



GRASPEAR SOLUTIONS PRIVATE LIMITED

MADURAI - 625014

An Internship Report

Submitted by

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Software Development – Web Technology Intern

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Submitted for the degree of

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Department of Information Technology

VELAMMAL COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution Affiliated To Anna University)

MADURAI – 625 009

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About Internship

Name	Jeyakumar N K
Register No	913121205038
Degree	B.Tech.
Department	Information Technology
Year/ Sem	II/ III
College Name	Velammal College of Engineering & Technology
Employment Type	Internship
Area of Interest	Software Development
Company Name	Graspear Solutions Private Limited
Location	8-7-8 Vaigai Nadhi Street, Madurai - 625014
Mode	On-site (Offline mode)
Start Date	28/12/2022
End Date	13/01/2023
Total No of Days	17
Total Working Days	15
Working Hours	09:30 AM to 05:30 PM
Total Working Hours	122:15 Hrs
Self Learning/	107:15 Hrs
Implementation	
Meeting	02:00 Hrs
Lunch & Break	13:00 Hrs

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Graspear Solutions Private Limited, Madurai.**1. HTML, CSS, Angular Concepts****Summary of topics learned & Work done:**

- ❖ Today I have given with a box problem, for which I successfully provided an approach and used C programming to solve it.
- ❖ Learnt some concepts of HTML & CSS
- ❖ Introduction to Angular framework.

Here are some examples of what I've learned to illustrate my points.

1.1 HTML: (Hyper Text Markup Language)

To start learning HTML I just learned about HTML tags

HTML tags are classified in to 2 types:

1. Paired tags,
2. Unpaired tags.

Most of the HTML tags are paired except few. Some of the unpaired tags are,

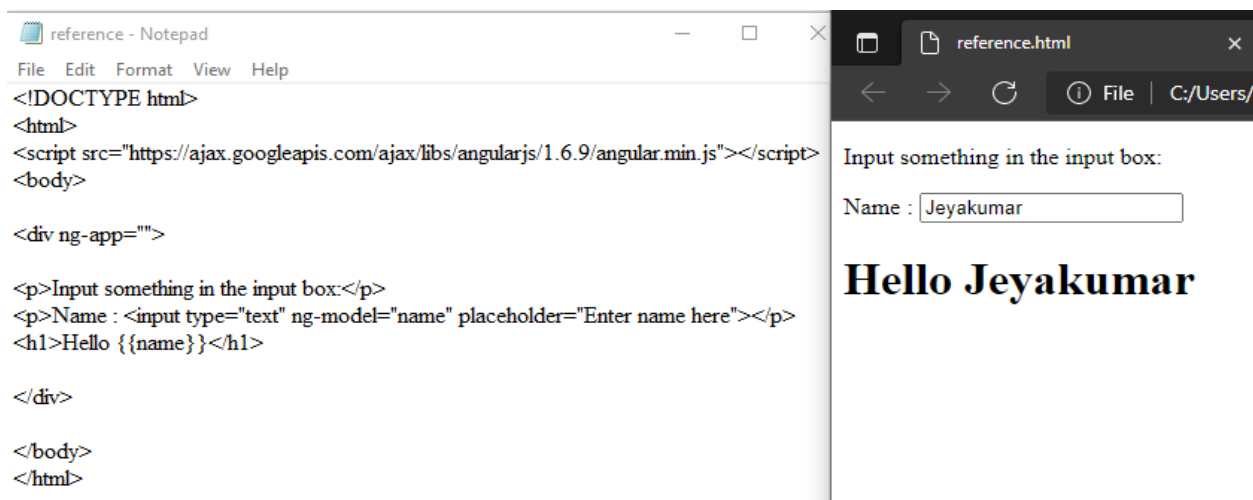
- <!DOCTYPE html> - To specify about the document type.
-
 - break tag
- <hr> - horizontal rule.

Important tags which we often use in HTML are as follows.

HTML Tags	Function/ Used for/ Description
<a>	Creates a hyperlink
<audio>	To embed sound content
	To make a text bold.
<body>	To define the body section

 	To apply single line break
<button>	To represent a clickable button
<canvas>	To provide a graphics space within a web document
<caption>	To define a caption for a table
<center>	To used to align the content in center
	It defines the font, size, color, and face for the content
<footer>	Defines the footer section of a webpage
<form>	To define an HTML form
<h1> to <h6>	Defines headings for a document from level 1 to level 6
<head>	It defines the head section of an HTML document
<header>	It defines the header of a section or webpage
<hr>	To apply break between paragraph-level elements
<html>	Represents root of an HTML document
<input>	Defines an input field within an HTML form
	To insert an image within an HTML document
<label>	Defines a text label for the input field of form
<link>	Relationship between current document and an external resource
	To represent items in list
<mark>	It represents a highlighted text
<map>	Defines an image map with active areas
<option>	Defines an option in a drop-down list
<output>	Defines the result of a calculation
	Defines an ordered list
<p>	Defines a paragraph
<script>	Defines a client-side script
<section>	Defines a section in a document
<select>	Defines a drop-down list
<small>	Defines smaller text

	Defines a section in a document
<sub>	Defines subscripted text
<style>	Defines style information for a document
<td>	Defines a cell in a table
<thead>	Groups the header content in a table
<title>	Defines a title for the document
<tr>	Defines a row in a table
<th>	Defines a header cell in a table
<time>	Defines
<table>	Defines a table
	Defines an unordered list
<video>	Defines embedded video content
<!-- -->	To write a Comment line
<!DOCTYPE>	To specify about the document type

Table 1.1.1: Important HTML tags**Fig 1.1.1: HTML implementation of placeholder & ng-model**

1.2 CSS: (Cascading Style Sheets)

A style sheet language used for describing the presentation of a document written in a markup language such as HTML.

Div classes:

- The <div> tag defines a division or a section in an HTML document.
- The <div> tag is used as a container for HTML elements - which is then **styled with CSS**.
- The <div> tag is easily styled by using the class or id attribute.

Syntax:

```
<div>
```

```
<!--content of div-->
```

```
</div>
```



Fig 1.2.1: Div implementation in HTML with CSS Styles

1.3 Introduction to Angular:

- Angular is a TypeScript-based, free and open-source web application framework led by the Angular Team at Google.
- It is an application-design framework and development platform for creating efficient and sophisticated single-page apps.
- Angular addresses many solutions, with respect to front-end web development.

Node.js:

- Node.js is an open source server environment and free.
- Node.js is a back-end JavaScript runtime environment
- Node.js runs on various platforms (Windows, Linux, Unix, Mac OS X, etc.)
- Node.js uses JavaScript on the server
- Using Node.js we can able to make many queries at a time.
- Node.js uses asynchronous programming.

Handling of file request by node.js:

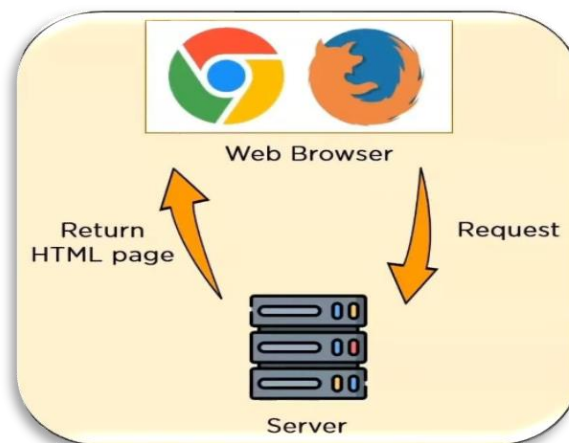


Fig 1.3.1: Handling of request by Node.js

1. Sends the task to the computer's file system.
2. Ready to handle the next request.
3. When the file system has opened and read the file, the server returns the content to the client.

Types of charts that can be designed using chart.js:

- 1) Line chart
- 2) Bar chart
- 3) Column chart
- 4) Pie & Doughnut chart
- 5) Area & Range chart
- 6) Bubble & Scatter
- 7) Funnel & Pyramid chart
- 8) Financial & advanced
- 9) Combinational
- 10) Dynamic chart

References:

- ✓ <https://www.w3schools.com/>
- ✓ <https://www.geeksforgeeks.org/>
- ✓ <https://www.chartjs.org/>
- ✓ <https://angular.io/>
- ✓ <https://en.wikipedia.org/wiki/Node.js>

This document was prepared using the notes that I had taken while learning these topics.

Graspear Solutions Private Limited, Madurai.**2. Charts, Installation setup, First Project****Summary of topics learned & Work done:**

- ❖ Installation of angular, nodeJs setup, Git download & installation
- ❖ How to create angular projects?
- ❖ How to design a chart?

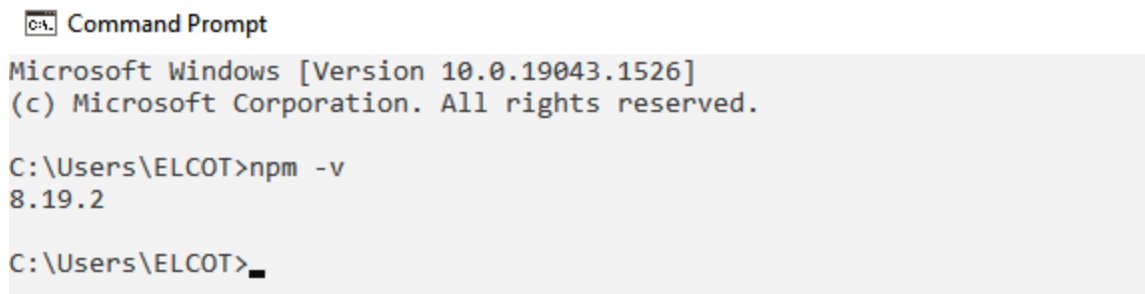
2.1 Installation of Angular:

Step 1: Install **NodeJS**. Download the node.js installer for Windows and install it.

Source: <https://nodejs.org/en/download/>

Step 2: To check the installed version of Node.js, open the command prompt.

Step 3: Type the “*npm -v*” command to check the Node.js installation and version.



```
Command Prompt
Microsoft Windows [Version 10.0.19043.1526]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ELCOT>npm -v
8.19.2

C:\Users\ELCOT>
```

Fig 2.1.1: Version of Node.js

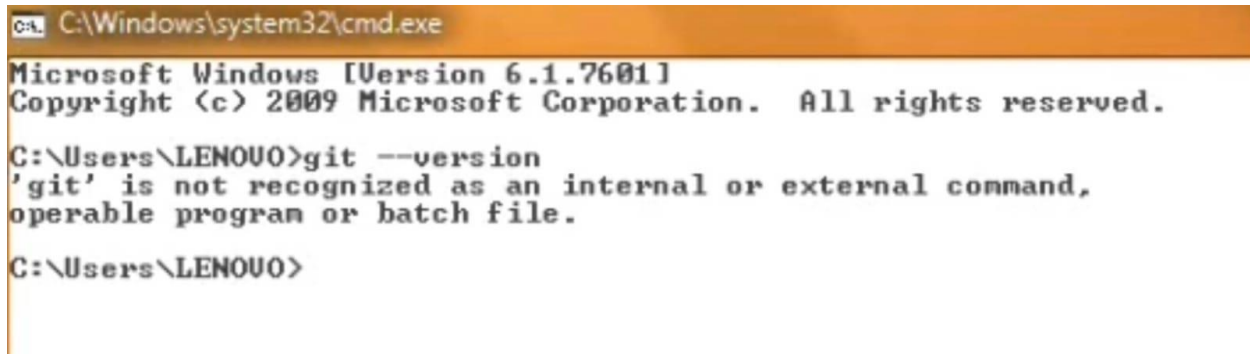
Step 4: Install **TypeScript**. It can be installed from the following address

<https://www.npmjs.com/package/typescript>

Step 5: Install Angular CLI (Angular command line interface). Open the link

<https://cli.angular.io/> to install Angular CLI

Before proceeding further we need to check whether Git is installed in our device or not. If it is not then we need to do that so as to overcome the following error command.(Fig 2.1.2)



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\LENOVO>git --version
'git' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\LENOVO>
```

Fig 2.1.2: Git not installed problem

Steps involved in installation of Git:

Step 1: Open any web browser and search for git download

Step 2: Then get inside official git download web page (<https://git-scm.com/downloads>)

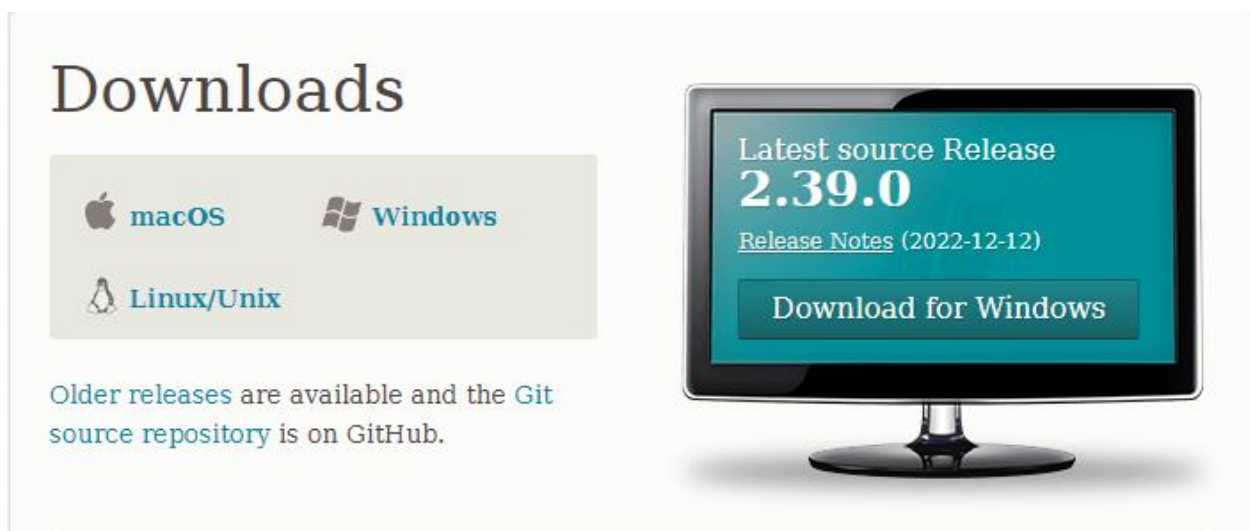


Fig 2.1.3: Git Download

Step 3: Click on the download button based on our system requirement (32/64 bit)

Step 4: Afterwards, install the same. Then open command prompt

Step 5: Before starting we need to make sure that whether we have our own git hub account or not. If not then create a new one.

Step 6: After creating a git hub account, do the following as shown in the figure below.

(Fig 2.1.4 & 2.1.5)

```

SSPL-LP-DNS-YT0+Simplilearn@SSPL-LP-DNS-YT01 MINGW64 ~ (master)
$ git --version
git version 2.19.1.windows.1

SSPL-LP-DNS-YT0+Simplilearn@SSPL-LP-DNS-YT01 MINGW64 ~ (master)
$ git help config

SSPL-LP-DNS-YT0+Simplilearn@SSPL-LP-DNS-YT01 MINGW64 ~ (master)
$ git config --help

SSPL-LP-DNS-YT0+Simplilearn@SSPL-LP-DNS-YT01 MINGW64 ~ (master)
$ mkdir test

SSPL-LP-DNS-YT0+Simplilearn@SSPL-LP-DNS-YT01 MINGW64 ~ (master)
$ cd test

SSPL-LP-DNS-YT0+Simplilearn@SSPL-LP-DNS-YT01 MINGW64 ~/test (master)
$ git init
Initialized empty Git repository in C:/Users/Simplilearn/test/.git/

SSPL-LP-DNS-YT0+Simplilearn@SSPL-LP-DNS-YT01 MINGW64 ~/test (master)
$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)

    demo.txt

nothing added to commit but untracked files present (use "git add" to track)

SSPL-LP-DNS-YT0+Simplilearn@SSPL-LP-DNS-YT01 MINGW64 ~/test (master)
$ git add demo.txt

SSPL-LP-DNS-YT0+Simplilearn@SSPL-LP-DNS-YT01 MINGW64 ~/test (master)
$ git commit -m "committing a text file"
[master (root-commit) ba65497] committing a text file
 1 file changed, 1 insertion(+)
 create mode 100644 demo.txt

SSPL-LP-DNS-YT0+Simplilearn@SSPL-LP-DNS-YT01 MINGW64 ~/test (master)
$

```

Fig 2.1.4: Git setup instructions

```

SSPL-LP-DNS-YT0+Simplilearn@SSPL-LP-DNS-YT01 MINGW64 ~/test (master)
$ git config --global user.username simplilearn-github

SSPL-LP-DNS-YT0+Simplilearn@SSPL-LP-DNS-YT01 MINGW64 ~/test (master)
$ git remote add origin https://github.com/simplilearn-github/test_demo.git

SSPL-LP-DNS-YT0+Simplilearn@SSPL-LP-DNS-YT01 MINGW64 ~/test (master)
$ git push origin master
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 238 bytes | 79.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
remote:
remote: Create a pull request for 'master' on GitHub by visiting:
remote:   https://github.com/simplilearn-github/test_demo/pull/new/master
remote:
To https://github.com/simplilearn-github/test_demo.git
 * [new branch]      master -> master

SSPL-LP-DNS-YT0+Simplilearn@SSPL-LP-DNS-YT01 MINGW64 ~/test (master)
$

```

Fig 2.1.5: Complete Git Setup Instructions

Step 7: And its over, under our newly created git hub account we can able to find local file (say demo.txt) has been pushed in to the repository.

Step 8: Surely we will not receive that error message again once the above process has been over.

