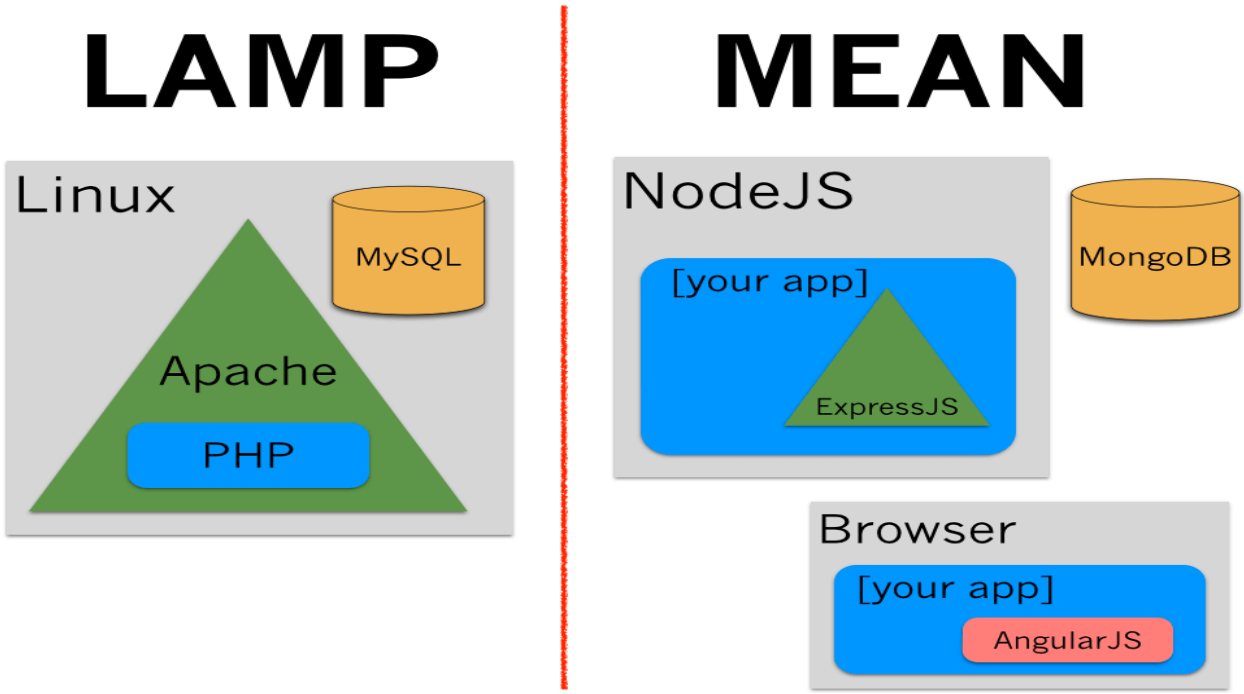
Cons of MEAN Stack Development :

- It is not best for large-scale applications.
- It has no specific JavaScript program coding guidelines.
- It is hard to go back to approach the old data when you already developed the site using MEAN Stack technology.
- In business logic , it gives poor isolation from server.

- It loses record and don't have backup facilities.

2. <u>LAMP Stack Developer:</u> LAMP refers to

- Linux which is a Operating system.
- Apache which is a Web server.
- MySQL which is managing the code in the database.
- PHP which is a programming language.
- LAMP stack developer is an IT professional who develops application using Linux, Apache, MySQL, PHP etc. It works with a lots of software program which is good for web application development. As a largest and oldest community, it gives a best platform for hosting web applications.



Pros Of LAMP Stack Development :

- One of the best benefits of using LAMP is it's a widespread support.
- Because of renowned of PHP and MySQL backends , it supports several hosting providers.
- It is a open Source stack development.
- PHP and MySQL are easy to learn , so it is convenient for beginners.
- It is more scalable and faster to develop because of non-blocking structure.
- The developer can customized the modules as per its necessities.

Cons Of LAMP Stack Development :

- It only supports Linux OS.
- It makes formidable to switch in between PHP and Python and later on HTML and JavaScript

Difference between MEAN Stack Developer And LAMP Stack Developer :

MEAN STACK	LAMP STACK
MEAN refers to MongoDB, Express, Angular and Node.js.	LAMP refers to Linux Operating System, Apache, MySQL, PHP.
MEAN Stack Developer is an IT professional develops a web application using a collection of Java Script technologies i.e. MEAN.	LAMP stack developer is an IT professional who develops web applications using Linux OS, Apache, MySQL, PHP i.e. LAMP.
MEAN developers allows to deploy their applications in any OS that supports Node JS.	LAMP developers allows to deploy web application only in Linux OS.
It only allows the JavaScript in both side like client and server side.	It allows developers to code in PHP and also MySQL.
It uses a webserver called Node.JS.	It has Apache Web Server as its components.
For MEAN , MongoDB (Non Relational) is the only database for the users.	For LAMP ,MySQL is the default RDBMS (Relational Data Base Management System).
MEAN stack allows developers to use Angular.JS for front-end.	LAMP stack doesn't have any front-end components.
Mainstream backers are Google, IBM, Samsung.	Mainstream backers are Oracle, Zend, Linux Foundation.

Conclusion : In this Practical I learn basic concepts of web development & Introduction to MEAN Stack Development.

Practical 2

Title: Study of Installation Process of Angular

Aim: To learn Installation Process of Angular

Theory :

Angular JS : AngularJS is an open-source web application framework. It was originally developed in 2009 by Misko Hevery and Adam Abrons. It is now maintained by Google. Its latest version is 1.2.21.

Definition of AngularJS as put by its official documentation is as follows −
AngularJS is a structural framework for dynamic web applications. It lets you use HTML as your template language and lets you extend HTML's syntax to express your application components clearly and succinctly. Its data binding and dependency injection eliminate much of the code you currently have to write. And it all happens within the browser, making it an ideal partner with any server technology.