```

Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\LENOVO>git --version
git version 2.27.0.windows.1

C:\Users\LENOVO>_

```

Fig 2.1.6: Git installed successfully

2.2 Steps involved in creation of new project:

Step 1: `npm install -g @angular/cli`



Fig 2.2.1: Installing node package manager

Step 2: `ng new my-first-angular-project` where, my-first-angular-project be the project name it can be any name of our wish.

Step 3: Write `ng serve` to compile the project

Step 4: Then open the compiled project in web browser to see the output of our project.

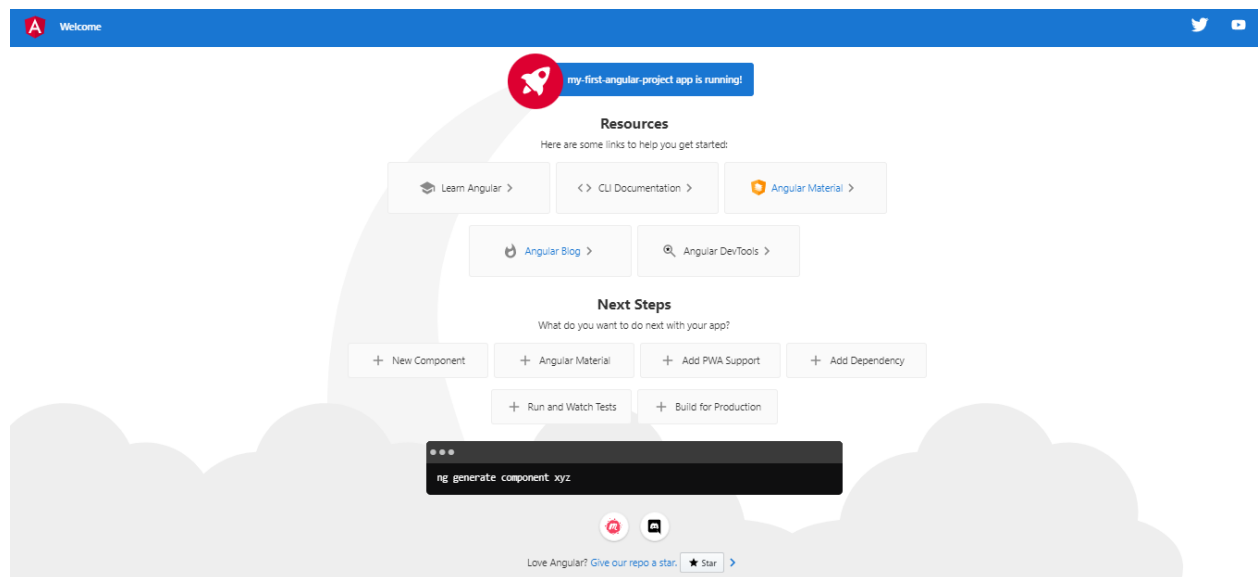


Fig 2.2.2: After compilation, our new project would look like

Creating charts:

Step 1: Install the node package manager `npm install -g @angular/cli`

Step 2: Create a new project `ng new my-chart` where, my-chart be the project name it can be any name of our wish.

Step 3: Write `npm install chart.js` to install chart components in our project.

Step 4: Write `ng serve` to compile the project

Step 5: Then open the compiled project in web browser to see the output of our project.

Step 6: After successful creation of project, start coding for the respective type of chart to be reflected in the output.

Step 7: Lets see how it can be done in next documentation.

References:

- ✓ <https://nodejs.org/en/download/>
- ✓ <https://www.npmjs.com/package/typescript>
- ✓ <https://cli.angular.io/>
- ✓ <https://git-scm.com/downloads>
- ✓ <https://www.youtube.com/watch?v=2j7fD92g-gE&feature=youtu.be>

Graspear Solutions Private Limited, Madurai.**3. Implementation of different Charts****Summary of topics learned & Work done:**

- ❖ How to design SPA?
- ❖ Implementation of different charts

Implementation of a chart:**Step 1: Define classes for div**

- To develop more than one chart in a page, we need to use nested divs (divisions)
- For that we are going to create 2 classes namely chartCard and chartBox.
- This can be created inside style tag within header section (or) app.component.css folder of our new project using the concept of CSS.

S.No	Class Name	CSS Code	Explanation
1	chartCard	<pre>.chartCard { width: 100vw; height: calc(100vh - 40px); background: rgba(255, 255, 255, 0.986); display: flex; align-items: center; justify-content: center; }</pre>	This chartCard class defines that the element will have a width of 100% of the viewport width, a height of 100% of the viewport height minus 40 pixels, a white background with a slight transparency, and the elements within it will be centered. And both are aligned horizontally and vertically using flexbox.
2	chartBox	<pre>.chartBox { width: 700px;</pre>	This CSS code defines a class called "chartBox" which sets the width of

		padding: 20px; border-radius: 20px; border: solid 3px rgba(54, 162, 235, 1); background: white; }	an element to 700px, adds 20px of padding, sets a border-radius of 20px, a solid border of 3px with a blue color (rgba(54, 162, 235, 1)), and a white background color.
--	--	---	---

Table 3.1: CSS Classes**Step 2: Create an empty container (div)**

```

<div class="chartCard">    //CSS Classes are called here. (Table 3.1)

<div class="chartBox">

<canvas id="myChart"></canvas> // canvas is a rectangular area has no border & content

</div>

</div>

```

Step 3: Setup Data, Label, Colour for the chart

```

//setup block

const data = {

  labels: ['Sabretooth', 'Omega Red', 'Proto-Goblin', 'Pyro', 'Moonstone', 'Loki', 'Hela',
    'Abraxas', 'Ajax', 'Lady Deathstrike', 'Ammo', 'Kraven the Hunter', 'Diamondback',
    'Cottonmouth', 'Kraven II', 'Walrus', 'Mister Sinister', 'Morlun', 'Mephisto', 'Black
    Abbott'],    //X axis data

  datasets: [{

    label: 'Height of super heros',

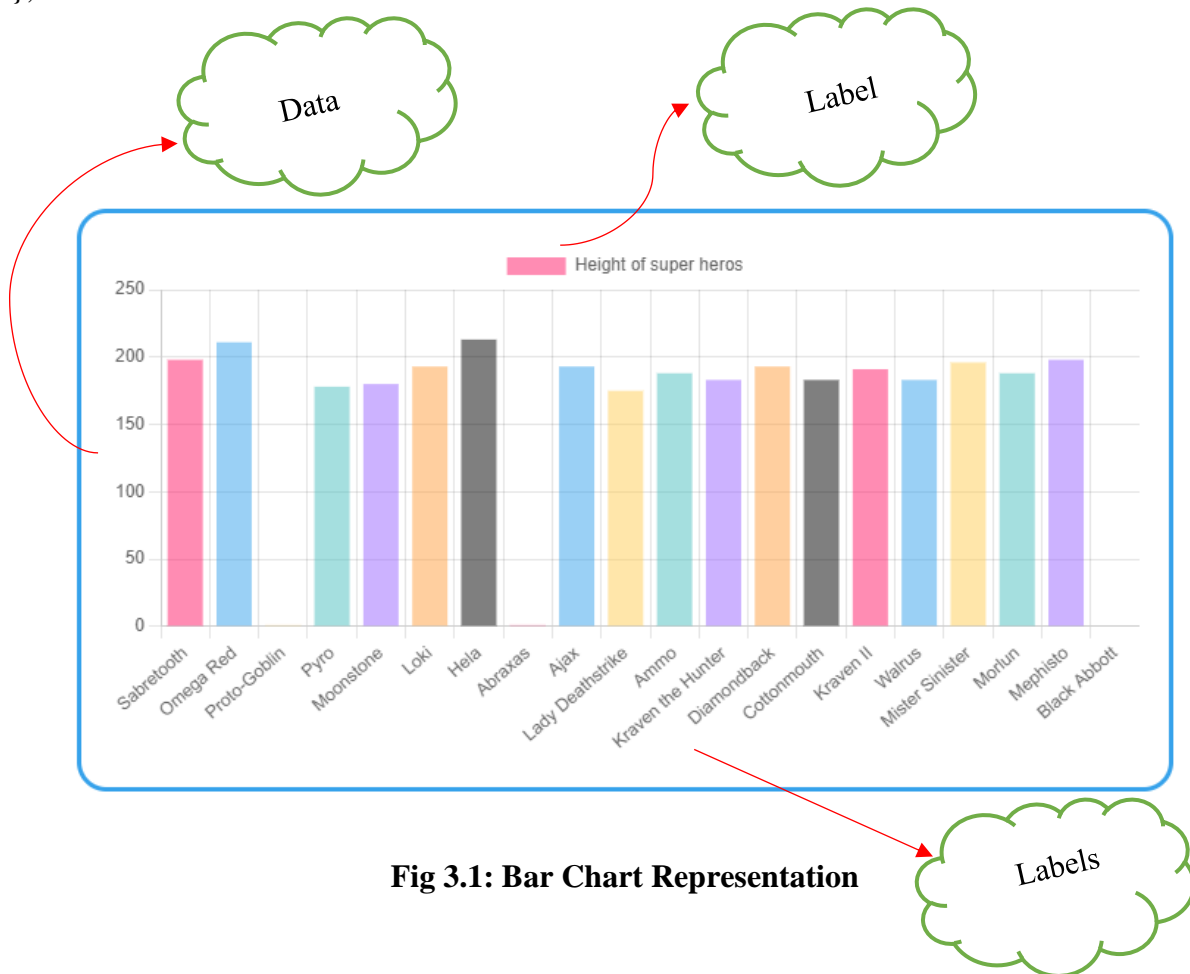
    data: [198,211,1,178,180,193,213,1,193,175,188,183,193,183,191,183,196,188,198],
    //Y axis data

```

```

backgroundColor: [
  'rgba(677, 26, 104, 0.5)'
],
borderColor: [
  'blue'
],
borderWidth: 1 // Border width determines how thick the border should be.
}
]
};

```



Step 4: Configure the type of chart

```
//config block
const config = {
  type: 'bar',    // bar chart
  data,          // this data will be fetched from step 3
  options: {
    scales: {
      y: {        //bar and line charts have scales but not pie chart
        beginAtZero: true
      }
    }
  }
};
```

Step 5: Create chart object

```
// render init block
const myChart = new Chart(
  document.getElementById('myChart'),
  config
);
```

- This code creates a new Chart object using the Chart.js library. It uses the element with the id "myChart" as the container for the chart, and the config object as the configuration for the chart.
- Thereby following these 5 steps we can implement charts in angular. And the output will appear as shown in the figure 3.1.
- In the similar way the other graphs such as line, pie, combinational, pyramid, area can be implemented.

- A small difference is that, we need to change the name of data and config because it must be unique for each and every charts.
- In case of pie chart, it is not necessary to mention scales in the config block of our code.
- So if we follow the same procedure we will get same results as shown in the figure 3.2 & 3.3 for line and pie charts.

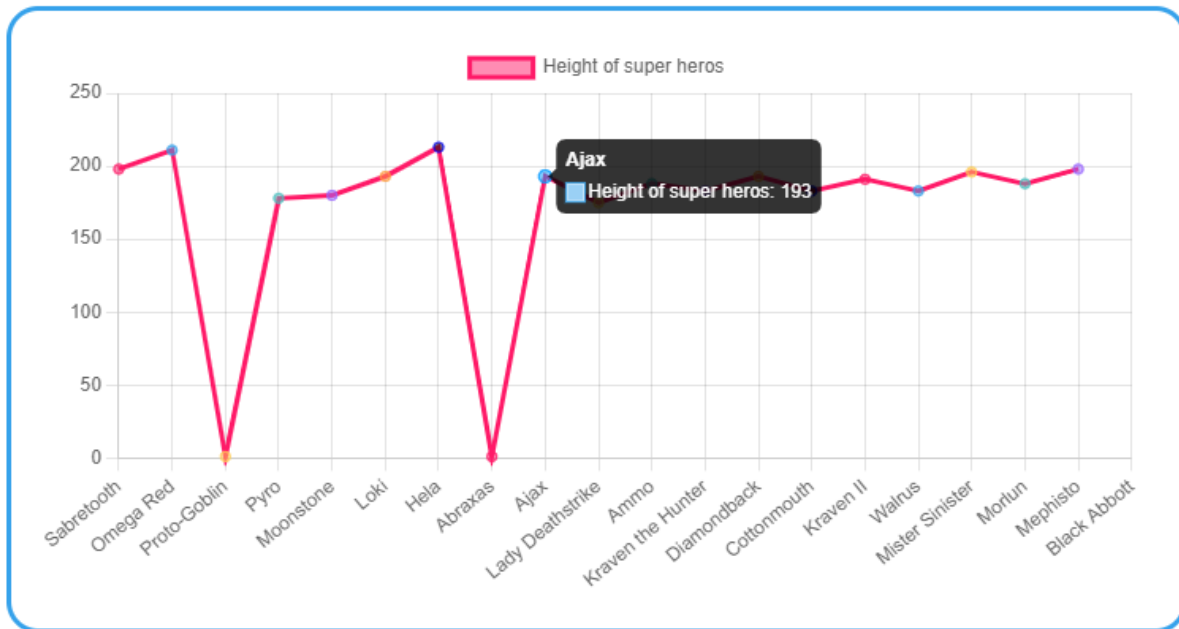


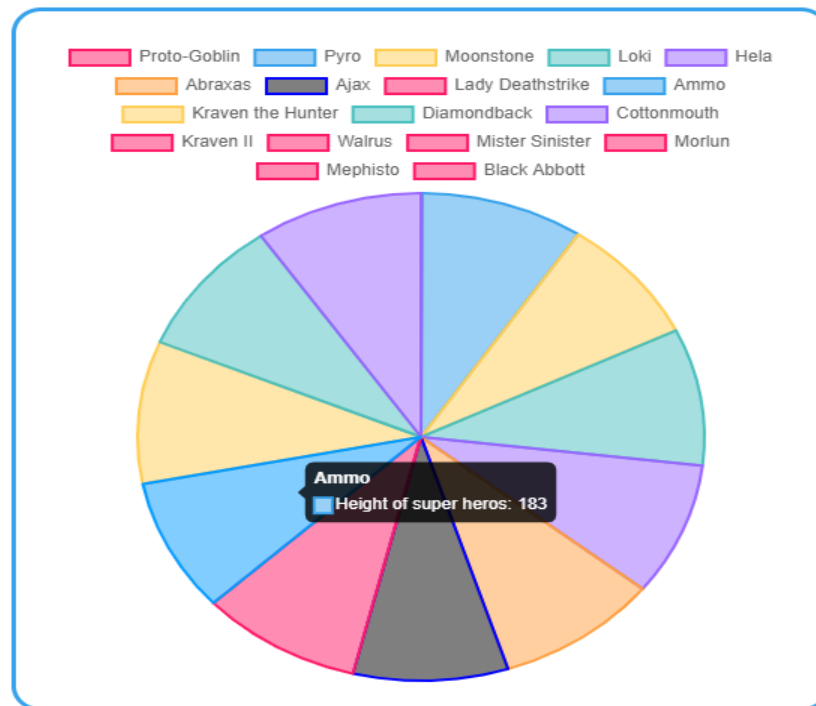
Fig 3.2: Line Chart Representation

Here an example for **Pie chart implementation**:

```
<div class="chartCard">
<div class="chartBox">
<canvas id="PieChart"></canvas>
</div>
</div>
```

SETUP BLOCK	CONFIG BLOCK	RENDER BLOCK
<pre>const datapie = { labels: ['Proto-Goblin', 'Pyro', 'Moonstone', 'Loki', 'Hela', 'Abraxas',</pre>	<pre>const configpie = {</pre>	<pre>const myChart1 = new Chart(document.getElementById('myChart1'),</pre>

<pre> 'Ajax', 'Lady Deathstrike', 'Ammo', 'Kraven the Hunter'], datasets: [{ label: 'Height of super heros', data: [1,193,175,188,183,193,83,91,183,196], backgroundColor: ['rgba(677, 26, 104, 0.5)'], borderColor: ['rgba(255, 159, 64, 1)'], borderWidth: 2 }] }; </pre>	<pre> type: 'pie', data: datapie, options: { scales: { } } }; </pre>	<pre> configpie); </pre>
---	--	---------------------------

Table 3.2: Pie Chart Code**Fig 3.3: Pie Chart Representation****References:**

- ✓ <https://www.mindbowser.com/implementing-different-types-of-charts-in-angular/>
- ✓ <https://edupala.com/how-to-use-angular-chartjs/>
- ✓ <https://angular-templates.io/tutorials/about/angular-charts>
- ✓ <https://www.chartjs3.com/docs/chart/getting-started/>

Graspear Solutions Private Limited, Madurai.

4. Super Heroes Dashboard

Summary of topics learned & Work done:

- ❖ Created Super Heroes Dashboard using certain controlling features like

- ✚ Border Width
- ✚ Changing colours of the chart
- ✚ Selecting a specific chart among different charts.

Super Heroes Dashboard:

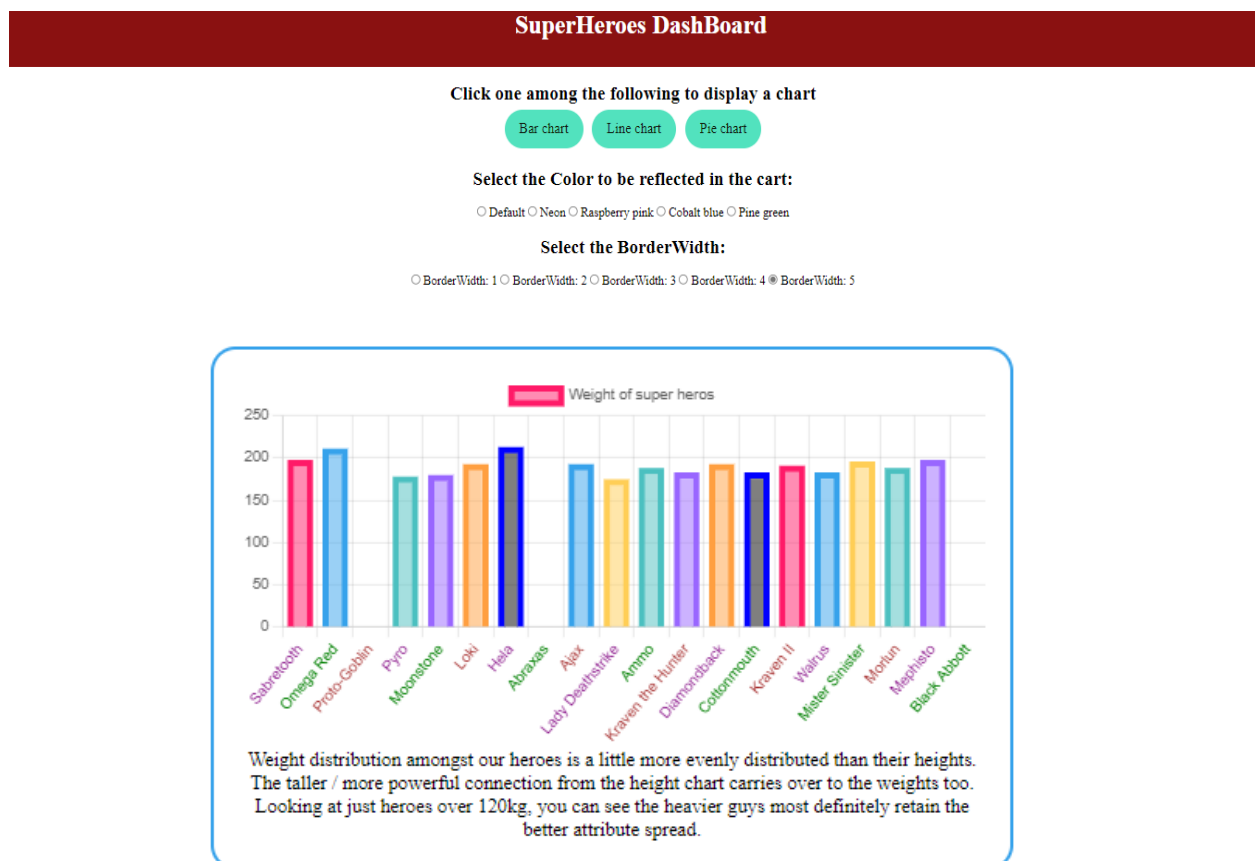


Fig 4.1: An overview of Super Heroes Dashboard

Border Width:**HTML**

```
<input type="radio" value="borderWidth1" onchange="changePalette(this)" name="number">
```

BorderWidth: 1

```
<input type="radio" value="borderWidth2" onchange="changePalette(this)" name="number">
```

BorderWidth: 2

```
<input type="radio" value="borderWidth3" onchange="changePalette(this)" name="number">
```

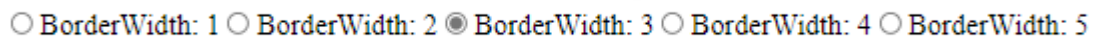
BorderWidth: 3