General Features : The general features of AngularJS are as follows −

- AngularJS is a efficient framework that can create Rich Internet Applications (RIA).
- AngularJS provides developers an options to write client side applications using JavaScript in a clean Model View Controller (MVC) way.
- Applications written in AngularJS are cross-browser compliant. AngularJS automatically handles JavaScript code suitable for each browser.
- AngularJS is open source, completely free, and used by thousands of developers around the world. It is licensed under the Apache license version 2.0.
- Overall, AngularJS is a framework to build large scale, high-performance, and easy tomaintain web applications.

Core Features : The core features of AngularJS are as follows −

- Data-binding − It is the automatic synchronization of data between model and view components.
- Scope − These are objects that refer to the model. They act as a glue between controller and view.
- Controller − These are JavaScript functions bound to a particular scope.

- Services − AngularJS comes with several built-in services such as $http to make a
- XMLHttpRequests. These are singleton objects which are instantiated only once in app.
- Filters − These select a subset of items from an array and returns a new array.
- Directives − Directives are markers on DOM elements such as elements, attributes, css, and more. These can be used to create custom HTML tags that serve as new, custom widgets.
- AngularJS has built-in directives such as ngBind, ngModel, etc.
- Templates − These are the rendered view with information from the controller and model.
- These can be a single file (such as index.html) or multiple views in one page using partials.
- Routing − It is concept of switching views.
- Deep Linking − Deep linking allows to encode the state of application in the URL so that it can be bookmarked. The application can then be restored from the URL to the same state.
- Dependency Injection − AngularJS has a built-in dependency injection subsystem that helps
- the developer to create, understand, and test the applications easily.

Advantages of AngularJS: The advantages of AngularJS are −

- It provides the capability to create Single Page Application in a very clean and maintainable way.
- It provides data binding capability to HTML. Thus, it gives user a rich and responsive experience.
- AngularJS code is unit testable.
- AngularJS uses dependency injection and make use of separation of concerns.
- AngularJS provides reusable components.
- With AngularJS, the developers can achieve more functionality with short code.
- In AngularJS, views are pure html pages, and controllers written in JavaScript do the business processing.
- On the top of everything, AngularJS applications can run on all major browsers and smart

- phones, including Android and iOS based phones/tablets.

Angular CLI Installation & Setup :

Angular is a front-end framework which is used to create web applications. It uses typescript by default for creating logics and methods for a class but the browser doesn't know typescript. Here webpack comes in picture, webpack is used to compile these typescript files to JavaScript. In addition, there are so many configuration files you will need to run an angular project on your computer.

Angular CLI is a tool that does all these things for you in some simple commands. Angular CLI uses webpack behind to do all this process.

Note: Please make sure you have installed node and npm in your system. You can check your node version and npm version by using the following command:

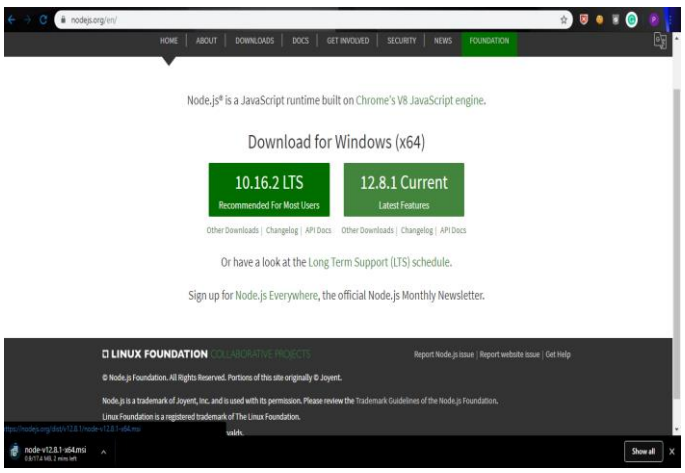
Angular 7 Installation : To install Angular 7 on your machine you have to require the following things to be installed in your machine.

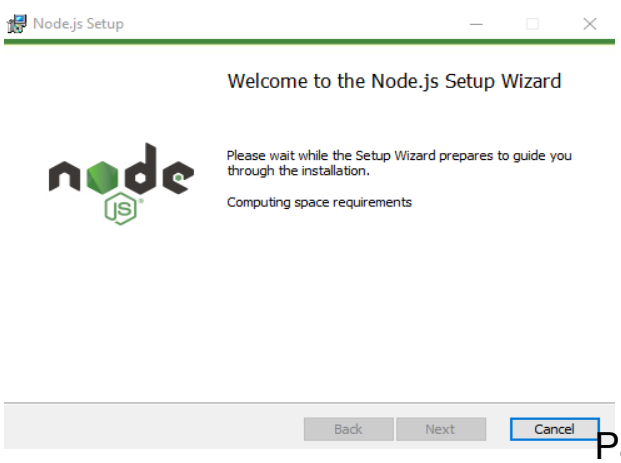
- Install Visual Studio Code IDE or JetBrains WebStorm.
- Install Node.js
- Using npm to install angular cli

Follow the steps to set up an Angular 7 Environment:

Step 1: Install Visual Studio Code IDE (or JetBrains WebStorm) : Visual Studio Code is light and easy to set up, it has a great range of built-in IntelliSense features. It is free to use. It also provides a huge number of extensions that will significantly increase performance.

Step 2: Install Node.js : The Node.js manages npm dependencies support some browsers when loading particular pages. It provides necessary libraries to run the Angular project. It also serves the run-time environment on localhost (local machine).

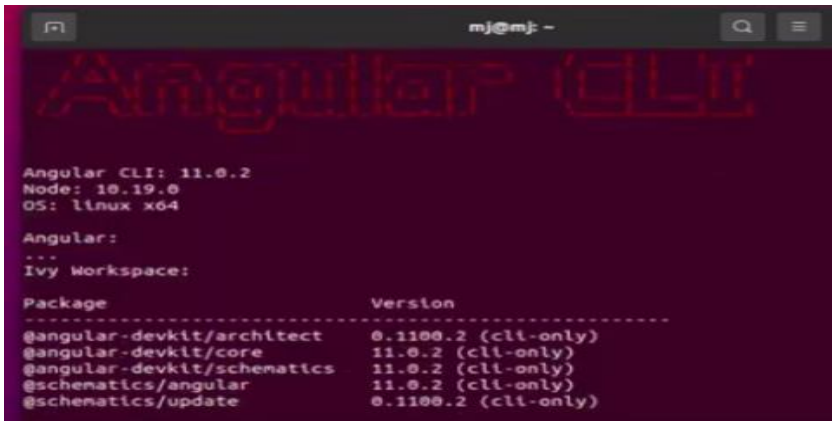




Step 3: Using npm to install angular cli : Open your VS Code IDE and choose a folder for the path of the project and open it on VS Code by selecting File->Open Folder. Run the following command to install angular CLI:

npm install -g @angular/cli

Step 4: Check The Angular CLI Version: And to check the proper installation of Angular CLI we can check its version using the command given. : **ng version**



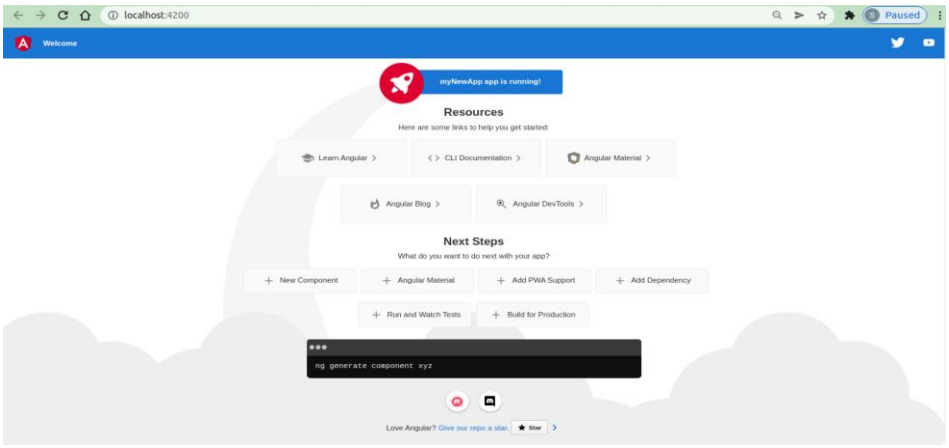
Steps to Create your first application using angular CLI:

Step-1: Install angular cli : **npm install - g @angular/cli**

Step-2: Create new project by this command and Choose yes or no option for routing option and, CSS or SCSS. : **ng new myNewApp**

Step-3: Go to your project directory : **cd myNewApp**

Step-4: Run server and see your application in action : **ng serve -o –poll=2000**



Conclusion : In this Practical I learn Installation Process of Angular

Practical 3

Title: Create Web Page Using HTML5 Features.

Aim: To learn Create Web Page Using HTML5 Features.

Theory :

HTML5 : HTML5 is a next version of HTML. Here, you will get some brand new features which will make HTML much easier. These new introducing features make your website layout clearer to both website designers and users. There are some elements like <header>, <footer>, <nav> and <article> that define the layout of a website.

HTML5 is a cooperation between the World Wide Web Consortium (W3C) and the Web Hypertext Application Technology Working Group (WHATWG).

The new standard incorporates features like video playback and drag-and-drop that have been previously dependent on third-party browser plug-ins such as Adobe Flash, Microsoft Silverlight, and Google Gears.

Browser Support : The latest versions of Apple Safari, Google Chrome, Mozilla Firefox, and Opera all support many HTML5 features and Internet Explorer 9.0 will also have support for some HTML5 functionality.

The mobile web browsers that come pre-installed on iPhones, iPads, and Android phones all have excellent support for HTML5.

New Features : HTML5 introduces a number of new elements and attributes that can help you in building modern websites. Here is a set of some of the most prominent features introduced in HTML5.

- New Semantic Elements − These are like <header>, <footer>, and <section>.
- Forms 2.0 − Improvements to HTML web forms where new attributes have been introduced for <input> tag.
- Persistent Local Storage − To achieve without resorting to third-party plugins.

- WebSocket − A next-generation bidirectional communication technology for web applications.
- Server-Sent Events − HTML5 introduces events which flow from web server to the web browsers and they are called Server-Sent Events (SSE).
- Canvas − This supports a two-dimensional drawing surface that you can program with JavaScript.
- Audio & Video − You can embed audio or video on your webpages without resorting to third-party plugins.
- Geolocation − Now visitors can choose to share their physical location with your web application.
- Microdata − This lets you create your own vocabularies beyond HTML5 and extend your web pages with custom semantics.
- Drag and drop − Drag and drop the items from one location to another location on the same webpage.

Backward Compatibility : HTML5 is designed, as much as possible, to be backward compatible with existing web browsers. Its new features have been built on existing features and allow you to provide fallback content for older browsers.

It is suggested to detect support for individual HTML5 features using a few lines of JavaScript.

If you are not familiar with any previous version of HTML, I would recommend that you go through our HTML Tutorial before exploring the features of HTML5.

HTML5 Document : The following tags have been introduced for better structure −

1. section − This tag represents a generic document or application section. It can be used together with h1-h6 to indicate the document structure.

2. article − This tag represents an independent piece of content of a document, such as a blog entry or newspaper article.

3. aside − This tag represents a piece of content that is only slightly related to the rest of the page.

4. header − This tag represents the header of a section.

5. footer − This tag represents a footer for a section and can contain information about the author, copyright information, et cetera.

6. nav − This tag represents a section of the document intended for navigation.

7. dialog − This tag can be used to mark up a conversation.

8. figure − This tag can be used to associate a caption together with some embedded content, such as a graphic or video.