```
<input type="radio" value="borderWidth4" onchange="changePalette(this)" name="number">
```

BorderWidth: 4

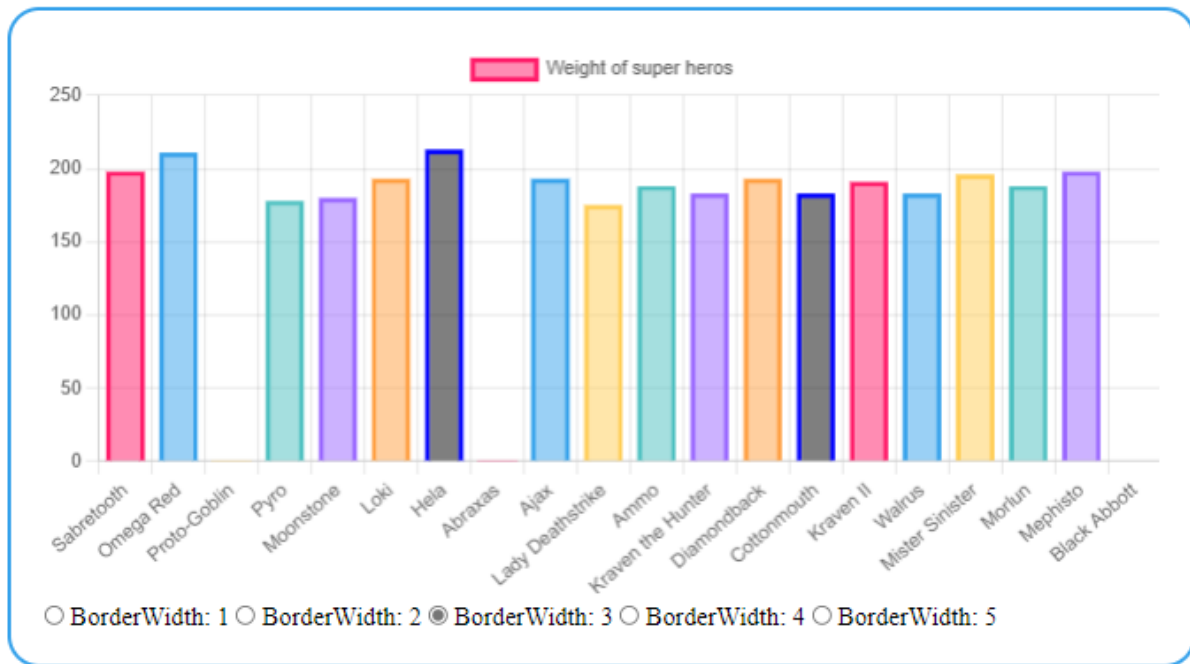
```
<input type="radio" value="borderWidth5" onchange="changePalette(this)" name="number">
```

BorderWidth: 5


Fig 4.2: Radio Buttons to control Border Width of charts**Explanation:**

The **input** is used to get input directly from the user and the type is '**radio**' which means, it is a radio button so user can able to select only one input at a time. The value= **borderWidth** determines the border width of the chart based on the user input (i.e.) if the user input is BorderWidth: 3 then the value will be stored as 'borderWidth3'. onchange determines what to be changed when the button clicks. It is associated with a function call **changePalette()** without this function these buttons are dummy (useless). name = '**number**' nails only numeric value. At last, the **BorderWidth** is the button name which will be printed as such in the output.

SCRIPT	
<pre>function changePalette(palette){ console.log(palette.value) let number; if(palette.value === 'borderWidth1'){ number = ['1']; }; if(palette.value === 'borderWidth2'){ number = ['2']; }; if(palette.value === 'borderWidth3'){ number = ['3']; }; if(palette.value === 'borderWidth4'){ number = ['4']; }; }</pre>	<pre>}; if(palette.value === 'borderWidth5'){ number = ['5']; }; console.table(number) myChart.config.data.datasets[0].borderWidth = number; // bar chart myChart.update(); myChart1.config.data.datasets[0].borderWidth = number; // Pie chart myChart1.update(); myChart2.config.data.datasets[0].borderWidth = number; // Line chart myChart2.update(); }</pre>
<p><u>Explanation:</u></p> <ul style="list-style-type: none"> • This is a function which is going to determine how much pixels the BorderWidth needs to be altered. The user input will be scrutinized using if conditional statements. Based on the results of if conditional statements, border width will be determined by passing the resultant value of if conditional statement to console.table() function. • After that, update() function in myChart.update() is used to update the chart to currently altered border width. Where, myChart refer to name of the chart. Here I used myChart for bar chart. So this will update the border width of bar chart to 3 pixels. 	

OUTPUT**Fig 4.3: Radio Buttons to control Border Width of Bar Chart****Selecting a Chart :****HTML**

<h2> Click one among the following to display a chart</h2>

<button class="button" onclick="chartType('bar')"> Bar chart</button>

<button class="button" onclick="chartType('line')"> Line chart</button>

<button class="button" onclick="chartType('pie')">Pie chart</button>

Click one among the following to display a chart

Bar chart

Line chart

Pie chart

Fig 4.4: Buttons to Select charts

Explanation:

This HTML code creates three buttons with the class **button**, each with their own unique label: "Bar chart", "Line chart" and "Pie chart". Each button also has an **onclick** attribute that triggers a function called **chartType** with an argument of either "bar", "line" or "pie" respectively. When clicked, these buttons will likely call the function chartType and pass the corresponding string to it. The function chartType will then execute some code that will change the type of chart to be displayed on the page.

CSS

```
.button{
  Background-color: rgb(82, 226, 190);
  border: none;
  Border-radius: 25px;
  Color: rgb(16, 31, 16);
  Padding: 13px 20px;
  text-align: center;
  font-size: 18px;
  margin: 6px 4px;
  Cursor: pointer;
}
```

Explanation:

This is CSS code that defines the styling for a button element. The button has a background color of rgb(82, 226, 190), no border, a border radius of 25px, a text colour of rgb(16, 31, 16) [Light Green], padding of 13px 20px, centered text, a font size of 18px, margins of 6px 4px and a cursor of pointer.

SCRIPT

```
function chartType(type){
  myChart2.config.type = type    // here myChart2 refers to line chart
  myChart2.update();
};
```

Explanation:

This function updates the type of a chart for "myChart2" based on the input parameter "type". The function sets the "config.type" property of the chart to the value of the "type" parameter, and then calls the "update" method on the chart to apply the changes.

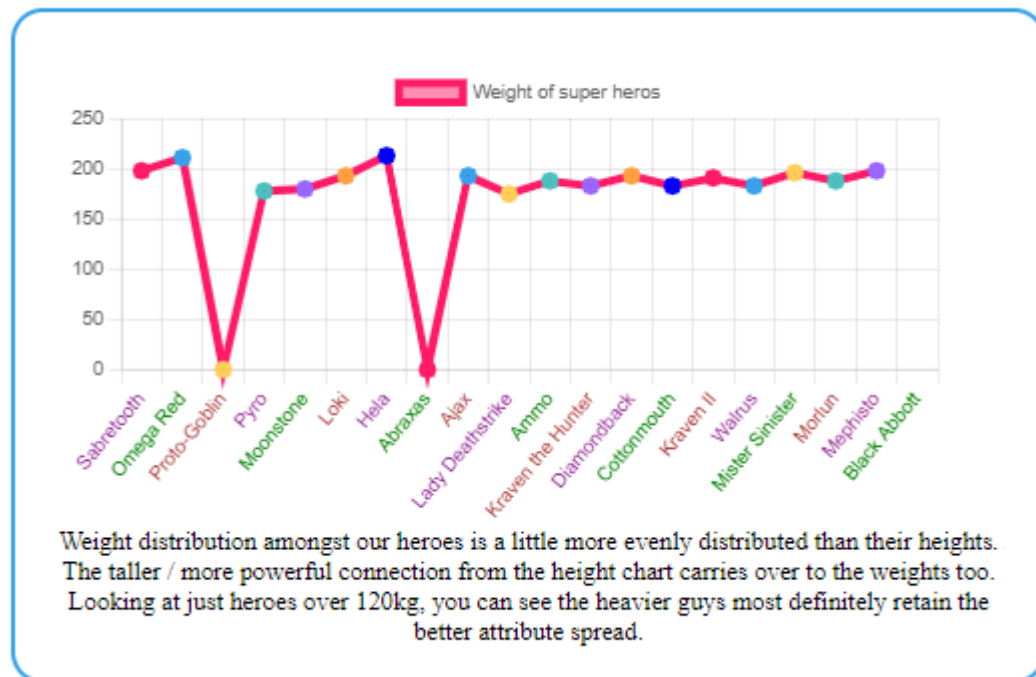
OUTPUT

Fig 4.5: Buttons to select one among different charts (Line chart is selected)

Changing colours of a chart**HTML**

```
<input type="radio" value="default" onchange="changePalette1(this)" name="colours"> Default
<input type="radio" value="neon" onchange="changePalette1(this)" name="colours"> Neon
<input type="radio" value="Raspberry pink" onchange="changePalette1(this)" name="colours">
Raspberry pink
```

```
<input type="radio" value="Cobalt blue" onchange="changePalette1(this)" name="colours">
Cobalt blue
<input type="radio" value="Pine green" onchange="changePalette1(this)" name="colours"> Pine
green
```

Select the Color to be reflected in the cart:

☐ Default ☐ Neon ☒ Raspberry pink ☐ Cobalt blue ☐ Pine green

Fig 4.6: Radio Buttons to change colours of charts

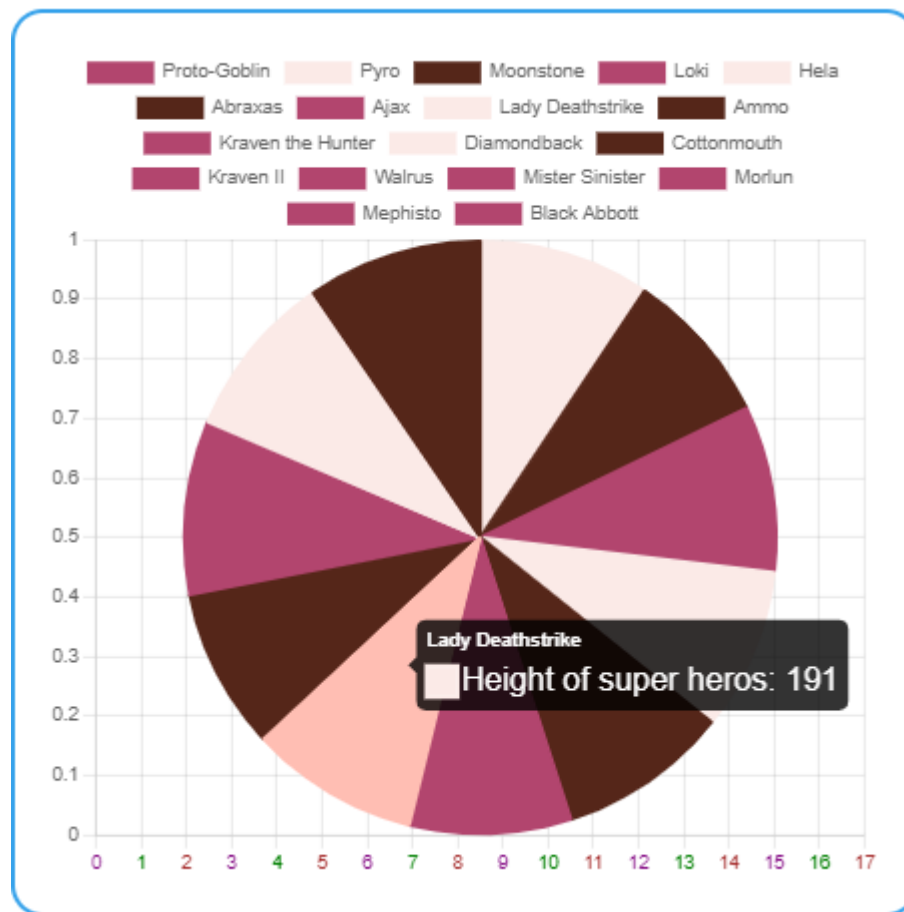
Explanation:

The **input** is used to get input directly from the user and the type is '**radio**' which means, it is a radio button so user can able to select only one input at a time. The value= "colour_name" determines the colour of the chart based on the user input (i.e.) if the user input is Raspberry pink then the value will be stored as 'Raspberry pink'. onchange determines what to be changed when the button clicks. It is associated with a function call **changePalette1()** without this function these buttons are dummy (useless). name = 'colours' nails colour of the chart. At last, the 'Colour_Name' (written after the tag) is the button name which will be printed as such in the output.

SCRIPT

<pre>function changePalette1(palette){ console.log(palette.value) let colours; if(palette.value === 'default'){ colours = ['rgba(255, 26, 104, 1)', 'rgba(54, 162, 235, 1)', 'rgba(255, 206, 86, 1)', 'rgba(75, 192, 192, 1)', 'rgba(153, 102, 255, 1)', 'rgba(255, 159, 64, 1)', 'rgba(0, 0, 0, 1)'];</pre>	<pre>if(palette.value === 'Raspberry pink'){ colours = ['#B2456E', '#FBEAE7', '#552619']; }; if(palette.value === 'Cobalt blue'){ colours = ['#CADCFD', '#8AB6F9', '#00246B']; }; if(palette.value === 'Pine green'){ colours = ['#EDF4F2', '#7C8363', '#31473A'];</pre>
--	--

<pre>}; if(palette.value === 'neon'){ colours = ['rgb(71, 33, 131)','rgb(75, 86, 210)','rgb(130, 195, 236)','rgb(241, 246, 245)'] }; };</pre>	<pre>}; console.table(colours) myChart1.config.data.datasets[0].backgroundColor= colours; myChart1.config.data.datasets[0].borderColor= colours; // myChart1 -> Pie Chart myChart1.update(); }</pre>
<p><u>Explanation:</u></p> <ul style="list-style-type: none"> • This is a function which is going to determine which colour to be reflected in the console for our charts. The user input will be scrutinized using if conditional statements. Based on the results of if conditional statements, colour will be determined by passing the resultant value of if conditional statement to console.table() function. • After that, update() function in myChart1.update() is used to update the chart to newly/ currently altered colour. Where, myChart1 refers to name of the chart. Here I used myChart1 for pie chart. So it will update the colour of pie chart to Raspberry pink. 	

OUTPUT**Fig 4.7: Radio Buttons to change colour of Pie Chart****References:**

- ✓ <https://medium.com/learn-angular/angular-charts-879c7bbd710>
- ✓ <https://www.digitalocean.com/community/tutorials/angular-chartjs-ng2-charts>
- ✓ <https://data-flair.training/blogs/html-radio-button/>
- ✓ https://www.w3schools.com/TAGs/tryit.asp?filename=tryhtml_button_name
- ✓ <https://www.geeksforgeeks.org/javascript-console-log-method/>

Graspear Solutions Private Limited, Madurai.**5. Tennis Score Board****Summary of topics learned & Work done:**

- ❖ Made a study on Tennis Score .

An overview of Tennis Score calculation:

- In tennis, a match is typically played as the best of **three or five sets**. Each set is won by the player or team who wins **at least six games** and has a two-game lead over their opponent.
- A game is won by the player or team who wins at least four points and has a two-point lead over their opponent.
- Points in a game are scored as **15, 30, 40**, and game point. If the score reaches **40-40**, it is called **"deuce"** and the player or team who wins the next point wins the game.
- If a set is tied **6-6**, a **tiebreak** is played to determine the winner of the set. In tiebreak, players play until one of the players reaches 7 points and wins by 2 points.

Tennis Score Board in Angular:

- This is an Angular Tennis, (i.e.) an app built with AngularJS.
- In this app, we basically need to enter the names of the two players we have.

Player	Points	Set 1	Set 2	Set 3
Jeyakumar N K	0	0	0	0
Prithivi Raj S D	0	0	0	0

Sets	Games to win each set	Tie Break Points:	Current Set:
3	6	7	1

Apply
New Game

Fig 5.1: Configuration of Players Name

- Select how many sets we want to play and click on Start Game, which will show us the interesting part of the app. (No of selected sets = 3)

Player	Points	Set 1	Set 2	Set 3
Jeyakumar N K	0	0	0	0
Prithivi Raj S D	0	0	0	0

Jeyakumar N K


Prithivi Raj S D

Undo

Configure

Fig 5.2: Starting match with 3 sets

- We will see two buttons out of which one is green and rest is orange.
- Every time we click on one of them, it will score a point for the player on the side from where we clicked the button.
- Points within a game are 0-15-30-40
- If a player has 40 points and scores, he/she wins the game unless the opponent has 40 points too.
- If both players get 40 points then we have a Deuce and the app will show a Deuce Message to the players.
- When on Deuce, scoring a point will mark advantage AD to the player who scored as shown in the figure 5.3



Player	Points	Set 1	Set 2	Set 3
Jeyakumar N K	40	0	0	0
Prithivi Raj S D	AD	0	0	0

Prithivi Raj S D scored the point

Jeyakumar N K

Prithivi Raj S D

Undo

Configure

Fig 5.3: Prithivi Raj scored when on Deuce

- If a player has advantage and scores he/she wins the game, but if the opponent scores they return to a Deuce.

- If a player wins 6 or more games with an advantage of at least two games, he/she wins the set and we start the next set.

Player	Points	Set 1	Set 2	Set 3
Jeyakumar N K	0	1	0	0
Prithivi Raj S D	0	0	0	0

Jeyakumar N K won the game

Jeyakumar N K

Prithivi Raj S D

Undo

Configure

Fig 5.4: Prithivi Raj's opponent Won the set

- If both players arrive to 6 games won, we enter a Tie Break situation, and a message for that will be displayed as shown in the figure5.5.

Player	Points	Set 1
Jeyakumar N K	0	6 ⁰
Prithivi Raj S D	0	6 ⁰

Prithivi Raj S D won the game

Fig 5.5: Tie Break situation

- The Tie Break is won by any one of the players to score 7 points, with at least two of difference with its opponent.


Player	Points	Set 1
Jeyakumar N K	0	6 ⁴
Prithivi Raj S D	0	6 ⁷

Prithivi Raj S D took the set

Fig 5.6: Prithivi Raj took the set by breaking the tie.

- The player who wins 2 sets out of 3, or 3 sets out of 5 wins the match as shown in the figure 5.7.

Player	Points	Set 1	Set 2	Set 3
Jeyakumar N K	0	6 ⁴	2	0
Prithivi Raj S D	0	6 ⁷	6	0

 Prithivi Raj S D won the match!

Jeyakumar N K

Prithivi Raj S D

Undo
Configure

Fig 5.7: Prithivi Raj won the match

Configurable settings of 'Tennis Score Board':

Player	Points	Set 1	Set 2	Set 3	Set 4	Set 5
Jeyakumar N K	0	6	2	0	0	0
Prithivi Raj S D	0	6	6	0	0	0

Sets: 5

Games to win each set: 6

Tie Break Points: 7

Current Set: 2

Fig 5.8: Configurable settings of Angular Tennis

The following setting can be configured

- Players Name
- Points scored by players
- Number of sets
- Number of games to be played to win the set
- Total number of Tie break points

References:

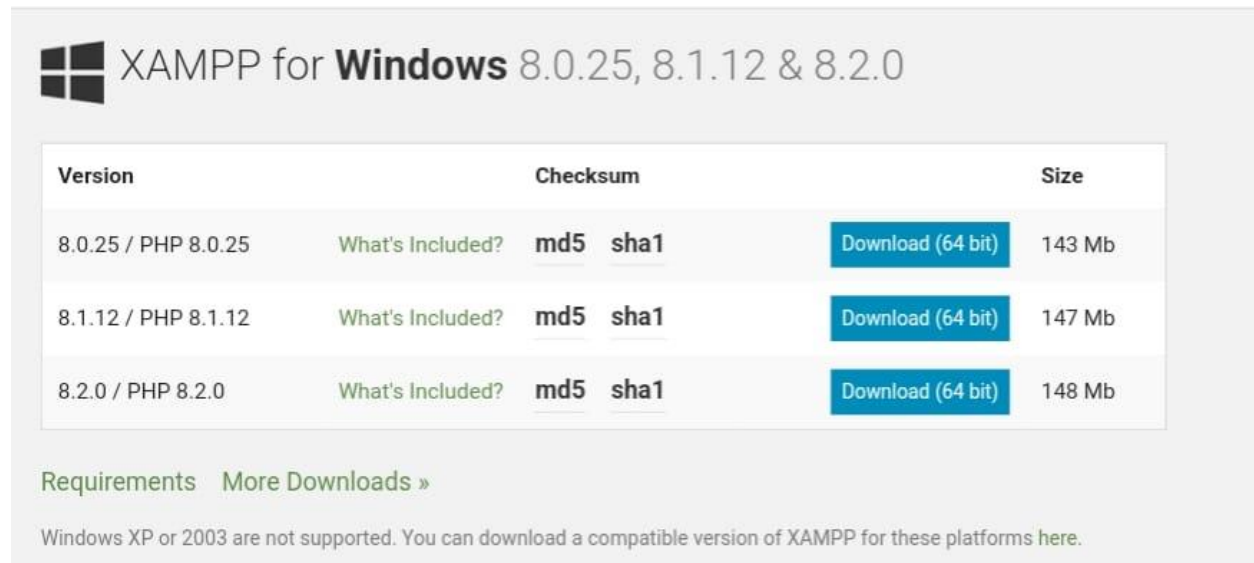
- ✓ <https://themetalfleece.github.io/tennis-score/>
- ✓ <https://www.sportsrec.com/393919-what-is-ad-court-in-tennis.html>

Graspear Solutions Private Limited, Madurai.**6. Installation of XAMPP & OpenCart****Summary of topics learned & Work done:**

- ❖ Installation of XAMPP application.
- ❖ Downloaded & extracted opencart file
- ❖ Created a database for the development of E- Commerce Web application.

Installation of XAMPP Application:

First the XAMPP application can be downloaded from [Download XAMPP \(apachefriends.org\)](https://www.apachefriends.org) (Official web Page)



XAMPP for **Windows** 8.0.25, 8.1.12 & 8.2.0

Version	Checksum	Size
8.0.25 / PHP 8.0.25	What's Included? md5 sha1	Download (64 bit) 143 Mb
8.1.12 / PHP 8.1.12	What's Included? md5 sha1	Download (64 bit) 147 Mb
8.2.0 / PHP 8.2.0	What's Included? md5 sha1	Download (64 bit) 148 Mb

[Requirements](#) [More Downloads »](#)

Windows XP or 2003 are not supported. You can download a compatible version of XAMPP for these platforms [here](#).

Fig 6.1: Download XAMPP

It is preferable to download the oldest version of XAMPP instead of using the latest version because many of the XAMPP users including me still facing some issues with the latest version while installing it on our device.

Now its almost over so run the application. There we can able to see 5 modules upon which we need to switch start for Apache & MySQL modules as show in the figure. (Fig 6.2)

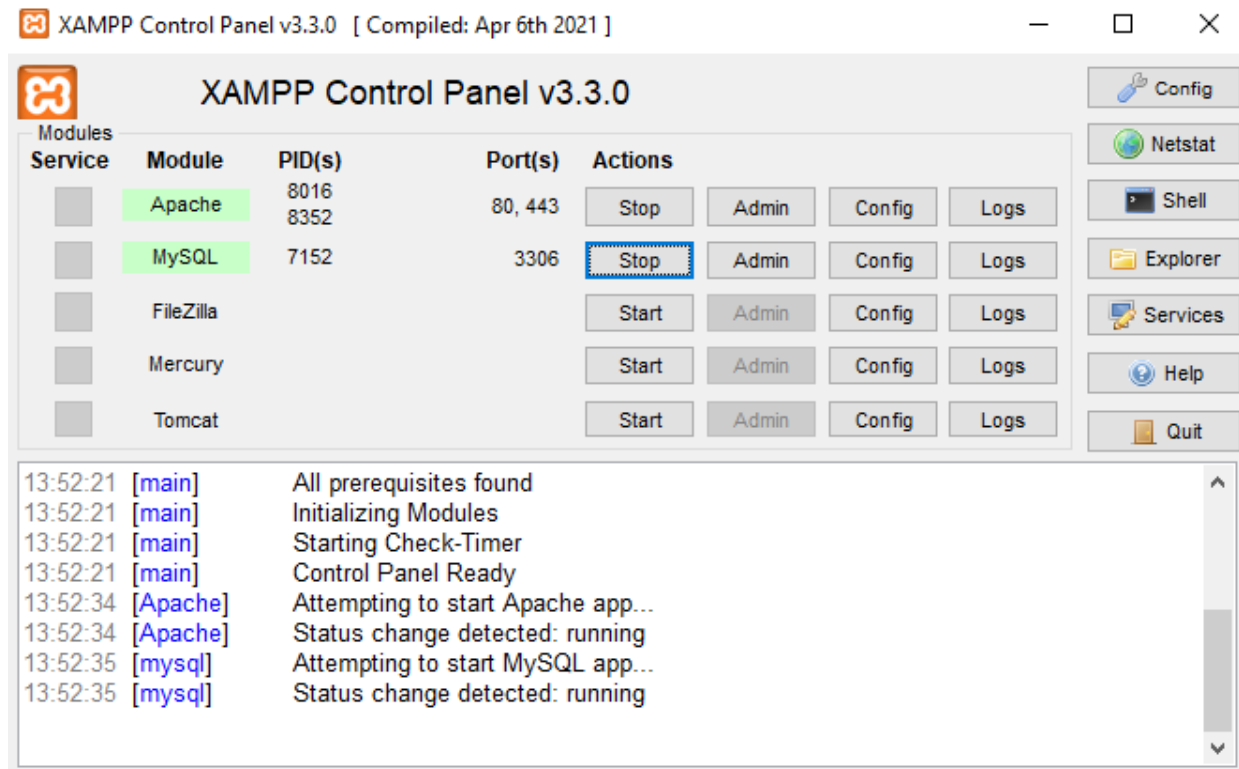


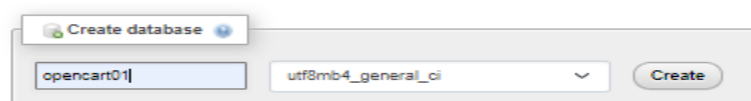
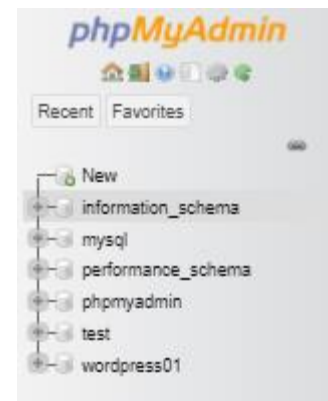
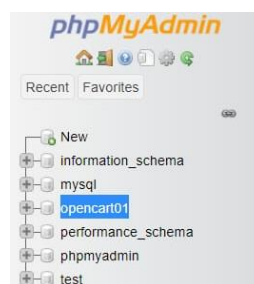
Fig 6.2: XAMPP Control panel

Downloading & Extraction of OpenCart:

- 🔗 The opencart can be downloaded from their official web page as shown below. (Fig 6.2)
- 🔗 After completion of download process we need to extract the downloaded file and then the open extracted opencart folder under which we can able to find our desired folder called "Upload".
- 🔗 Now find the directory where actually the XAMPP application is installed and open that folder eventually we can able to notice 'htdocs' folder there, open htdocs folder within which we need to create a New Folder & name it. (Say opencart1)

**Fig 6.2: OpenCart Download page**

- ✚ Right now we need to paste files present inside the upload folder of opencart to our newly/ recently created folder in htdocs. (opencart1)
- ✚ Then get in to this link <http://localhost/phpmyadmin/> next it'll load the following as shown in the figure (Fig 6.3)
- ✚ Create a new data base simply by clicking **new** section as shown in the figure (Fig 6.3)
- ✚ Then name the data base (Say opencart1) and click **create** (Fig 6.4)
- ✚ Finally the data base has been created successfully.(Fig 6.5)

**Fig 6.4****Fig 6.3****Fig 6.5 Newly Created DataBase**

The following picture shows the admin panel view of OpenCart where we can customize the web page to our own wish. (Fig 6.6)

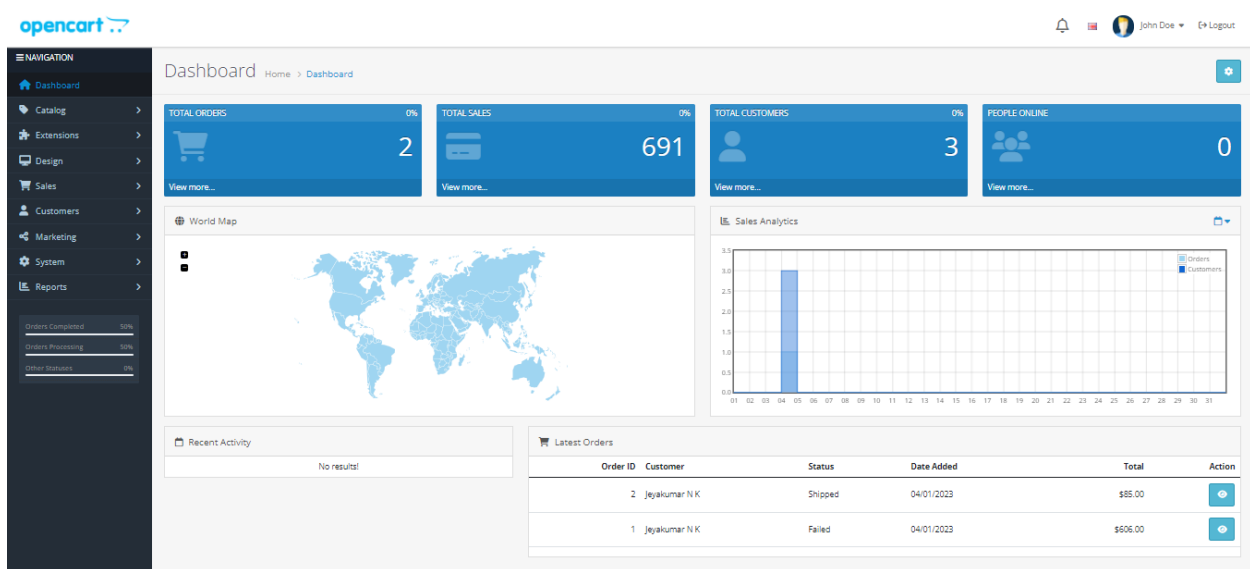


Fig 6.6: Admin panel view of OpenCart

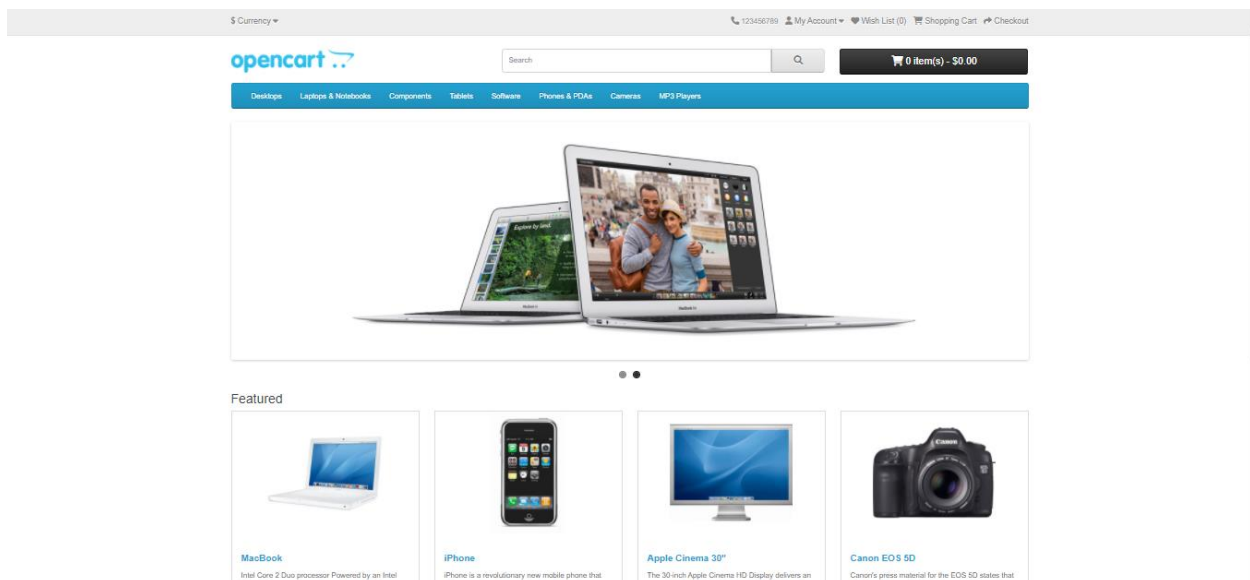


Fig 6.7: Store view of OpenCart

Under reports section of navigation in admin panel we can able to customize the following

- Order Report
- Coupon Report
- Reward Points Report
- Customer Transaction Report
- Customer Subscription Report

And some non-customizable reports are as follows

- Tax Report
- Shipping Report
- Returns Report
- Product Viewed Report
- Product Purchased Report
- Customer Activity Report
- Customer Searches Report
- Marketing Repor

Lets discuss about the sales -> orders customizable & non-customizable features in upcoming documentation.

References:

- ✓ <https://www.apachefriends.org/download.html>
- ✓ <https://www.opencart.com/?route=cms/download>
- ✓ <http://localhost/phpmyadmin/>
- ✓ <https://youtu.be/SxVmHYvCppo>

Grasppear Solutions Private Limited, Madurai.

7. Documentation on Sales : Orders

Summary of topics learned & Work done:

- ❖ Analysed Store and Admin panel view of Sales -> Orders using open cart and XAMPP
- ❖ Documentation of an analysis made from the Sales -> Orders section of both the admin and customer panels.

Orders

This orders section will have 4 Buttons at the top right corner of admin panel.

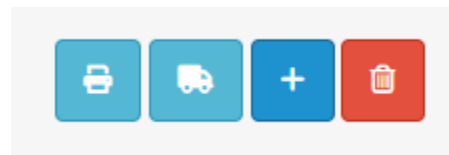


Fig 7.1: Available buttons for customization

First Button (Print invoice):

To print the user's invoice status along with the charges (cost) and delivery details.

Second Button (Print Shipping list):

To print the shipping details of the product to be delivered to the customer.

Third Button (Add New Order):

This is used to add/ place new order from the admin panel it self.

Fourth Button (Delete):

This is normally used to delete any of the selected records from the list of orders made by customers.

Managing orders

Under the store view of checkout segment, we can able to keep track/gather some details of the ordered product, which is automatically fetched from Orders section of admin panel.

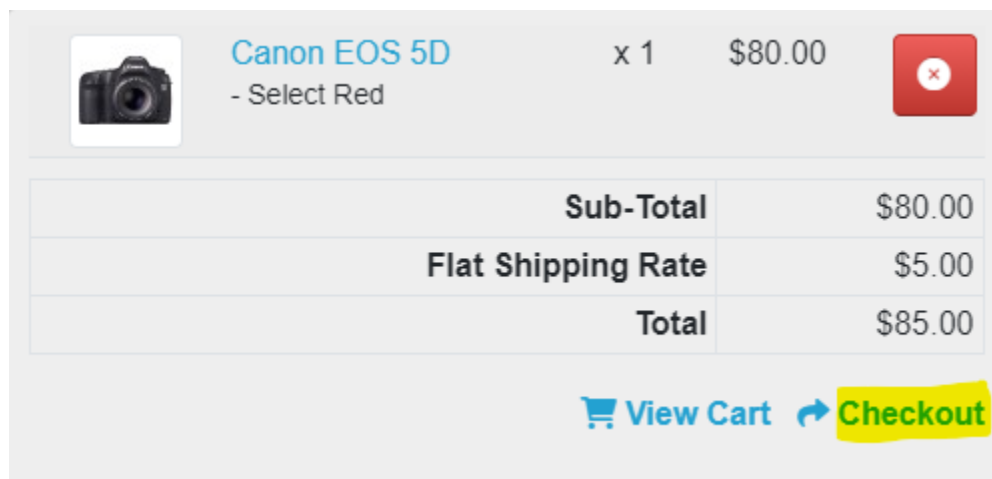


Fig 7.2: Store view to find Checkout segment

Once the order has been placed successfully the customer will be notified with the following message (Fig 3). Then the cart is set empty, that is, even if we click our Checkout segment it will display the message like “Your shopping cart is empty!”

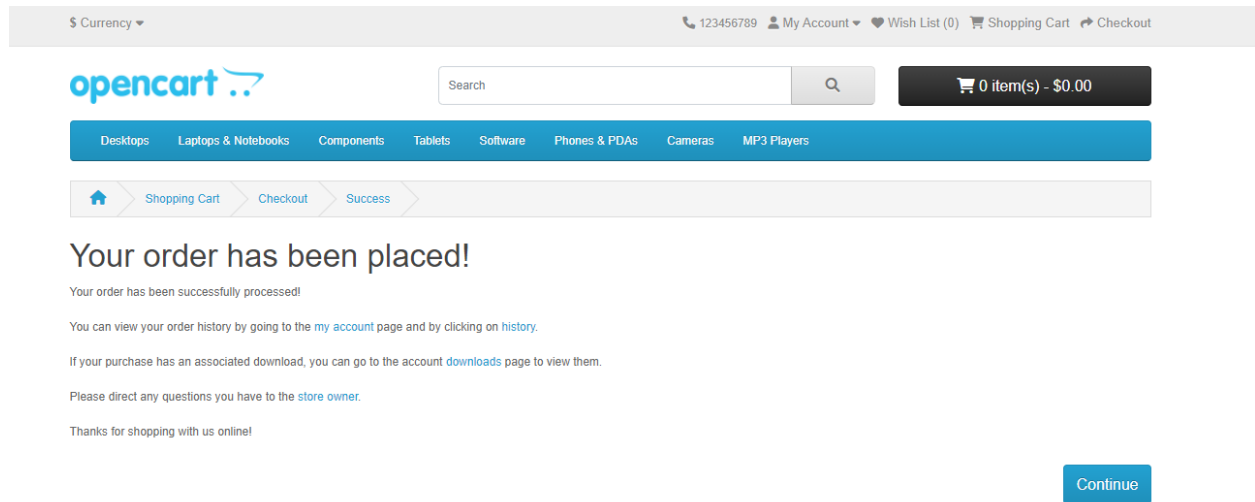


Fig 7.3: Checkout segment after confirmation of order

Viewing order details

The following details are displayed for each order on the list:

- **Order ID:** a number assigned to an order by OpenCart during the checkout confirmation
- **Customer:** the name of the customer that made the order.
- **Status:** update of the status of the order. After the order is initially created the status will be "Pending". The default options are Missing Orders, Canceled, Canceled Reversal, Chargeback, Complete, Denied, Expired, Failed, Pending, Processed, Processing, Refunded, Reversed, Shipped, and Voided.
- **Total:** the total price of the order.
- **Date Added**
- **Date Modified**
- **Action:** It includes an option to edit, insert, delete, search, or print an invoice of an order.



☰ Order List								
<input type="checkbox"/>	Order ID ▾	Store	Customer	Status	Total	Date Added	Date Modified	Action
<input type="checkbox"/>	2	Your Store	Jeyakumar N K	Pending	\$85.00	04/01/2023	04/01/2023	
<input type="checkbox"/>	1	Your Store	Jeyakumar N K	Failed	\$606.00	04/01/2023	04/01/2023	

Fig 7.4: Order List of admin panel**Searching for an order**

The "Filter" under Action helps us to find orders based on the information specified in the blanks.

It can help us to locate orders by

- ✓ Date added
- ✓ Customer
- ✓ Order ID
- ✓ Order status (i.e) Pending/failed/delivered
- ✓ Total cost (or)
- ✓ Store from where the order has been actually made

Order ID

Customer

Store

Order Status


Total

Date From

Date To

Fig 7.5**Customer details**

The first section for modifying an order is called Customer Details. Typing in a customer name that has already made an account with the store will auto-complete the form by bringing up their information to fill in the blanks.

 Add Customer

General

Addresses

Payment Methods

History

Transactions

Reward Points

IP Addresses

Customer Details

Store

Default

▼

Customer Group

Default

▼

* First Name

Dinesh Babu

* Last Name


P K

* E-Mail

2025vcetib27@gmail.com

Telephone

9874632095

 Add Customer

General

Addresses

Payment Methods

History

Transactions

Reward Points

IP Addresses

➕ Add Address

Fig 7.6: Adding customer details

Payment details

If an address has been added to the customer, select their address option under "Choose Address". Otherwise the customer address will need to be manually filled into the form.



Payment Address Jack R XYZ 3319, Thiruvalluvar Street 7624, Vasuki Street Madurai 625009 Tamil Nadu India	Shipping Address Feroin A ABC 3456, Malligai homes 6546, Mullai homes Madurai 625012 Tamil Nadu India				
Shipping Method Flat Shipping Rate	Payment Method Cash On Delivery				
Comment					
<table border="1"> <tr> <td>Sub-Total</td> <td>\$80.00</td> </tr> <tr> <td>Total</td> <td>\$80.00</td> </tr> </table>		Sub-Total	\$80.00	Total	\$80.00
Sub-Total	\$80.00				
Total	\$80.00				
<div>   </div>					

Fig 7.7: Payment details**Shipping details**

This section tracks the shipping address for this particular order. If the shipping and payment address are the same, copy and paste the information above when adding it manually.

Vouchers

If a customer wants to add a gift voucher order (Birthday/Christmas/General), it will ask them for the following information.

Products	Vouchers
Add Voucher	
Recipient's Name	
Kathir A	
Recipient's E-mail	
kathir2984@gmail.com	
Sender's Name	
Jeyakumar N K	
Sender's E-mail	
jeyamnkj03@gmail.com	
Gift Certificate Theme	
Christmas	
Message	
Message	
Amount	
5000	

Fig 7.8

Totals

Under Totals, other contributing payment factors, such as coupons and vouchers, are added/subtracted to the order total.

Store Your Store	Language English	Currency US Dollar	Coupon
Voucher	Use Reward Points 0	Reward Points 200	Affiliate
Commission			

Fig 7.9: Total amount with some specifications

The sections seen above (such as Coupon, Voucher, Rewards) are extensions that were enabled specifically for this form.

Adding History

The customer will be notified about the status of their product to be delivered

Add History

Order Status	Shipped
Override	<input checked="" type="checkbox"/>
If the customers order is being blocked from changing the order status due to an anti-fraud extension enable override.	
Notify Customer	<input checked="" type="checkbox"/>
Comment	<div> Your order has been shipped successfully. </div>
<div>Add History</div>	

Fig 7.10: Admin panel view of Order History

Order History

Date Added	Status	Comment
04/01/2023	Pending	
05/01/2023	Shipped	Your order has been shipped successfully.

Fig 7.11: Store view of Order History

Printing invoices/ Shipping details

To print an invoice or shipping details of the product, we need to go back to the Orders page under Sales - > Orders. Above the order list on the top right corner is the "Print Invoice" . Select the order to be printed, and click "Print Invoice" (or) "Print Shipping List" . This action will direct us to a printable page of the invoice/ shipping list.

Invoice #2

Invoice INV-2023-002	Order ID 2	Date Added 04/01/2023	Store Your Store
Store Address Address 1	Store Telephone 123456789	Store E-Mail jeyamnkj03@gmail.com	Payment Method Cash On Delivery
Shipping Method Flat Shipping Rate			
Shipping Address rtatsjasgwus ssds shsjhaj addasdf sdq rfe, Tamil Nadu 23478 India			

Product	Model	Quantity	Unit Price	Total
Canon EOS 5D - Select: Red	Product 3	1	\$80.00	\$80.00
			Sub-Total	\$80.00
			Flat Shipping Rate	\$5.00
			Total	\$85.00

Fig 7.12: Print Invoice

Day 7

Name: Jeyakumar N K

Date: 04/01/2023

Dispatch Note #2

Invoice INV-2023-002	Order ID 2	Date Added 04/01/2023	Store Your Store
Store Telephone 123456789	Store E-Mail jeyamnkj03@gmail.com	Web Site http://localhost/opencart01	Shipping Method Flat Shipping Rate
Customer E-Mail jeyamnkj03@gmail.com			
Shipping Address rtatsjasgwus ssds shsjhaj addasdf sdq rfe, Tamil Nadu 23478 India		Store Address Address 1	

Location	Reference	Product	Product Weight	Model	Quantity
		Canon EOS 5D - Select: Red	0.00kg	Product 3	1

Fig 7.13: Print Shipping details

Reference:

✓ <https://www.opencart.com/>

Graspear Solutions Private Limited, Madurai.**8. PHP****Summary of topics learned & Work done:**

- ❖ Today I have learnt to write my first Hello World program in php.
- ❖ Variables, Comment lines, Arrays, Constants, Conditional statements, Loops and Functions.
- ❖ And some OOPs concepts like Class, Objects, Member variables, Member functions, Constructors, Destructors, Inheritance, Polymorphism in php.

Here is what I have learnt with some example illustrations.

My first Hello World Program in php:

To write my first php program I had just gone through the following steps

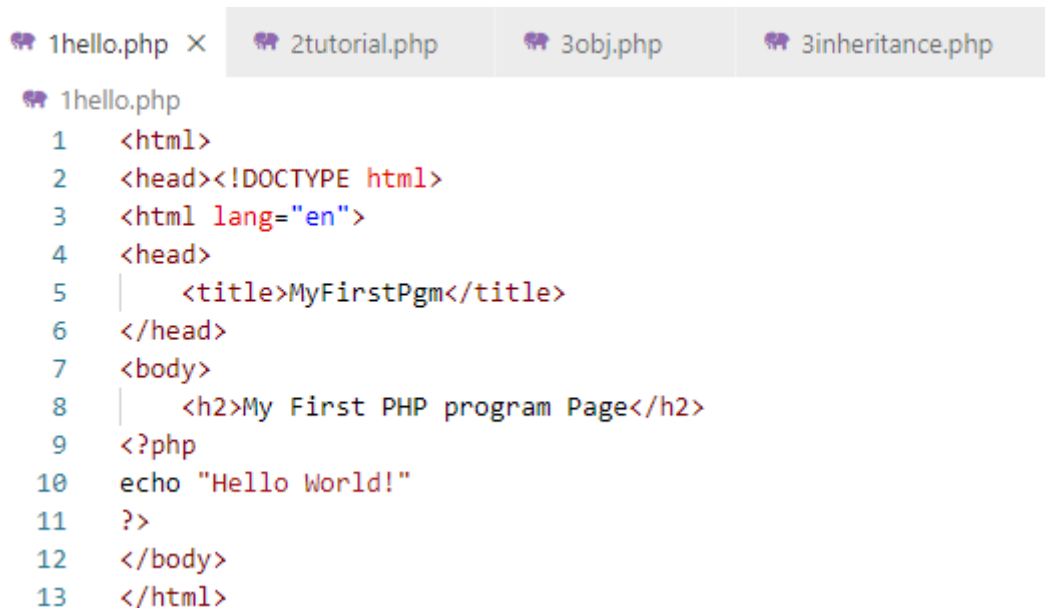
- Open any code editor (VS Code)
- Click open folder inside the editor
- Select Xampp folder
- Get-in to htdocs
- Create a new folder (say, *php program*) in htdocs
- After that, open a new file in *php program* folder.
- Name the file as 'hello.php'
- Then start coding
- Once the coding part is over then save the file
- And run the file over any browser to see the output
(http://localhost/folder_name)

These are the steps which we often need to follow to write a program in php.

Basic php program syntax is as follows,