Program Code :

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset = "utf-8">
    <title>...</title>
  </head>
  <body>
    <header role = "banner">
      <h1 align="center">HTML5 Document Structure Example</h1>
      <p>This page should be tried in safari, chrome or Mozila.</p>
    </header>

    <nav>
      <ul>
        <li><a href = "https://www.tutorialspoint.com/html">HTML Tutorial</a></li>
        <li><a href = "https://www.tutorialspoint.com/css">CSS Tutorial</a></li>
        <li><a href = "https://www.tutorialspoint.com/javascript">
        JavaScript Tutorial</a></li>
      </ul>
    </nav>
```

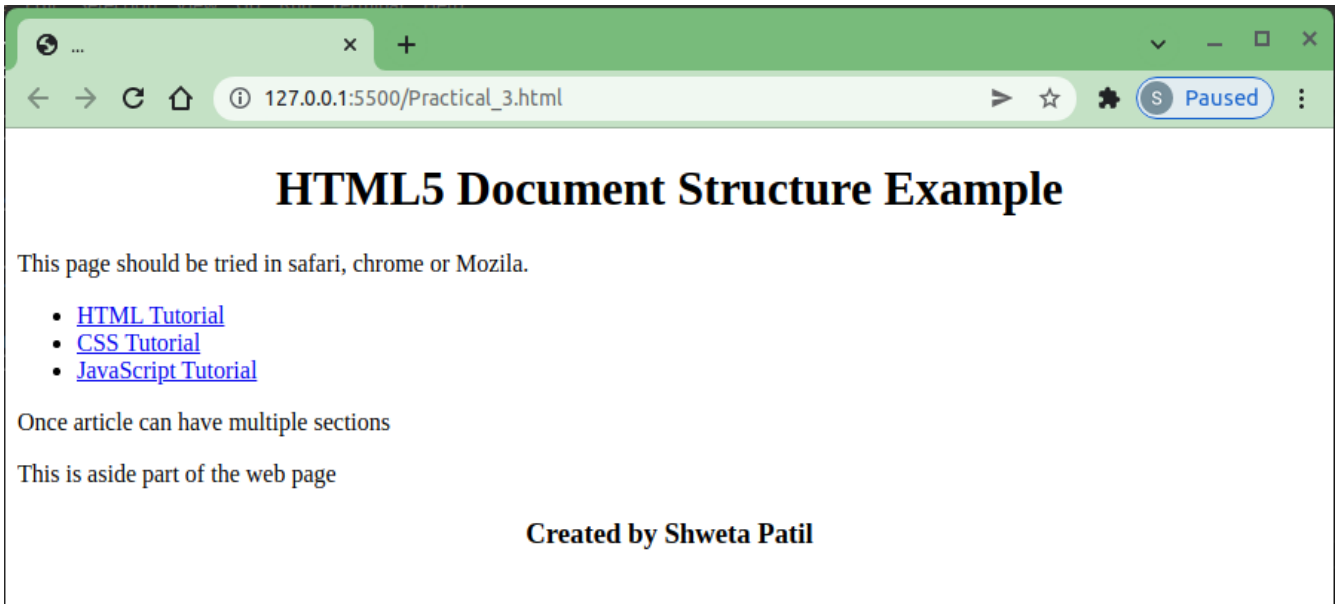
```
    <article>
      <section>
        <p>Once article can have multiple sections</p>
      </section>
    </article>

    <aside>
      <p>This is  aside part of the web page</p>
    </aside>

    <footer>
      <h3 align="center">Created by Shweta Patil </h3>
    </footer>

  </body>
</html>
```

OUTPUT :



Conclusion : In this Practical I learn Create Web Page Using HTML5 Features.

Practical 4

Title: Create a Website Using 3 types of CSS

Aim: To learn Create a Website Using 3 types of CSS

Theory :

Cascading Style Sheets (CSS): CSS is used to control the style of a web document in a simple and easy way. CSS is the acronym for "Cascading Style Sheet". This tutorial covers both the versions CSS1, CSS2 and CSS3, and gives a complete understanding of CSS, starting from its basics to advanced concepts. Cascading Style Sheets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable.

CSS handles the look and feel part of a web page. Using CSS, you can control the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colors are used, layout designs, variations in display for different devices and screen sizes as well as a variety of other effects.

CSS is easy to learn and understand but it provides powerful control over the presentation of an HTML document. Most commonly, CSS is combined with the markup languages HTML or XHTML.

Advantages of CSS :

• CSS saves time − You can write CSS once and then reuse same sheet in multiple HTML pages. You can define a style for each HTML element and apply it to as many Web pages as you want.

• Pages load faster − If you are using CSS, you do not need to write HTML tag attributes every time. Just write one CSS rule of a tag and apply it to all the occurrences of that tag. So less code means faster download times.

• Easy maintenance − To make a global change, simply change the style, and all elements in all the web pages will be updated automatically.

• Superior styles to HTML − CSS has a much wider array of attributes than HTML, so you can give a far better look to your HTML page in comparison to HTML attributes.

• Multiple Device Compatibility − Style sheets allow content to be optimized for more than one type of device. By using the same HTML document, different versions of a website can be

presented for handheld devices such as PDAs and cell phones or for printing.

• Global web standards − Now HTML attributes are being deprecated and it is being recommended to use CSS. So its a good idea to start using CSS in all the HTML pages to make them compatible to future browsers.

Ways of Linking CSS Rules to an HTML Document : There are three ways of adding CSS rules to a web page:

1. Inline styles
2. Internal stylesheets
3. External stylesheets

In the vast majority of cases, external stylesheets should be used. However, there are instances where inline styles or internal stylesheets may be used.

1) Inline Styles : Inline styles are applied to specific HTML elements. The HTML attribute style is used to define rules that only apply to that specific element. Here's a look at the syntax for writing inline styles.

```
<h1 style="color:red; padding:10px; text-decoration:underline;">Example Heading</h1>
```

2) Internal Stylesheets : The earlier examples in this tutorial make use of internal stylesheets. An internal stylesheet is a block of CSS added to an HTML document head element. The style element is used between the opening and closing head tags, and all CSS declarations are added between the style tags