```
<?php
    //block of code
?>
```

To print anything in the console we need to use **echo** function in php



```
1hello.php X 2tutorial.php 3obj.php 3inheritance.php
1hello.php
1 <html>
2 <head><!DOCTYPE html>
3 <html lang="en">
4 <head>
5 | <title>MyFirstPgm</title>
6 </head>
7 <body>
8 | <h2>My First PHP program Page</h2>
9 <?php
10 echo "Hello World!"
11 ?>
12 </body>
13 </html>
```

Fig 8.1: My First Hello World Program

Variables

- All variables in PHP are denoted with a leading dollar sign (\$). Variables can, but do not need, to be declared before assignment. No need to define data type of the variable.
- PHP has 8 different data types to construct our variables:

They are,

Integers: are whole numbers, without a decimal point, like 4195.

Doubles: are floating-point numbers, like 3.14159 or 49.1.

Booleans: have only two possible values either true or false.

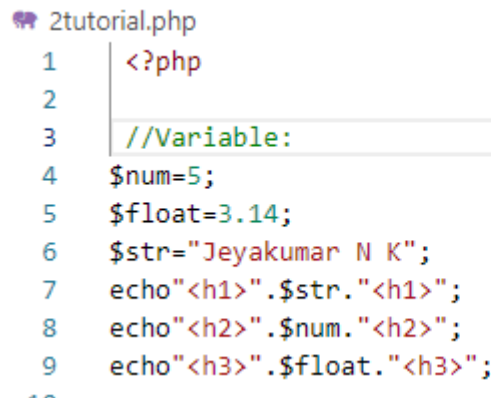
NULL: is a special type that only has one value: NULL.

Strings: are sequences of characters, like 'PHP supports string operations.'

Arrays: are named and indexed collections of other values.

Objects: are instances of programmer-defined classes, which can package up both other kinds of values and functions that are specific to the class.

Resources: are special variables that hold references to resources external to PHP (such as database connections).



```

1  <?php
2
3  //Variable:
4  $num=5;
5  $float=3.14;
6  $str="Jeyakumar N K";
7  echo"<h1>".$str."<h1>";
8  echo"<h2>".$num."<h2>";
9  echo"<h3>".$float."<h3>";

```

Fig 8.2: Variables

Comments:

- A comment is the portion of a program that exists only for the human understanding and normally ignored before displaying the programs result.
- There are two commenting formats in PHP: **Single-line & Multi-line comments**

Single-line comments:

They are generally used for short explanations or notes relevant to the local code.

//single line comment

Multi-lines comments: This is generally used for two purpose, one is to write a brief explanation about the code functionality and the another one is to document the program by providing author details, purpose of the program etc.

```
/*Multiple line comments .....
.....*/
```

Arrays:

- Arrays in PHP is a type of **data structure** that allows us to store multiple elements of similar data type under a single variable thereby saving us the effort of creating a different variable for every data.
- To print an array we need to var_dump() of function
- We can able to access an element by specifying its index also.

Syntax:

```
$variable_name = array("Element_1",... "Element_N");
```

```
11 //Arrays:
12 $laptop=array("Hp","Lenovo","Dell");
13 echo var_dump($laptop);
14 echo var_dump($laptop[2]);
```

Fig 8.3: Arrays

Constants:

- A constant is an identifier (name) for a simple value. The value cannot be changed during the script.
- A valid constant name starts with a letter or underscore.
- No need to use '\$' sign before the constant name.

Syntax:

```
define(name, value, case-insensitive)
```

```
16 //constants:
17 define("Name","Jeyakumar N K");
18 define("Roll", ["21ITB27","21ITB32","21ITB35","21ITB36","21ITB48"]);
19 echo var_dump(Roll);
20 echo Name;
```

Fig 8.4: Constants**Conditional statements:**

- Conditional statements are used to perform different actions based on different conditions. The PHP if...elseif...else statement is used when we need to execute particular block of code based on multiple conditions.

Syntax:

```
if(condition_1)
{
    // block of code to execute, if condition_1 is true
}
elseif(condition_2)
{
    // block of code to execute, if condition_2 is true
}
....
elseif(condition_N)
{
    // block of code to execute, if condition_N is true
}
else
{
    // block of code if all conditions are false
}
```

```

22  //conditional statements:
23  $j1=18;
24  if($j1>9)
25  {
26      echo "The num is greater than 9 and the num is ",$j1;
27  }
28  else{
29      echo "The num is less than 9";
30  }
31
32  if($j1%2==0 && $j1%3==0)
33  {
34      echo "Divisible by both 2 & 3";
35  }
36
37  else if($j1%2==0)
38  {
39      echo "Divisible by 2";
40  }
41
42  else if($j1%3==0)
43  {
44      echo "Divisible by 3";
45  }
46
47  else
48  {
49      echo "Not Divisible by both 2 & 3";
50  }

```

Fig 8.5: conditional statements**Switch-Case Statements:**

- The switch statement is used to perform different actions based on different conditions.
(i.e) It can be used to select one code to be executed among many blocks of code .

Syntax:

```

switch (n) {
    case labell1:
        code to be executed if n=labell1;
        break;

```

```
case label2:
    code to be executed if n=label2;
    break;
    ...

default:
    code if n is different from all labels;
}

54  switch($c)
55  {
56      case 1: echo "Your choice is 1";
57      break;
58      case 2: echo "Your choice is 2";
59      break;
60      case 3: echo "Your choice is 3";
61      break;
62      default:
63      echo "Error occurred!";
64  }
```

Fig 8.6: Switch case statements**Loops:**

- Loops are used to execute the same block of code again and again, as long as a certain condition is true.
- In PHP, we have the three types of loop: while loop, do..while loop & for loop.

while: loops through a block of code as long as the specified condition is true (Pre test loop)

do...while: loops through a block of code once, and then repeats the loop as long as the specified condition is true (Post test loop : loop will be executed at least one time)

for: loops through a block of code a specified number of times.

```
68 $i=5;
69 echo "While Loop <br>";
70 while($i<10)
71 {
72     echo "The Number is : $i <br>";
73     $i++;
74 }
75 echo "<br>";
```

Fig 8.7.1: while (Pre test) Loop

```
79 echo "Do-While Loop <br>";
80 do{
81     echo "The Number is : $i1 <br>";
82     $i1++;
83 } while($i1<10);
84 echo "<br>";
```

Fig 8.7.2: do..while (Post test) Loop

```
86 echo "For Loop<br>";
87
88 for($f1=1;$f1<6;$f1++){
89     echo "The number is $f1 <br>";
90 }
91
```

Fig 8.7.3: for Loop

Functions:

- A function is a block of statements that can be used repeatedly in a program.
- A function will not execute automatically when a page loads.
- A function will be executed by a call to the function. So a function is classified in to 2 parts namely function definition & function call.

- There are two types of functions: Built-in function (define(), echo), User defined function.

Syntax:**Function definition:**

```
function functionName() {
    //code to be executed;
}
```

Function Call:

```
functionName();

93  //Functions
94
95  function myFn()
96  {
97      $sum=0;
98      for($i1=0;$i1<5;$i1++){
99
100     $sum=$sum+$i1;
101     }
102     echo "The sum of numbers: $sum <br>";
103
104     }
105
106     myFn();
```

Fig 8.8: Functions (User Defined Function)**OOPs Concepts in PHP:****Class:**

- A class is a template for objects, and an object is an instance of class.

- A class is defined by using the **class** keyword, followed by the name of the class and a pair of curly braces ({ }). All its properties and methods go inside the braces:

Syntax:

```
<?php
class ClassName {
    // code goes here...
}
?>
```

Objects:

- Classes are nothing without objects! We can create multiple objects from a class. Each object has all the properties and methods defined in the class, but they will have different property values.
- Objects of a class are created using the **new** keyword.

Constructors:

- A constructor allows you to initialize an object's properties upon creation of the object.
- A constructor can be created by using **__construct()** function.

Destructors:

- A destructor is called when the object is destructed or the script is stopped or exited.
- A destructor can be created by using **__destruct()** function.

```

3  <?php
4  class Fruit{
5
6      public $name;
7      public $color;
8      function set_name($name)
9      {
10         $this->name=$name;
11     }
12     function get_name()
13     {
14         return $this->name;
15     }
16 }
17 $apple=new Fruit();
18 $banana=new Fruit();
19
20 $apple->set_name("Apple");
21 $banana->set_name("Banana");
22
23 echo $apple->get_name();
24 echo "<br>";
25 echo $banana->get_name();

```

Fig 8.9: Class & Objects

```

27 class Fruit{
28     public $name;
29     public $color;
30     function __construct($name,$color){
31         $this->name=$name;
32         $this->color=$color;
33     }
34     // function get_name()
35     // {
36     //     return $this->name;
37     // }
38     // function get_color()
39     // {
40     //     return $this->color;
41     // }
42
43     function __destruct(){
44         echo "The name of this fruit is {$this->name} and the color of this fruit is {$this->color} ";
45     }
46 }
47
48 $strawberry=new Fruit("Strawberry", "Pink");
49 //echo $strawberry->get_name();
50 echo "<br>";
51 //echo $strawberry->get_color();

```

Fig 8.10: Constructors & Destructors

Inheritance:

- Inheritance means a class derives from another class.
- The child class will acquire all the properties and methods from the parent class. In addition, it can have its own properties and methods.
- An inherited class is defined by using the `extends` keyword.

```
3  class Fruit{
4      public $name;
5      public $color;
6      function __construct($name,$color){
7          $this->name=$name;
8          $this->color=$color;
9      }
10     public function message(){
11         echo "The fruit name is $this->name and the color of fruit is $this->color.";
12     }
13 }
14 }
15
16 class cherry extends Fruit{
17     public function message1(){
18         echo "This is from Sub class<br> Is this a cherry?<br>";
19     }
20 }
21 }
22 $Cherry=new cherry("Banana","Yellow");
23 $Cherry->message1();
24 $Cherry->message();
25 ?>
```

Fig 8.11: Inheritance**Polymorphism:**

- Polymorphism is the ability to have more than one form.
- Polymorphism in PHP can be implemented by either the use of interfaces or abstract classes.

```

1  <?php
2      interface Machine {
3          public function calcTask();
4      }
5      class Circle implements Machine {
6          private $radius;
7          public function __construct($radius){
8              $this -> radius = $radius;
9          }
10         public function calcTask(){
11             return $this -> radius * $this -> radius * pi();
12         }
13     }
14     class Rectangle implements Machine {
15         private $width;
16         private $height;
17         public function __construct($width, $height){
18             $this -> width = $width;
19             $this -> height = $height;
20         }
21         public function calcTask(){
22             return $this -> width * $this -> height;
23         }
24     }
25     $mycirc = new Circle(3);
26     $myrect = new Rectangle(3,4);
27     echo $mycirc->calcTask();
28     echo $myrect->calcTask();
29  ?>
--

```

Fig 8.12: Polymorphism**References:**

- ✓ <https://www.w3schools.com/>
- ✓ <https://www.geeksforgeeks.org/>
- ✓ <https://www.simplilearn.com/>
- ✓ <https://www.php.net>
- ✓ <https://www.javatpoint.com/php-tutorial>
- ✓ https://youtu.be/6EukZDFE_Zg
- ✓ <https://www.tutorialspoint.com/>

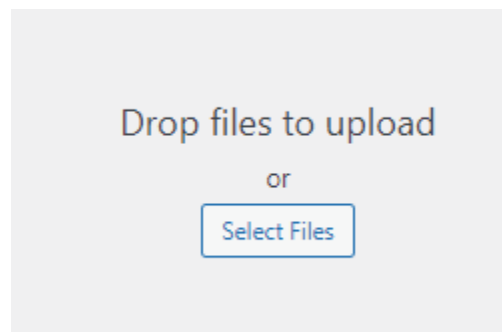
This document was prepared using the notes that I had taken while learning these topics.

Graspear Solutions Private Limited, Madurai.**9. Woo Commerce Web Application****Summary of topics learned & Work done:**

- ❖ Today I have learnt to add themes using Woo Commerce.
- ❖ Created new products using attributes, variations.
- ❖ Created documentation on “Async-upload” (async-upload.php file) by exploring its codes from the WordPress-Admin folder of XAMPP.

9.1 Documentation on exploring “*async-upload*” code**Introduction:**

In WordPress, the `async-upload.php` file is a script that handles file uploads asynchronously from the WordPress dashboard. When we click the "Add Media" button in the post editor and select a file to upload, WordPress uses an AJAX (Asynchronous JavaScript and XML) request to send the file to the `async-upload.php` script for processing. This allows the file to be uploaded in the background without the need to reload the page. The `async-upload.php` file is part of the WordPress core and is located in the `wp-admin/includes` directory. It is responsible for receiving, validating, and storing file in the WordPress media library.

**Fig 9.1.1: Add media**

PHP Concepts Involved:**Conditional statements (if, if-else, if elseif --- else):**

Conditional statements are used to perform different actions based on different conditions. The PHP if...elseif...else statement is used when we need to execute particular block of code based on multiple conditions.

Syntax:

```
if(condition_1)

{

    // block of code to execute, if condition_1 is true

}

elseif(condition_2)

{

    // block of code to execute, if condition_2 is true

}

.

.

elseif(condition_N)

{

    // block of code to execute, if condition_N is true

}

else

{
```

```
// block of code to execute, if all conditions are false  
  
}
```

Switch-Case Statements:

The switch statement is used to perform different actions based on different conditions.
(i.e) It can be used to select one code to be executed among many blocks of code .

Syntax:

```
switch (n) {  
  
    case label1:  
  
        code to be executed if n=label1;  
  
        break;  
  
    case label2:  
  
        code to be executed if n=label2;  
  
        break;  
  
    ...  
  
    default:  
  
        code to be executed if n is different from all labels;  
  
}
```


ABSPATH:

ABSPATH is a PHP **constant**, which holds the Absolute path to the WordPress directory. It is defined in wp-config.php

PHP \$_REQUEST:

\$_REQUEST is a PHP **super global variable** which is used to collect data after submitting an HTML form.

isset():

The isset() function is an inbuilt function in PHP which is used to determine if the variable is declared and its value is not equal to NULL.

Syntax:

```
isset( mixed $var [, mixed $... ]): bool
```

define():

This function is used to define a named constant.

Syntax:

```
define( string $name , mixed $value [, bool $case_insensitive ]): bool
```

defined():

This function will Check whether a given named constant exist or not.

Syntax:

```
defined( string $name ): bool
```

require_once:

The `require_once` statement is identical to `require` except PHP will check if the file has already been included, and if so, not include (require) it again.

Syntax:

```
require_once
```

dirname:

The `__DIR__` can be used to obtain the current code working directory

Syntax:

```
dirname(__FILE__)
```

die():

In PHP, `die()` is the same as `exit()`. A program's result will be an empty screen. We can make use of `die()` when there is an error and have to stop the execution.

Syntax:

```
die("Message goes here"); (or)
```

```
die();
```

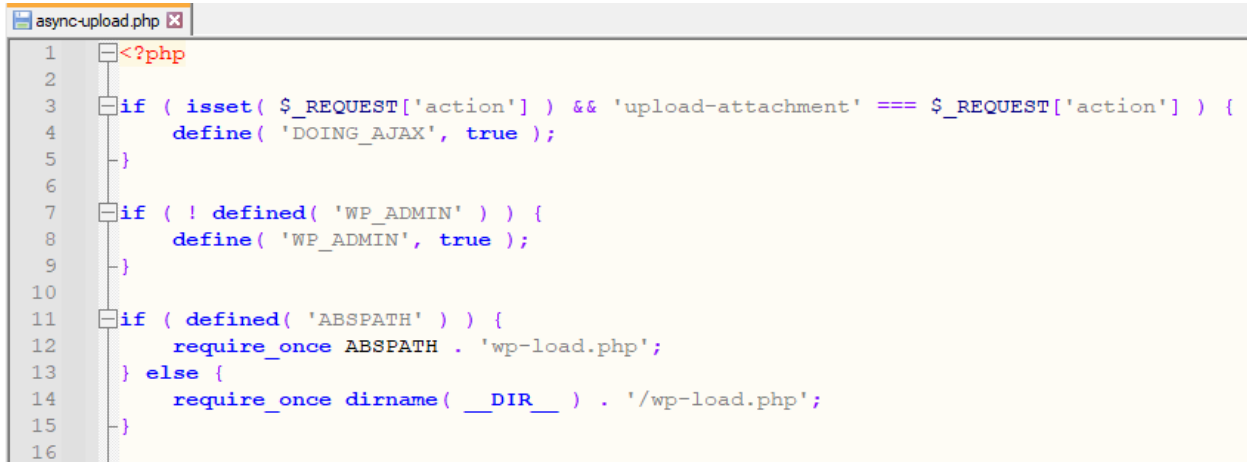
wp_die():

The function `wp_die()` is designed to give output just before it dies to avoid empty or time-outing responses.

Syntax:

wp_die("Text Goes Here");

Exploration of Code:



```

1  <?php
2
3  if ( isset( $_REQUEST['action'] ) && 'upload-attachment' === $_REQUEST['action'] ) {
4      define( 'DOING_AJAX', true );
5  }
6
7  if ( ! defined( 'WP_ADMIN' ) ) {
8      define( 'WP_ADMIN', true );
9  }
10
11 if ( defined( 'ABSPATH' ) ) {
12     require_once ABSPATH . 'wp-load.php';
13 } else {
14     require_once dirname( __DIR__ ) . '/wp-load.php';
15 }
16

```

Fig 9.1.2

- 1) From fig 9.1.2, `$_REQUEST[]` is an array, `'DOING_AJAX'` is a constant since it is declared using `define` keyword. The constant variable `DOING_AJAX` is assigned to `true`, if the action request variable is set and if its value is `upload-attachment`.
- 2) In the next if statement, it defines the constant `WP_ADMIN` as `true` if it is not already defined.
- 3) From the last if-else condition in fig 1, we can say that its trying to load the WordPress environment by including the `wp-load.php` file. The constant `ABSPATH` is defined in the WordPress codebase and is the absolute path to the WordPress installation directory. If this constant is already defined, this code will use it to include the `wp-load.php` file by specifying the path to it as `ABSPATH . 'wp-load.php'`. Otherwise, it will include the `wp-load.php` file by specifying its path relative to the current directory as `dirname(__DIR__) . '/wp-load.php'`. The function `dirname()` returns the directory name of a path

Note:

- The constant `WP_ADMIN` is used in the WordPress codebase to indicate that the current request is for an administrative page.

- Including the wp-load.php file is necessary to load the WordPress environment, which includes setting up the database connection and loading the necessary WordPress functions and global variables.

```

17  require_once ABSPATH . 'wp-admin/admin.php';
18
19  header( 'Content-Type: text/plain; charset=' . get_option( 'blog_charset' ) );

```

Fig 9.1.3

- 1) The first line of fig 9.1.3 includes the admin.php file. By including this file, we can access the WordPress dashboard and other administrative pages.
- 2) The second line of fig 9.1.3 sets the HTTP (Hyper Text Transfer Protocol) header to specify the content type as plain text, and sets the character set to the one specified in the blog's options. In WordPress, the get_option function is used to retrieve the value of a specific option from the WordPress options table in the database.

```

21  if ( isset( $_REQUEST['action'] ) && 'upload-attachment' === $_REQUEST['action'] ) {
22      require ABSPATH . 'wp-admin/includes/ajax-actions.php';
23
24      send_nosniff_header();
25      nocache_headers();
26
27      wp_ajax_upload_attachment();
28      die( '0' );
29  }
30
31  if ( ! current_user_can( 'upload_files' ) ) {
32      wp_die( __( 'Sorry, you are not allowed to upload files.' ) );
33  }

```

Fig 9.1.4

- 1) The first if condition in fig 9.1.4 is same as the condition in fig 9.1.2 .(i.e) This code will check whether action request variable is set and if its value is equivalence to upload-attachment. If this condition is satisfied then, it includes the ajax-actions.php file and then calls the send_nosniff_header and nocache_headers functions.

- 2) The `send_nosniff_header` function sends an HTTP header that tells the browser to disable its content sniffing feature, which is used to try to identify the type of content being served. This can help to prevent attacks that try to exploit vulnerabilities in the browser's handling of certain content types.
- 3) The `nocache_headers` function sends HTTP headers that tell the browser not to cache the response. This is typically used when serving dynamic content to ensure that the browser always retrieves the latest version of the content from the server.
- 4) Finally, the code calls the `wp_ajax_upload_attachment` function, which handles the file upload process, and then exits by calling the `die` function and passing in a value of '0' without requiring a page refresh.
- 5) The second if condition checks if the current user has the capability to upload files. If the current user does not have the capability, the function will output the message "Sorry, you are not allowed to upload files." and terminate the script.
- 6) The `current_user_can()` function is a WordPress function that checks whether the current user has a certain capability. In this case, the capability being checked is `upload_files`. The `wp_die()` function is a WordPress function that displays a message and terminates the script. It is similar to the `die()` function in PHP.

```

36 if ( !isset( $_REQUEST['attachment_id'] ) && (int) $_REQUEST['attachment_id'] && $_REQUEST['fetch'] ) {
37     $id = (int) $_REQUEST['attachment_id'];
38     $post = get_post( $id );
39     if ( 'attachment' !== $post->post_type ) {
40         wp_die( __( 'Invalid post type.' ) );
41     }
42
43     switch ( $_REQUEST['fetch'] ) {
44         case 3:
45             ?>
46             <div class="media-item-wrapper">
47                 <div class="attachment-details">
48                     <?php
49                     $thumb_url = wp_get_attachment_image_src( $id, 'thumbnail', true );
50                     if ( $thumb_url ) {
51                         echo ' ';
52                     }
53
54                     // Title shouldn't ever be empty, but use filename just in case.
55                     $file = get_attached_file( $post->ID );
56                     $file_url = wp_get_attachment_url( $post->ID );
57                     $title = $post->post_title ? $post->post_title : wp_basename( $file );
58                     ?>

```

```

59      <div class="filename new">
60          <span class="media-list-title"><strong><?php echo esc_html( wp_html_excerpt( $title, 60, 'shellip;' ) ); ?></strong></span>
61          <span class="media-list-subtitle"><?php echo wp_basename( $file ); ?></span>
62      </div>
63      <div class="attachment-tools">
64          <span class="media-item-copy-container copy-to-clipboard-container edit-attachment">
65              <button type="button" class="button button-small copy-attachment-url" data-clipboard-text="<?php echo $file_url; ?>"><?php _e( 'Copy URL to clipboard' ); ?>
66              </button>
67              <span class="success hidden" aria-hidden="true"><?php _e( 'Copied!' ); ?></span>
68          </span>
69          <?php
70              if ( current_user_can( 'edit_post', $id ) ) {
71                  echo '<a class="edit-attachment" href="' . esc_url( get_edit_post_link( $id ) ) . '"> . _x( 'Edit', 'media item' ) . '</a>';
72              } else {
73                  echo '<span class="edit-attachment"> . _x( 'Success', 'media item' ) . '</span>';
74              }
75          <?php
76      </div>
77  </div>
78  </div>
79  <?php
80  break;

```

```

81      case 2:
82          add_filter( 'attachment_fields_to_edit', 'media_single_attachment_fields_to_edit', 10, 2 );
83          echo get_media_item(
84              $id,
85              array(
86                  'send' => false,
87                  'delete' => true,
88              )
89          );
90          break;
91      default:
92          add_filter( 'attachment_fields_to_edit', 'media_post_single_attachment_fields_to_edit', 10, 2 );
93          echo get_media_item( $id );
94          break;
95  }
96  exit;
97  }

```

Fig 9.1.5

- 1) From the above figure, the request is made with an attachment_id and a fetch parameter. First, the code checks if the attachment_id and fetch parameters have been set in the request. If they have, it retrieves the post with the given attachment_id and checks if it is an attachment post type. If it is not, the script outputs the message "Invalid post type" and terminates.
- 2) Then, the code looks at the value of the fetch parameter and takes different actions based on its value using Switch-Case. If fetch is 3, the code outputs HTML containing a thumbnail image of the attachment, the attachment's title, and buttons for copying the attachment's URL to the clipboard and editing the attachment. If fetch is 2, the code outputs the media item with the attachment's edit form and a delete button. If fetch is any other value, the code outputs the media item with the attachment's edit form. Finally, the code exits the script.
- 3) The get_media_item() function is a WordPress function that retrieves a media item and displays it in the media library or media manager.

```

99 | check_admin_referer( 'media-form' );
100 | $post_id = 0;
101 | if ( isset( $_REQUEST['post_id'] ) ) {
102 |     $post_id = absint( $_REQUEST['post_id'] );
103 |     if ( ! get_post( $post_id ) || ! current_user_can( 'edit_post', $post_id ) ) {
104 |         $post_id = 0;
105 |     }
106 | }
107 | $id = media_handle_upload( 'async-upload', $post_id );
108 | if ( is_wp_error( $id ) ) {
109 |     printf(
110 |         '<div class="error-div error">%s <strong>%s</strong><br />%s</div>',
111 |         sprintf(
112 |             '<button type="button" class="dismiss button-link" onclick="jQuery(this).parents(\'div.media-item\').slideUp(200, function() {jQuery(this).remove();'
113 |             '%s'
114 |             '</button>\'',
115 |             _e( 'Dismiss' )
116 |         ),
117 |         sprintf(
118 |             /* translators: %s: Name of the file that failed to upload. */
119 |             _e( '%s#220;%s#221; has failed to upload.' ),
120 |             esc_html( $_FILES['async-upload']['name'] )
121 |         ),
122 |         esc_html( $id->get_error_message() )
123 |     );
124 |     exit;
125 | }

```

Fig 9.1.6

- 1) This code will first calls the `check_admin_referer()` function to verify that the request has a valid nonce (number used once). Then, it initializes a variable `$post_id` to 0.
- 2) Next, the code checks if the `post_id` parameter has been set in the request. If it has, it assigns the value of `post_id` to `$post_id` and casts it to an integer using the `absint()` function. `absint()` is a WordPress function that converts a value to a non-negative integer.
- 3) After that, the code checks if a post with the given `$post_id` exists and if the current user has permission to edit the post. If either of these checks fails, `$post_id` is reset to 0.
- 4) This code is likely used to retrieve the ID of a post that the user is trying to edit, and verify that the user has permission to do so. The `get_post()` function is a WordPress function that retrieves a post object based on its ID. The `current_user_can()` function is a WordPress function that checks if the current user has a certain capability. In this case, the capability being checked is `edit_post`.
- 5) The next if conditional statement handles the uploading of a file. It uses the `media_handle_upload()` function to handle the actual uploading of the file.
- 6) The `media_handle_upload()` function takes two arguments: the file input name and the ID of the post the file should be attached to. In this case, the file input name is 'async-upload' and the post ID is `$post_id`.

- 7) The `media_handle_upload()` function returns the ID of the attachment on success or a `WP_Error` object on failure. If a `WP_Error` object is returned, the code displays an error message with the name of the file that failed to upload and the error message returned by the `media_handle_upload()` function. The error message is displayed in a div with a class of "error-div error" and includes a dismiss button that allows the user to hide the error message.

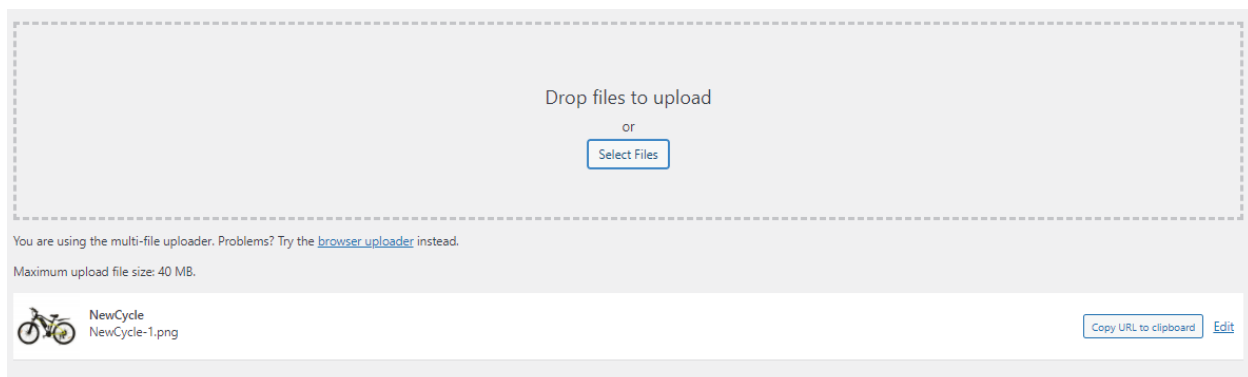
```