```
<head>

<style>
h1 {
color: red;
padding: 10px;
text-decoration: underline; }
</style>

</head>

<body>
<h1>Example Heading</h1>
</body>
```

3) External Stylesheets : External stylesheets are documents containing nothing other than CSS statements. The rules defined in the document are linked to one or more HTML documents by using the link tag within the head element of the HTML document.

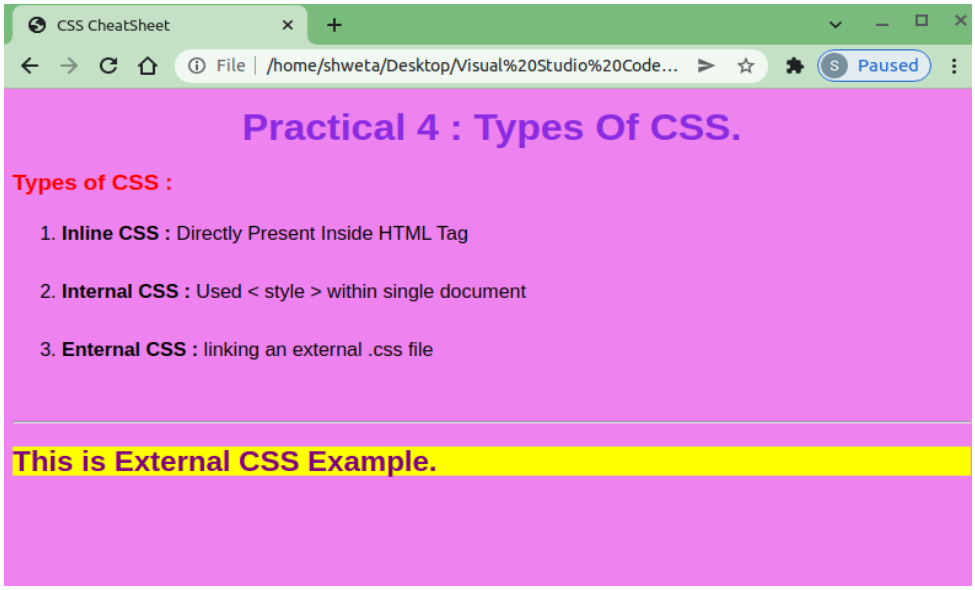
a) To use an external stylesheet, first create the CSS document.

```
/**************************************************
Save with a name ending in .css such as styles.css
**************************************************/
h1 {
color: red;
padding: 10px;
text-decoration: underline;
}
```

b) Now that we have an external stylesheet with some styles, we can link it to an HTML document using the link element.

```
<head>
<link rel="stylesheet" type="text/css" href="styles.css">
</head>
<body>
<h1>Example Heading</h1>
</body>
```

OUTPUT :



Conclusion : In this Practical I learn to Create a Website Using 3 types of CSS

Practical 5

Title: Create Website using Boostrap.

Aim: To learn & Create Website using Boostrap.

Theory :

1) Boostrap : Bootstrap is a framework which uses HTML, CSS and JavaScript for the web design. It is supported by all the major browsers e.g. Firefox, Opera and Chrome etc. Further, Bootstrap includes several predefined classes for easy layouts e.g. dropdown buttons, navigation bar and alerts etc. Lastly, it is responsive in nature i.e. the layout changes automatically according to the device e.g. mobile or laptop etc.

2 Setup : Bootstrap needs atleast 3 files for its operation which can be downloaded from the Bootstrap website.

- bootstrap.css (Line 7) : This file contains various CSS for bootstrap.
- bootstrap.js (Line 16) : This file contains various JavaScript functionalities e.g. dropdown and alerts etc.
- jQuery.js (Line 17) : This file is the jQuery library which can be downloaded from the 'jQuery' website. It is required for proper working of 'bootstrap.js'.

2.1 Download and include files : These files are downloaded and saved inside the 'asset' folder. Next, we need to include these files in the HTML document as below,

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <title>Bootstrap Tutorial</title>
5                    <!-- CSS -->
6                    <link href="asset/css/bootstrap.min.css" rel="stylesheet">
7                     <!-- Add Custom CSS below -->
8  </head>
9  <body>
10                  <!-- Javascript -->
11                  <!-- put jQuery.js before bootstrap.min.js; and then add custom jquery -->
12                  <script src="asset/js/jquery-3.3.1.min.js"></script>
13                  <script src="asset/js/bootstrap.min.js"></script>
14 </body>
15 </html>
```

2.2 Add CDN : Another way to include the files is CDN. In this method, we need not to download the files, but provide the links to these files, as shown in Lines 8, 17 and 19 of below code. Note that, in this case the code will not work in offline mode.

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <title>Bootstrap Tutorial</title>
5                  <!-- CSS -->
6                  <!-- Latest compiled and minified CSS -->
7  <link rel="stylesheet"href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css"
8  integrity="sha384BVYiiSIFeK1dGmJRAkycuHAHRg32OmUcww7on3RYdg4Va+PmSTsz/K68vbdEjh4u"
9  crossorigin="anonymous">
10                 <!-- Add Custom CSS below -->
11 </head>
12 <body>
13           <!-- Javascript -->
14           <!-- jQuery -->
15           <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
16           <!-- Latest compiled and minified JavaScript -->
17           <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"
18 integrity="sha384Tc5IQib027qvyjSMfHjOMaLkfuWVxZxUPnCJA7l2mCWNIpG9mGCD8wGNIcPD7Txa"
19 crossorigin="anonymous"></script>
20
21 </body>
22 </html>
```

3 Grid system : Bootstrap divides the each row into 12 columns. Then following commands can be used to specify the width the columns

- col-lg-4 : It will select 4 columns. Choose any number between 1-12. The ‘lg’ stand for large screen (e.g. large computer screen).
- col-md-5 : ‘md’ = medium screen
- col-sm-3 : ‘sm’ = small screen
- col-xs-3 : ‘xs’ = extra small screen
- col-lg-offset-4 : skip first 4 columns. Simimlary use ‘md’, ‘sm’ and ‘xs’ with offset

4. Code :

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <title>Bootstrap 101: Learn Bootstrap in 60 minutes by Bootstrapious.com</title>
    <meta name="description" content="">
    <meta name="viewport" content="width=device-width, initial-scale=1">
```

```
    <meta name="robots" content="all,follow">
    <!-- Bootstrap CSS-->
    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/twitter-
bootstrap/4.1.3/css/bootstrap.min.css">
    <!-- Custom stylesheet - for your changes-->
    <link rel="stylesheet" href="css/custom.css">
    <!-- Favicon-->
    <link rel="shortcut icon" href="favicon.png">
    <!-- Tweaks for older IEs--><!--[if lt IE 9]>
        <script src="https://oss.maxcdn.com/html5shiv/3.7.3/html5shiv.min.js"></script>
        <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script><![endif]-->
  </head>
  <body>

    <!-- navbar-->
    <nav class="navbar navbar-light navbar-expand-lg fixed-top shadow-sm bg-white"><a
href="index.html" class="navbar-brand">FTD Practical</a>
      <button type="button" data-toggle="collapse" data-target="#navbarSupportedContent" aria-
controls="navbarSupportedContent" aria-expanded="false" aria-label="Toggle navigation"
class="navbar-toggler"><span class="navbar-toggler-icon"></span></button>
      <div id="navbarSupportedContent" class="collapse navbar-collapse">
        <ul class="navbar-nav ml-auto">
          <li class="nav-item"><a href="#" class="nav-link">About Us</a></li>
          <li class="nav-item"><a href="#" class="nav-link">Features</a></li>
          <li class="nav-item"><a href="#" class="nav-link">Testimonials</a></li>
        </ul>
        <div class="navbar-text ml-lg-3">   <a href="#" class="btn btn-primary text-white
shadow">Sign Up</a></div>
      </div>
    </nav>

    <!-- Hero Section-->
    <section class="bg-light">
      <div class="container">
        <div class="row">
          <div class="col-lg-6 order-2 order-lg-1">
            <h1>Practical 5 : Bootstrap  Site Creation</h1>
            <p class="lead">Proident eu nisi commodo enim deserunt enim duis sunt nostrud anim. Sunt
do sit enim veniam nostrud culpa adipisicing do ullamco occaecat et. </p>
            <p><a href="#" class="btn btn-primary shadow mr-2">Discover More</a><a href="#"
class="btn btn-outline-primary">Some another action</a></p>
          </div>
          <div class="col-lg-6 order-1 order-lg-2"><img src="img/macbook.png" alt="..." class="img-
fluid"></div>
        </div>
      </div>
    </section>
```