127 if ( $_REQUEST['short'] ) {
128     // Short form response - attachment ID only.
129     echo $id;
130 } else {
131     // Long form response - big chunk of HTML.
132     $type = $_REQUEST['type'];
133     echo apply_filters( "async_upload_{$type}", $id );
134 }

```

Fig 9.1.7

- 1) From the above figure we can say, it echoes the value of the `$id` variable if the `short` parameter is present, otherwise it applies a WordPress filter to the `$id` variable and echoes the result.
- 2) The `apply_filters` function is a WordPress function that allows plugins to "filter" the value of a variable before it is used. In this case, the name of the filter is constructed using the `$type` variable and the string "async_upload_".

**Fig 9.1.8: After uploading a media file.**

Conclusion:

In conclusion, the async-upload.php file plays a crucial role in the file upload process in the WordPress dashboard, allowing users to easily add media to their posts and pages without having to wait for the page to reload.

9.2 Customizing themes:

- I have added theme to my first Cycle shop.
- For adding themes we need to get-in to **plugins** in admin panel of WordPress (<http://localhost/wordpress/wp-admin/>)
- Then select Elementor website builder next install the same and activate.
- Now click on **Appearance** then themes and then add new.
- Right now we need to search for our desired theme (Say astra) then, install & activate.
- At last install the required plugin and apply the same to our new website.

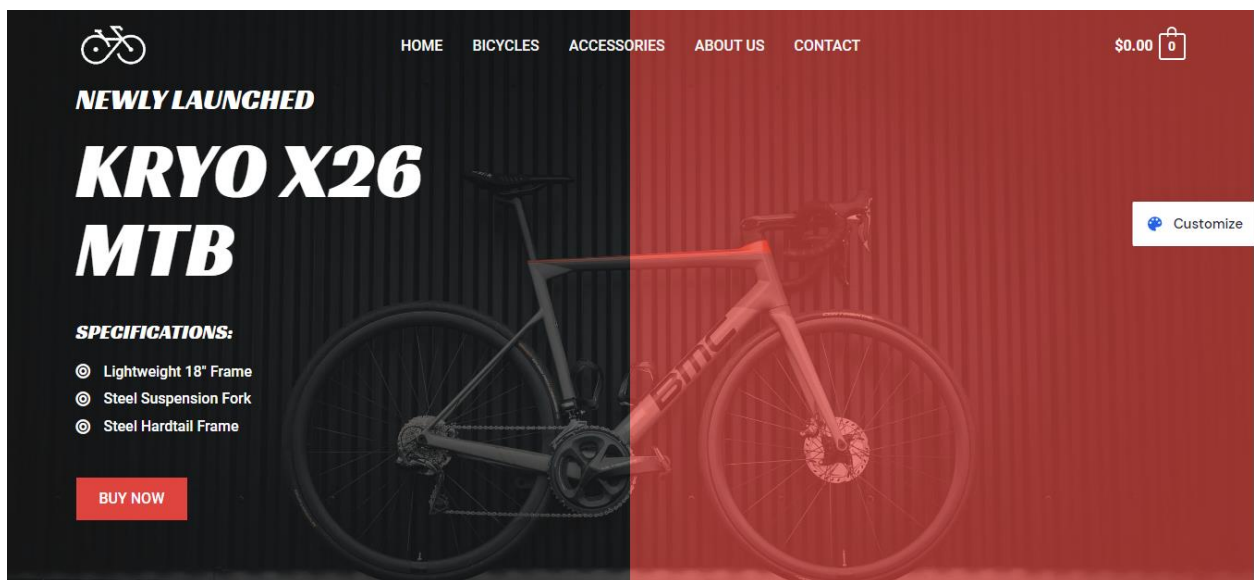


Fig 9.2.1: Newly added theme to my Cycle Shop

9.3 Adding variations:

The variations in a product can be added by setting the product data to variable product and add product variations, before that set the required attributes. By using this concept we can able to fix different rates for same products of different variations. (Fig 9.3.1)

Fig 9.3.1: Variation and Attributes in adding products

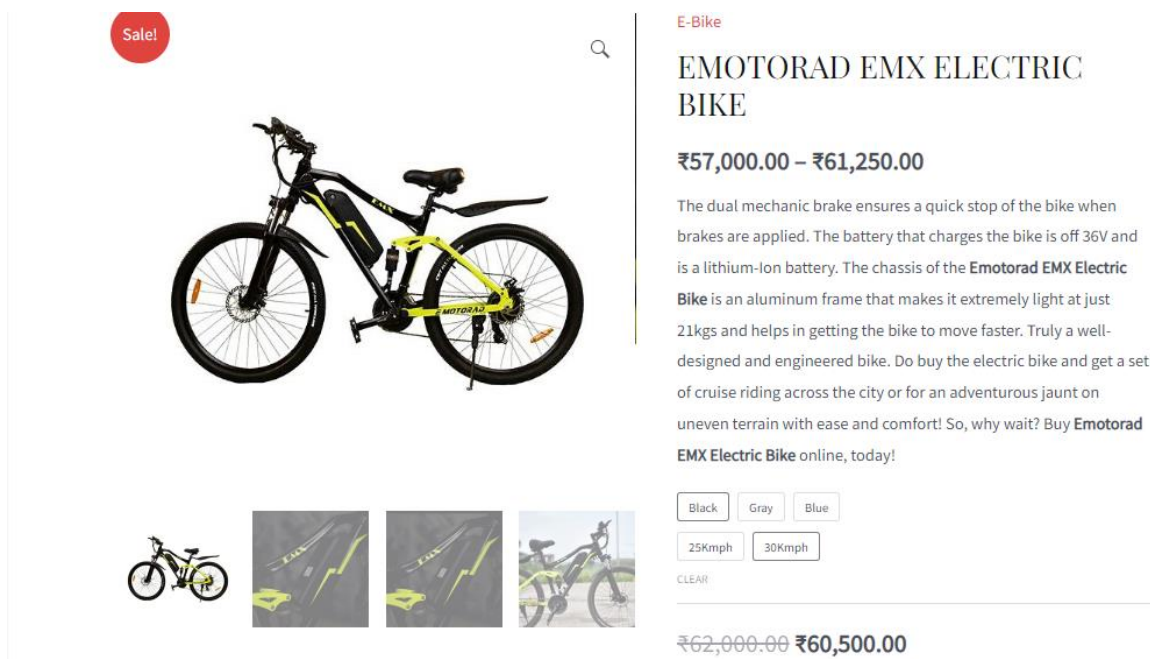


Fig 9.3.2: Store View of product with variations

References:

- ✓ https://www.w3schools.com/PHP/php_superglobals_request.asp
- ✓ <https://www.pontikis.net/blog/what-is-abspath-in-wordpress-and-how-to-use-for-security>
- ✓ https://developer.wordpress.org/reference/hooks/async_upload_type/
- ✓ <https://www.geeksforgeeks.org/difference-between-die-and-exit-functions-in-php/>
- ✓ https://www.isitwp.com/using-wp_die-for-error-messages/#:~:text=The%20function%20wp_die%20%28%29%20is%20designed%20to%20give,stop%20the%20plugin%20and%20show%20an%20error%20message.
- ✓ https://www.w3schools.com/php/func_network_header.asp
- ✓ <https://torquemag.io/2016/01/use-asynchronous-php-wordpress/>
- ✓ <https://www.techtarget.com/searchsecurity/definition/nonce>
- ✓ https://www.youtube.com/watch?v=6EukZDFE_Zg&list=LL&index=4
- ✓ https://www.flippercode.com/wordpress/how-to-use-async_upload_type-filter-in-wordpress/#:~:text=How%20to%20use%20async_upload_type%20filter%20in%20WordPress%201,apply_filters%20%28%20%22async_upload_%20%7B%24type%7D%22%2C%20int%20%24id%20%29%20
- ✓ <https://youtu.be/V7xaiEiNVVk>
- ✓ <https://youtu.be/QeTRZw86Fic>
- ✓ <https://youtu.be/gsJigjeSfe8>
- ✓ <https://youtu.be/bKw45wzAuaI>

Graspear Solutions Private Limited, Madurai.**10. Documentation on exploring “themes” code****Summary of topics learned & Work done:**

- ❖ Explored code for the module “themes” from the WordPress-Admin folder of XAMPP.
- ❖ Noted down the changes from local host while exploring this module and created documentation on the same.
- ❖

Introduction:

In WordPress, the [themes.css](#) file is a stylesheet that is used to apply styles to the front-end of a WordPress website. This file is included in the admin-header.php file of a WordPress theme, it is used to structure the content of a WordPress website. It is located in the `xampp/htdocs/wordpress/wp-content/themes/` directory, where `xampp` is the root directory within which we have installed WordPress. We can edit the `themes.css` file to customize the appearance of our WordPress website. For example, we can change the colors, fonts, and layout of our website by modifying the styles in the `themes.css` file. Any changes that we make to the `themes.css` file will only be applied to the front-end of the website when the theme is active.

Exploring Code:

Code	Functionality
<pre><code>.themes-php { overflow-y: scroll; }</code></pre>	<p>Setting the <code>overflow-y</code> property to <code>scroll</code> will add a vertical scrollbar to the element with the class <code>themes-php</code> when the content inside it is too large to fit within the element's dimensions.</p>

<pre><code>.theme-browser.search-loading { display: none; }</code></pre>	<p>The <code>.theme-browser.search-loading</code> (class selector) targets elements that have both the <code>theme-browser</code> and <code>search-loading</code> classes applied to them. The <code>display</code> property is used to specify the type of layout an element should use. The <code>none</code> value causes the element to not be displayed at all.</p>
<pre><code>.theme-browser .themes { clear: both; }</code></pre>	<p>The <code>clear: both</code> rule will cause the element to clear any floats.</p>
<pre><code>.themes-php .wrap h1 .button { margin-left: 20px; }</code></pre>	<p>This rule sets the <code>margin-left</code> property of the <code>.button</code> element to 20px. The <code>margin-left</code> property adds space to the left of an element.</p>
<pre><code>.themes-php .search-form { display: inline; }</code></pre>	<p>This rule is applied to elements with a class of <code>search-form</code> that are within an element with a class of <code>themes-php</code>. The <code>display</code> property is set to <code>inline</code>, which means that the element will be displayed as an inline element. (take up as much width as necessary)</p>
<pre><code>.themes-php .wp-filter-search { position: relative; top: -2px; left: 20px;</code></pre>	<p>position property is set to <code>relative</code>: the element will be positioned relative to its normal position. <code>top</code> and <code>left</code> properties are used to</p>

<pre>margin: 0; width: 280px; }</pre>	<p>make the element's position by -2px and 20px respectively. The margin property is set to 0: there will be no margin around the element. width property is set to 280px: the element will have a width of 280 pixels.</p>
<pre>.theme .notice, .theme .notice.is-dismissible { left: 0; margin: 0; position: absolute; right: 0; top: 0; }</pre>	<p>left, right, and top positions and the margin of these elements to and absolute positions the elements relative to the initial block.</p> <p>The .notice class is used to apply a particular style to a notice/ alert message displayed on the page & .is-dismissible class is probably used to add a dismiss button to the notice.</p>
<pre>.theme-browser .theme { cursor: pointer; float: left; margin: 0 4% 4% 0; position: relative; width: 30.6%; border: 1px solid #dcdcdc; box-shadow: 0 1px 1px -1px rgba(0, 0, 0, 0.1); box-sizing: border-box; }</pre>	<p>This rule specifies the element should floats to the left, and has a width of 30.6% of its parent element. It also has a border and a box shadow. And also it has specified margin with that element placed relative in position. It is likely used to customize the browser theme.</p>
<pre>.theme-browser .theme:nth-child(3n) { margin-right: 0; }</pre>	<p>The nth-child is used to select elements based on their position within their parent element. In this case, the 3n means to select every third</p>

	element. So this rule will apply to the 3rd, 6th, 9th, etc. .theme elements within .theme-browser.
<pre>.theme-browser .theme .theme-name { font-size: 15px; font-weight: 600; height: 18px; margin: 0; padding: 15px; box-shadow: inset 0 1px 0 rgba(0, 0, 0, 0.1); overflow: hidden; white-space: nowrap; text-overflow: ellipsis; background: #fff; background: rgba(255, 255, 255, 0.65); }</pre>	<p>The font size is set to 15 pixels, the font weight is set to 600 (bold), the height is set to 18 pixels, and the margins and padding are set to 15 pixels. The box shadow is set to an inset shadow with a color of rgba(0, 0, 0, 0.1). The overflow is set to hidden, the white space is set to nowrap (two or more white-spaces will appear as a single white-space), and the text-overflow is set to ellipsis (overflow content is signaled to user). Finally, the background color is set to white, with an alpha value of 0.65 (transparent).</p>
<pre>.theme-browser .theme .theme-actions { -ms-filter: "progid: DXImageTransform.Microsoft. Alpha(Opacity=0)"; opacity: 0; transition: opacity 0.1s ease-in-out; height: auto; background: rgba(246, 247, 247, 0.7); border-left: 1px solid rgba(0, 0, 0, 0.05);}</pre>	<p>The element's opacity is set to 0 and height to auto, opacity property is set for the time duration of 0.1 seconds with an ease-in-out timing function.</p> <p>The border-left property is set to the left border of an element which is having 1-pixel solid black border with an opacity of 5%.</p>

<pre>.theme-browser .theme:hover . theme-actions, .theme-browser .theme.focus. theme-actions { -ms-filter: "progid:DXImageTransform.Microsoft. Alpha(Opacity=100)"; opacity: 1; }</pre>	<p>It is applied to elements with the class "theme-actions" within an element with the class "theme" that is either being hovered or focused within an element with the class "theme-browser". The opacity is set to 1 so it is fully opaque and not transparent. The "-ms-filter" line is not necessary (Microsoft-specific property for setting the opacity in Internet Explorer)</p>
<pre>.theme-browser.theme.theme-actions .button-primary { margin-right: 3px; }</pre>	<p>The margin-right property sets the right margin of an element. The value of 3px specifies the size of the margin. This rule will cause the element with the .button-primary class to have a right margin that is 3 pixels wide.</p>
<pre>.theme-browser .theme. theme-actions .button { float: none; margin-left: 3px; }</pre>	<p>The float property specifies whether an element should float or not. The value none means that the element will not float. The margin-left makes the .button class to have a left margin that is 3 pixels wide.</p>
<pre>.theme-browser .theme . theme-screenshot { display: block; overflow: hidden; position: relative;</pre>	<p>This rule is applied for the theme-screenshot within an element with a class of theme-browser and theme. The display is set to block which means the element will be a block-level</p>

<pre> -webkit-backface-visibility: hidden; transition: opacity 0.2s ease-in- out; } </pre>	<p>element that takes up the full width of its parent container. The overflow property is set to hidden so as the element will be hidden from view when overflow occurs. The -webkit-backface-visibility property determines whether or not an element should be visible when not facing the screen. Here, this value is set to hidden, which means the element will not be visible when it's not facing the screen. Finally, the element's opacity (transparency) will transition over 0.2 seconds</p>
<pre> .theme-browser .theme . theme-screenshot:after { content: ""; display: block; padding-top: 66.66666%; } </pre>	<p>The content property is set to an empty string so, no content will be inserted. The display is set to block, so the pseudo-element will be a block-level element that takes up the full width of its parent container. The padding-top property is set to 66.66666%, which means the top padding of the element will be 66.66666% of the width of the element.</p>
<pre> .theme-browser .theme. theme-screenshot img { height: auto; position: absolute; left: 0; top: 0; width: 100%; transition: opacity 0.2s ease-in-out; } </pre>	<p>The height is set to auto, which means the height of the element will be determined by the content of the element. The position is set to absolute, which means the element is positioned relative to its nearest positioned ancestor. Both left & top are set to 0, so the element will be positioned at the top left corner</p>

}	of its parent element. The width is set to 100% so that the element will be 100% of the width of its parent element and the element's opacity will transition over 0.2 seconds.
<pre>.theme-browser .theme:hover. theme-screenshot, .theme-browser .theme.focus. theme-screenshot { background: #fff; }</pre>	The hover pseudo-class is used to select elements when the user hovers over them with the mouse. The .focus class is used to select elements that have focus, either by the user tabbing to them or by the user clicking on them. The background color is set to White.
<pre>.theme-browser .theme.focus .more- details { opacity: 1; }</pre>	This CSS rule specifies the appearance of an element with the class .more-details that is a child of an element with the class .theme that is itself a child of an element with the class .theme-browser. The opacity property is set to 1, which means the element will be fully opaque.
<pre>.theme-browser .theme. active.focus .theme-actions { display: block; }</pre>	This theme is applied to an element with the class .theme-actions that is a child of an element with the class .theme.active.focus. This element is itself a child of an element with the class .theme-browser. The display property is set to block, so it will be displayed as a block-level element by taking up the full width of their parent element.