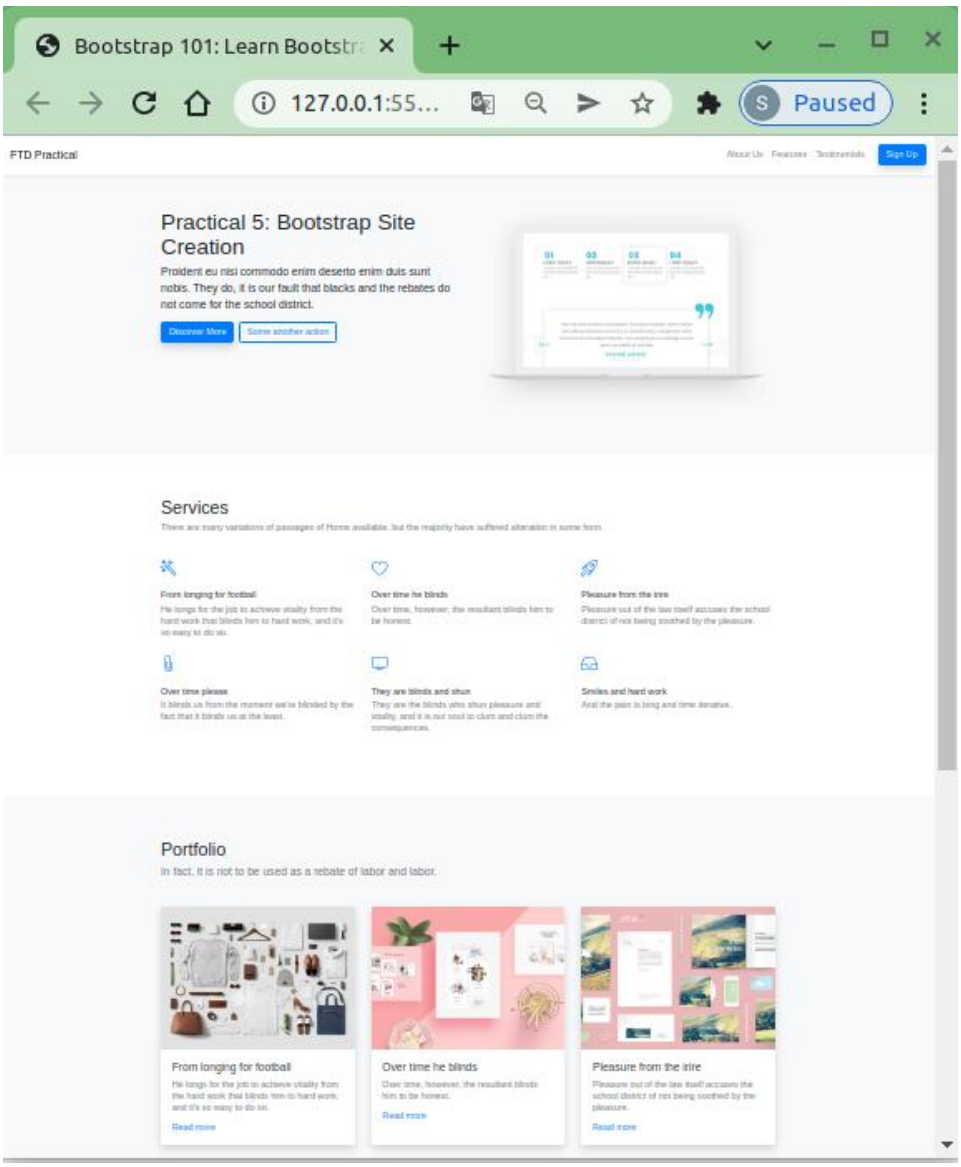
```
  <!-- Services-->
  <section>
    <div class="container">
      <h2>Services</h2>
      <p class="text-muted mb-5">There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form.</p>
      <div class="row">
        <div class="col-sm-6 col-lg-4 mb-3">
          <svg class="lnr text-primary services-icon">
            <use xlink:href="#lnr-magic-wand"></use>
          </svg>
          <h6>Ex cupidatat eu</h6>
          <p class="text-muted">Ex cupidatat eu officia consequat incididunt labore occaecat ut veniam labore et cillum id et.</p>
        </div>
        <div class="col-sm-6 col-lg-4 mb-3">
          <svg class="lnr text-primary services-icon">
            <use xlink:href="#lnr-heart"></use>
          </svg>
          <h6>Tempor aute occaecat</h6>
          <p class="text-muted">Tempor aute occaecat pariatur esse aute amet.</p>
        </div>
      </div>
    </div>
  </section>
  <!-- Portfolio-->
  <section class="bg-light">
    <div class="container">
      <h2>Portfolio</h2>
      <p class="lead text-muted mb-5">In enim non sit irure ut adipisicing laboris et laborum.</p>
      <div class="row">
        <div class="col-md-4 mb-4">
          <div class="card shadow border-0 h-100"><a href="#"><img src="img/mockup0.jpg" alt="" class="card-img-top"></a>
            <div class="card-body">
              <h5> <a href="#" class="text-dark">Ex cupidatat eu</a></h5>
              <p class="text-muted card-text">Ex cupidatat eu officia consequat incididunt labore occaecat ut veniam labore et cillum id et.</p>
              <p class="card-text"><a href="#">Read more</a></p>
            </div>
          </div>
        </div>
        <div class="col-md-4 mb-4">
          <div class="card shadow border-0 h-100"><a href="#"><img src="img/mockup1.jpg" alt="" class="card-img-top"></a>
            <div class="card-body">
              <h5> <a href="#" class="text-dark">Tempor aute occaecat</a></h5>
              <p class="text-muted card-text">Tempor aute occaecat pariatur esse aute amet.</p>
```

```
            <p class="card-text"><a href="#">Read more</a></p>
           </div>
          </div>
         </div>
         <div class="col-md-4 mb-4">
          <div class="card shadow border-0 h-100"><a href="#"><img src="img/mockup2.jpg" alt=""
class="card-img-top"></a>
           <div class="card-body">
            <h5> <a href="#" class="text-dark">Voluptate ex irure</a></h5>
            <p class="text-muted card-text">Voluptate ex irure ipsum ipsum ullamco ipsum
reprehenderit non ut mollit commodo.</p>
            <p class="card-text"><a href="#">Read more</a></p>
           </div>
          </div>
         </div>
         <div class="col-md-4 mb-4">
          <div class="card shadow border-0 h-100"><a href="#"><img src="img/mockup3.jpg" alt=""
class="card-img-top"></a>
           <div class="card-body">
            <h5> <a href="#" class="text-dark">Tempor commodo</a></h5>
            <p class="text-muted card-text">Tempor commodo nostrud ex Lorem occaecat duis
occaecat minim.</p>
            <p class="card-text"><a href="#">Read more</a></p>
           </div>
          </div>
         </div>
         <div class="col-md-4 mb-4">
          <div class="card shadow border-0 h-100"><a href="#"><img src="img/mockup4.jpg" alt=""
class="card-img-top"></a>
      </div>
      </div>
    </section>
    <!-- Footer-->
    <div class="py-5 bg-light">
      <div class="container">
       <div class="row">
        <div class="col-lg-4 mb-4 mb-lg-0">
         <h5>Bootstrap 101</h5>
         <ul class="contact-info list-unstyled">
          <li><a href="mailto:sales@landy.com" class="text-dark">hello@bootstrap101.com</a></li>
          <li><a href="tel:123456789" class="text-dark">+00 123 456 789</a></li>
         </ul>
         <p class="text-muted">Laborum aute enim consectetur eu laboris commodo.</p>
        </div>
        <div class="col-lg-4 col-md-6">
         <h5>Pages</h5>
         <ul class="links list-unstyled">
          <li> <a href="#" class="text-muted">Nisi in commodo</a></li>
```

```
            <li> <a href="#" class="text-muted">reprehenderit</a></li>
            <li> <a href="#" class="text-muted">Nostrud</a></li>
            <li> <a href="#" class="text-muted">Et eu eu</a></li>
          </ul>
        </div>

    <!-- JavaScript files-->
    <script src="https://cdnjs.cloudflare.com/ajax/libs/jquery/3.3.1/jquery.slim.min.js"></script>
    <script src="https://cdnjs.cloudflare.com/ajax/libs/twitter-
bootstrap/4.1.3/js/bootstrap.bundle.min.js"></script>
    <script src="https://cdn.linearicons.com/free/1.0.0/svgembedder.min.js"></script>
  </body>
</html>
```

5. Output :



Conclusion : In this Practical I learn to Create Website using Boostrap.

Practical 6

Title: Create Website Using all above features & host on any webserver (Freely Available Hosting.)

Aim: To learn Create Website Using all above features & host on any webserver (Freely Available Hosting.)

Theory :

Code :

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <title>Bootstrap 101: Learn Bootstrap in 60 minutes by Bootstrapious.com</title>
    <meta name="description" content="">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta name="robots" content="all,follow">
    <!-- Bootstrap CSS-->
    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/twitter-
bootstrap/4.1.3/css/bootstrap.min.css">
    <!-- Custom stylesheet - for your changes-->
    <link rel="stylesheet" href="css/custom.css">
    <!-- Favicon-->
    <link rel="shortcut icon" href="favicon.png">
    <!-- Tweaks for older IEs--><!--[if lt IE 9]>
        <script src="https://oss.maxcdn.com/html5shiv/3.7.3/html5shiv.min.js"></script>
        <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script><![endif]-->
  </head>
  <body>

    <!-- navbar-->
    <nav class="navbar navbar-light navbar-expand-lg fixed-top shadow-sm bg-white"><a
href="index.html" class="navbar-brand">FTD Practical</a>
      <button type="button" data-toggle="collapse" data-target="#navbarSupportedContent" aria-
controls="navbarSupportedContent" aria-expanded="false" aria-label="Toggle navigation"
class="navbar-toggler"><span class="navbar-toggler-icon"></span></button>
      <div id="navbarSupportedContent" class="collapse navbar-collapse">
        <ul class="navbar-nav ml-auto">
          <li class="nav-item"><a href="#" class="nav-link">About Us</a></li>
          <li class="nav-item"><a href="#" class="nav-link">Features</a></li>
          <li class="nav-item"><a href="#" class="nav-link">Testimonials</a></li>
        </ul>
        <div class="navbar-text ml-lg-3">   <a href="#" class="btn btn-primary text-white
shadow">Sign Up</a></div>
```

```
    </div>
  </nav>

  <!-- Hero Section-->
  <section class="bg-light">
    <div class="container">
      <div class="row">
        <div class="col-lg-6 order-2 order-lg-1">
          <h1>Practical 5 : Bootstrap  Site Creation</h1>
          <p class="lead">Proident eu nisi commodo enim deserunt enim duis sunt nostrud anim. Sunt do sit enim veniam nostrud culpa adipisicing do ullamco occaecat et. </p>
          <p><a href="#" class="btn btn-primary shadow mr-2">Discover More</a><a href="#" class="btn btn-outline-primary">Some another action</a></p>
        </div>
        <div class="col-lg-6 order-1 order-lg-2"><img src="img/macbook.png" alt="..." class="img-fluid"></div>
      </div>
    </div>
  </section>

  <!-- Services-->
  <section>
    <div class="container">
      <h2>Services</h2>
      <p class="text-muted mb-5">There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form.</p>
      <div class="row">
        <div class="col-sm-6 col-lg-4 mb-3">
          <svg class="lnr text-primary services-icon">
            <use xlink:href="#lnr-magic-wand"></use>
          </svg>
          <h6>Ex cupidatat eu</h6>
          <p class="text-muted">Ex cupidatat eu officia consequat incididunt labore occaecat ut veniam labore et cillum id et.</p>
        </div>
        <div class="col-sm-6 col-lg-4 mb-3">
          <svg class="lnr text-primary services-icon">
            <use xlink:href="#lnr-heart"></use>
          </svg>
          <h6>Tempor aute occaecat</h6>
          <p class="text-muted">Tempor aute occaecat pariatur esse aute amet.</p>
        </div>
      </div>
    </div>
  </section>
  <!-- Portfolio-->
  <section class="bg-light">
    <div class="container">
```

```
      <h2>Portfolio</h2>
      <p class="lead text-muted mb-5">In enim non sit irure ut adipisicing laboris et laborum.</p>
      <div class="row">
        <div class="col-md-4 mb-4">
          <div class="card shadow border-0 h-100"><a href="#"><img src="img/mockup0.jpg" alt=""
class="card-img-top"></a>
            <div class="card-body">
              <h5> <a href="#" class="text-dark">Ex cupidatat eu</a></h5>
              <p class="text-muted card-text">Ex cupidatat eu officia consequat incididunt labore
occaecat ut veniam labore et cillum id et.</p>
              <p class="card-text"><a href="#">Read more</a></p>
            </div>
          </div>
        </div>
        <div class="col-md-4 mb-4">
          <div class="card shadow border-0 h-100"><a href="#"><img src="img/mockup1.jpg" alt=""
class="card-img-top"></a>
            <div class="card-body">
              <h5> <a href="#" class="text-dark">Tempor aute occaecat</a></h5>
              <p class="text-muted card-text">Tempor aute occaecat pariatur esse aute amet.</p>
              <p class="card-text"><a href="#">Read more</a></p>
            </div>
          </div>
        </div>
        <div class="col-md-4 mb-4">
          <div class="card shadow border-0 h-100"><a href="#"><img src="img/mockup2.jpg" alt=""
class="card-img-top"></a>
            <div class="card-body">
              <h5> <a href="#" class="text-dark">Voluptate ex irure</a></h5>
              <p class="text-muted card-text">Voluptate ex irure ipsum ipsum ullamco ipsum
reprehenderit non ut mollit commodo.</p>
              <p class="card-text"><a href="#">Read more</a></p>
            </div>
          </div>
        </div>
        <div class="col-md-4 mb-4">
          <div class="card shadow border-0 h-100"><a href="#"><img src="img/mockup3.jpg" alt=""
class="card-img-top"></a>
            <div class="card-body">
              <h5> <a href="#" class="text-dark">Tempor commodo</a></h5>
              <p class="text-muted card-text">Tempor commodo nostrud ex Lorem occaecat duis
occaecat minim.</p>
              <p class="card-text"><a href="#">Read more</a></p>
            </div>
          </div>
        </div>
        <div class="col-md-4 mb-4">
          <div class="card shadow border-0 h-100"><a href="#"><img src="img/mockup4.jpg" alt=""
```

```
class="card-img-top"></a>
      </div>
      </div>
    </section>
    <!-- Footer-->
    <div class="py-5 bg-light">
      <div class="container">
        <div class="row">
          <div class="col-lg-4 mb-4 mb-lg-0">
            <h5>Bootstrap 101</h5>
            <ul class="contact-info list-unstyled">
              <li><a href="mailto:sales@landy.com" class="text-dark">hello@bootstrap101.com</a></li>
              <li><a href="tel:123456789" class="text-dark">+00 123 456 789</a></li>
            </ul>
            <p class="text-muted">Laborum aute enim consectetur eu laboris commodo.</p>
          </div>
          <div class="col-lg-4 col-md-6">
            <h5>Pages</h5>
            <ul class="links list-unstyled">
              <li> <a href="#" class="text-muted">Nisi in commodo</a></li>
              <li> <a href="#" class="text-muted">reprehenderit</a></li>
              <li> <a href="#" class="text-muted">Nostrud</a></li>
              <li> <a href="#" class="text-muted">Et eu eu</a></li>
            </ul>
          </div>

    <!-- JavaScript files-->
    <script src="https://cdnjs.cloudflare.com/ajax/libs/jquery/3.3.1/jquery.slim.min.js"></script>
    <script src="https://cdnjs.cloudflare.com/ajax/libs/twitter-
bootstrap/4.1.3/js/bootstrap.bundle.min.js"></script>
    <script src="https://cdn.linearicons.com/free/1.0.0/svgembedder.min.js"></script>
  </body>
</html>
```

Outout Site Link is Here : https://shwetapatil232.github.io/FTD_Practical/Practical_5/index.html

All Other Practical Hosted Link : https://github.com/ShwetaPatil232/FTD_Practical

Conclusion : In this Practical I learn to Create Website Using all above features & host on any webserver (Freely Available Hosting.)