<pre>.theme-browser .customize-control. theme.active .theme-name { padding-right: 15px; }</pre>	<p>This theme is set to an element with the class <code>.theme-browser</code> that is a parent element to an element with the class <code>.customize-control</code> and the class <code>.theme-active</code>. The targeted element also has a child element with the class <code>.theme-name</code>. This code is adding a right padding of 15 pixels to the element with the class <code>.theme-name</code>.</p>
<pre>.theme-browser .theme.active .theme-name span { font-weight: 600; }</pre>	<p>This theme is applied to span element that is a child of an element with a class of <code>theme-name</code> which is itself a child of an element with classes <code>theme-browser</code> and <code>theme</code> and the class <code>active</code>. The font-weight, which is set to 600, so it will make the text bolder (Semi-Blod)</p>
<pre>.theme-browser .theme.active .theme-actions { background: rgba(44, 51, 56, 0.7); border-left: none; opacity: 1; }</pre>	<p>The background color is set to a partially transparent dark grey. The assignment of border-left property to none so there is no left border. The background property specifies the background color or image for an element. The opacity value is set to 1 so the element is fully opaque.</p>
<pre>.theme-id-container { position: relative; }</pre>	<p>This rule is applied to the class <code>.theme-id-container</code>. It sets the position property of the</p>

	element to relative and so the element is positioned relative to its normal position.
--	---

Table 10.1 Exploration of themes.css file code

From the above table we can say that, by customizing the properties such as colour, position, border, text, font, padding, margin, transform, align, display etc. we can able to get a different look for different features that we have in our site like login page, home page, search bar theme, background themes while navigating to other pages etc. using WordPress on 'themes.css' file.

Conclusion:

In conclusion, the themes.css file plays a crucial role in changing themes for different pages/ options in the WordPress dashboard and the availability of customization will definitely help us to modify themes to create attractive web pages.

References:

- ✓ <https://www.geeksforgeeks.org/css-scroll-snap/#:~:text=The%20CSS%20Scroll%20Snap%20is%20an%20inbuilt%20module.,work%20when%20the%20scrolling%20operation%20did%20its%20job>
- ✓ <https://www.bitdegree.org/learn/css-display>
- ✓ <https://www.educba.com/css-position-relative>
- ✓ <https://www.w3resource.com/css/user-interface/pointer.php>
- ✓ <https://www.geeksforgeeks.org/css-white-space-property/>
- ✓ <https://developer.mozilla.org/en-US/docs/Web/CSS/text-overflow#:~:text=The%20text-overflow%20CSS%20property%20sets%20how%20hidden%20overflow,to%20set%20other%20CSS%20properties%3A%20overflow%20and%20white-space>
- ✓ https://www.w3schools.com/csS/css_overflow.asp
- ✓ <https://9to5answer.com/differences-between-css3-hover-and-focus>

Graspear Solutions Private Limited, Madurai.**11. A Project on WordPress Web Development using WooCommerce Plugin****Abstract:**

The goal was to create a WooCommerce website using an open source e-commerce plugin for WordPress. Actually, I was given the task of creating a project for online fish sales. This project is a web-based shopping system for an existing shop. And it aims at making the shopping experience easy to access from anywhere at any time. At the meantime, it provides flexible payment methods for our purchase that we made. It will be beneficial for the fishermen's well-being. This was done in order to get better understanding of the skills that are needed in the area of website design and development. There were many things that were taken in order to submit a successful project.

Introduction:

WooCommerce is an open-source e-commerce plugin for WordPress. It is designed for small to large-sized online merchants using WordPress. One of the main advantage of using WooCommerce is that, when we want to migrate to a different platform we can well able to export all the works that we have done under WooCommerce to that particular platform. So that this platform has been preferred over others. The availability of plugins makes WordPress more colorful to use. The fishing industry is very important as it boosts the GDP of our country and peoples know that seafoods are rich in protein. So, if we create a website for this case, it will reach a larger number of individuals. This project aims at creating an e-commerce website for selling fishes in the name of “JK FishMart”.

Objective:

The project objective is to deliver the online shopping application which works over various platforms. This project is an attempt to provide a fish selling platform to reach the customers through online shopping. It helps buying the products in the shop anywhere through

internet by using an android/ desktop/ tablet device. Thus, the customer will get the service of online shopping and home delivery from his favorite shop. This system can be implemented to any shop in the locality. In general, the objective of this project is to provide a simple, secure, flexible, fast online selling platform for the enhancement of both merchants and customers.

Prerequisites:

The following technologies/ concepts were used by me to finish this project:

- Basics of HTML, CSS, PHP for exploring code.
- XAMPP application.
- Installation of WordPress
- Installation of WooCommerce plugin.

Target Output:

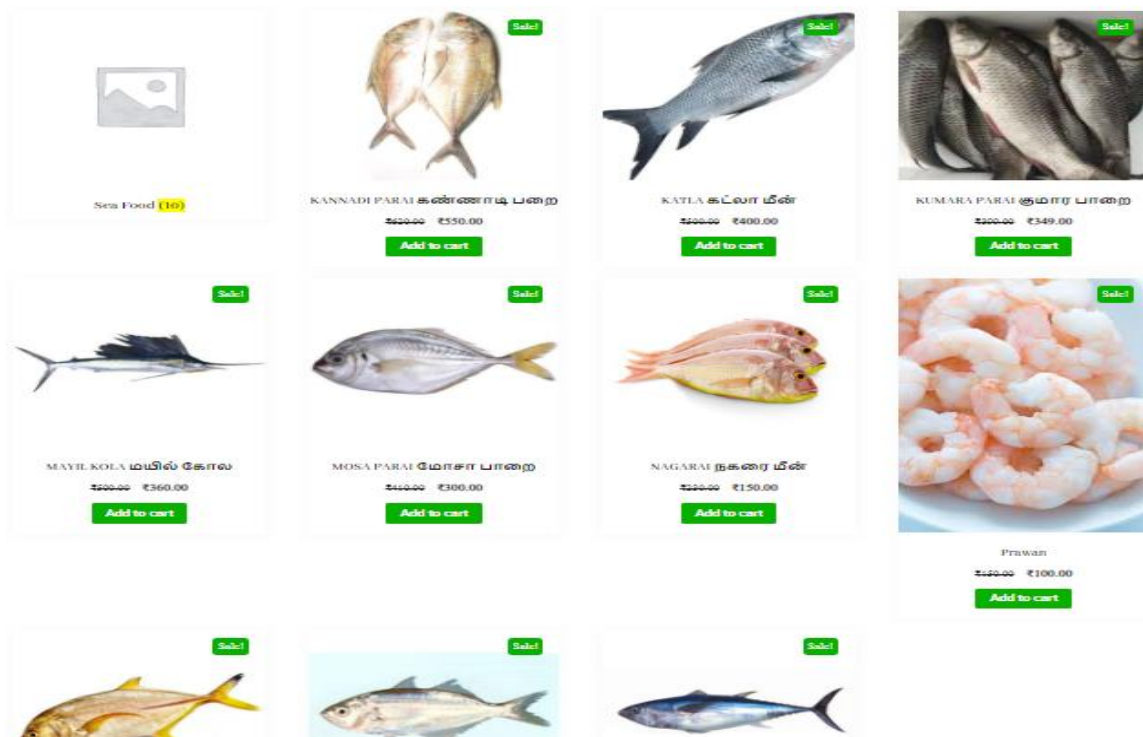


Fig 1: Shop view of JK FishMart

Checkout

Have a coupon? [Click here to enter your code](#)

Billing details

First name *

Jeyakumar

Last name *

N K

Company name (optional)

GSPL

Country / Region *

India

Street address *

8-7-8

Vaiagi Nadhi Street

Town / City *

Madurai

State *

Tamil Nadu

Email address *

jeyamnk03@gmail.com

☐ Ship to a different address?

Order notes (optional)

Notes about your order, e.g. special notes for delivery.

Your order

Product	Subtotal
MOSA PARAI மோசா பரைய் × 1	₹300.00
Subtotal	₹300.00
Shipping	Free shipping
Total	₹300.00

☒ Direct bank transfer

Make your payment directly into our bank account. Please use your Order ID as the payment reference. Your order will not be shipped until the funds have cleared in our account.

☐ Check payments

☐ Cash on delivery

Your personal data will be used to process your order, support your experience throughout this website, and for other purposes described in our [privacy policy](#).

☐ I have read and agree to the website [terms and conditions](#) *

Place order

Fig 2: Checkout page of JK FishMart

Order received

Thank you. Your order has been received.

ORDER NUMBER: 5680	DATE: January 13, 2023	EMAIL: jeyamnkjk03@gmail.com	TOTAL: ₹300.00	PAYMENT METHOD: Direct bank transfer
-----------------------	---------------------------	---------------------------------	-------------------	---

Order details

Product	Total
MOSA PARAI மோசா பரையி × 1	₹300.00
Subtotal:	₹300.00
Shipping:	Free shipping
Payment method:	Direct bank transfer
Total:	₹300.00

Billing address

GSPL
Jeyakumar N K
8-7-8
Vaiagi Nadhi Street
Madurai 625009
Tamil Nadu
📞 9488465169
✉ jeyamnkjk03@gmail.com

Shipping address

GSPL
Jeyakumar N K
8-7-8
Vaiagi Nadhi Street
Madurai 625009
Tamil Nadu

Fig 3: Order Confirmation Page

How I developed my online fish shop (JK FishMart)?

I just did the following to develop JK FishMart website.

1. How to install WordPress?

- The installation of WordPress requires the following,
 - MySQL
 - Webserver (XAMPP)
 - PHP
- After fulfilling these requirements, we need to download WordPress
- Once it is over, we need to unzip WordPress and start the site.
- Then we need to create an empty Database.

2. Installation of WooCommerce plugin:

- To install WooCommerce plugin first we need to get-in to the admin page of WordPress
- Then click on Plugins -> Add new -> and then search for WooCommerce. Install & activate the same.
- Fill the details asked from their side to complete the installation process.

3. Procedure:

Steps involved in creation of new website using WordPress includes the following

Step 1: Install and Setup WooCommerce

Step 2: Choose a Perfect WooCommerce Theme

Step 3: Add Products to Online Store

Step 4: Setup Other WooCommerce Services

Step 5: Install Additional Plugins and Extensions

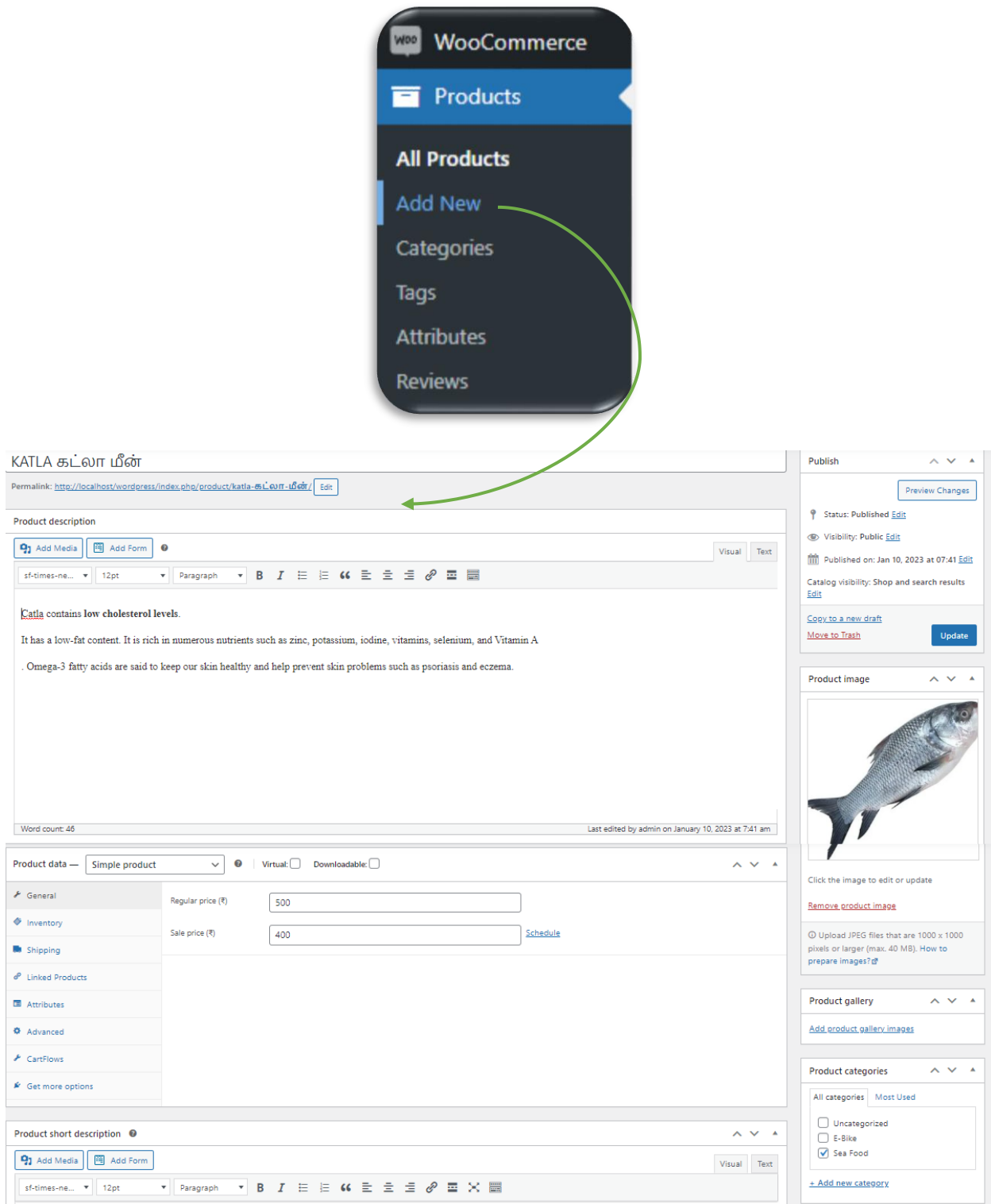
Already we finished step 1 according to our procedure. So now we need to add a theme to perform step 2.

Adding theme to our site:

- For adding themes we need to get-in to **plugins** in admin panel of WordPress (<http://localhost/wordpress/wp-admin/>)
- Then select Elementor website builder next install the same and activate.
- Now click on **Appearance** then themes and then add new.
- Right now we need to search for our desired theme (Say astra) then, install & activate. So now step 2 also over.

Adding Products to our store:

- The products can be added from the admin panel by getting inside WooCommerce -> Product -> Add New



The screenshot displays the WooCommerce 'Add New Product' page. A floating menu is shown above the main content area, with a green arrow pointing from the 'Add New' option to the 'Add New Product' button. The main content area includes a product title field with the text 'KATLA கடலா மீன்', a product description field with the text 'Katla contains low cholesterol levels. It has a low-fat content. It is rich in numerous nutrients such as zinc, potassium, iodine, vitamins, selenium, and Vitamin A. Omega-3 fatty acids are said to keep our skin healthy and help prevent skin problems such as psoriasis and eczema.', and a product data field with a regular price of 500 and a sale price of 400. The right sidebar shows the 'Publish' status, a product image of a fish, and a list of product categories including 'Sea Food'.

Fig 4: Adding new products for our store

We can also have variations while adding products to our store. This can be done by setting the product data to variable product and add product variations, before that set the required attributes. By using this concept we can able to fix different rates for same products of different variations.

Bulk actions

Apply

Select a category

Filter by product type

Filter by stock status

Filter

10 items












<input type="checkbox"/>		Name	SKU	Stock	Price	Categories	Tags	★	Date
<input type="checkbox"/>		KATLA கடலா மீன்	—	In stock	₹500.00 ₹400.00	Sea Food	—	☆	Published 2023/01/10 at 7:41 am
<input type="checkbox"/>		Prawan	—	In stock	₹450.00 ₹100.00	Sea Food	—	☆	Published 2023/01/10 at 7:35 am
<input type="checkbox"/>		YELLOW FIN TUNA (BONE LESS)மஞ்சள் துபெட்டி டீனா	—	In stock	₹700.00 ₹650.00	Sea Food	—	☆	Published 2023/01/10 at 7:32 am
<input type="checkbox"/>		VILLAI SUDUMBU வெள்ளை சுதும்பு	—	In stock	₹300.00 ₹250.00	Sea Food	—	☆	Published 2023/01/10 at 7:27 am
<input type="checkbox"/>		KANNADI PARAI கண்ணாடி பறை	—	In stock	₹600.00 ₹550.00	Sea Food	—	☆	Published 2023/01/10 at 7:22 am
<input type="checkbox"/>		MOSA PARAI மோசா பறை	—	In stock	₹410.00 ₹300.00	Sea Food	—	☆	Published 2023/01/10 at 7:19 am
<input type="checkbox"/>		THENGA PARAI தேங்காய் பறை	—	In stock	₹400.00 ₹320.00	Sea Food	—	☆	Published 2023/01/10 at 7:16 am
<input type="checkbox"/>		KUMARA PARAI கமார பறை	—	In stock	₹399.00 ₹349.00	Sea Food	—	☆	Published 2023/01/10 at 7:11 am
<input type="checkbox"/>		MAYIL KOLA மயில் கோலா	—	In stock	₹500.00 ₹360.00	Sea Food	—	☆	Published 2023/01/10 at 7:06 am
<input type="checkbox"/>		NAGARAI நகரை மீன்	—	In stock	₹230.00 ₹150.00	Sea Food	—	☆	Published 2023/01/10 at 6:48 am

Fig 5: List of products added to JK FishMart

In such a way, all the products which needs to be displayed in our shop can be added here. So, with that step 3 is also over.

Setting up other WooCommerce Services:

- Even though we have added products to our we still need to set up other WooCommerce services like Payment gateways, adding taxes, shipping details, personalization of our store.
- It can be done by entering WooCommerce -> Home -> Set up Payment
- We are allowed to setup multiple payment gateways for our shop like cash on delivery, Direct bank transfer, Stripe, Rozorpay, PayU etc.
- Here is an example of setting payment gateway for direct bank transfer (as shown in Figure 6)

Direct bank transfer ⓘ

Take payments in person via BACS. More commonly known as direct bank/wire transfer.

Enable/Disable ☒ Enable bank transfer

Title ⓘ

Description ⓘ

Instructions ⓘ

Account details:

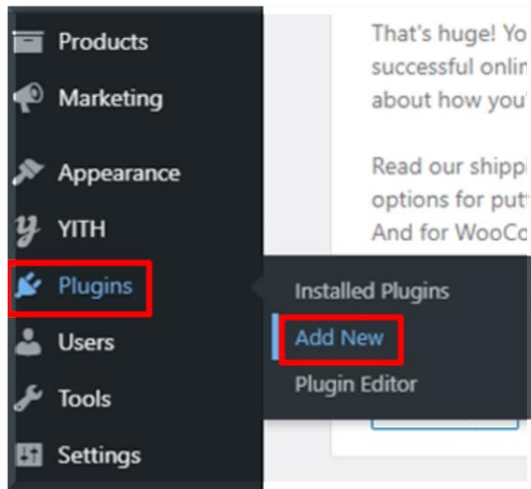
Account name	Account number	Bank name	IFSC	IBAN	BIC / Swift
JK FishMart	918273645510	State bank of India	SBIN0000869	SBININ88768	SBININ88328

Fig 6: Direct Bank Transfer payment setup

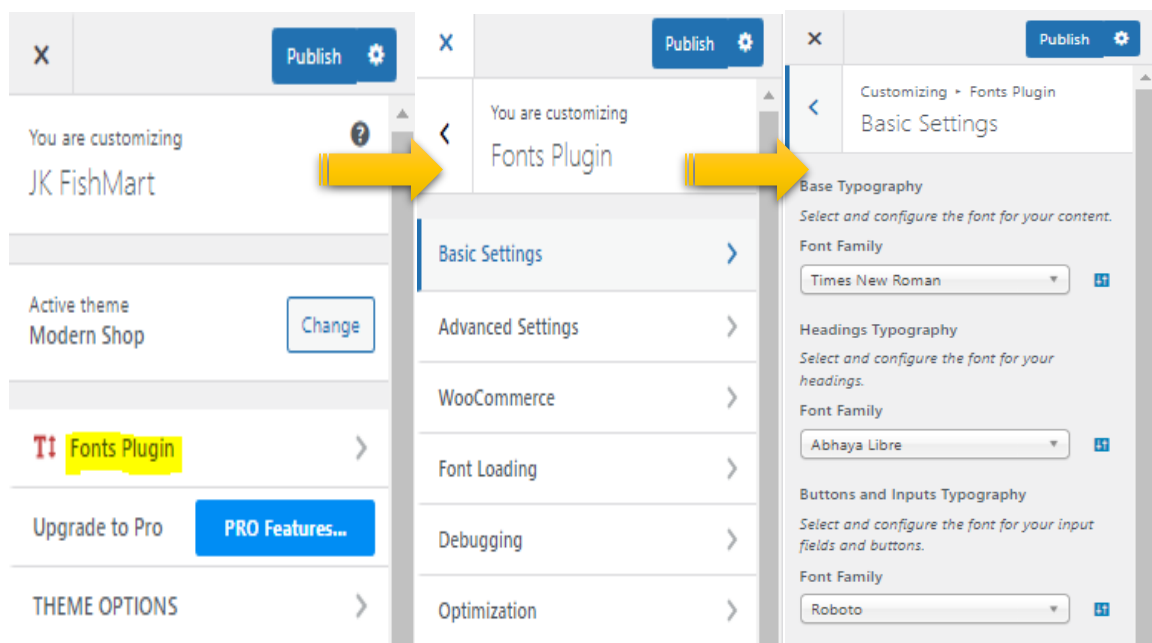
- In this way, we can add all the other payment methods through which we wish our customers to pay for their purchased products.
- The other WooCommerce services like taxes can also be added manually, through plugins or else we can simply set like “I don’t charge sales tax”.
- So that, step 4 is also over.

Installation of additional Plugins & Extensions:

- The further customization of our web pages can be done using additional plugins and extensions.
- That is to extend the functionality of our e-commerce website.
- Many plugins were employed during the implementation of JK FishMart; let us discuss one among them in detail.
- To customize fonts for different sections of our site we can well make use of font plugin.
- To install a plugin, we first need to open WordPress-admin page then need to click Plugins -> Add new
- Now we need to search for required plugin to change font, for this I used ‘Google Font Typography’

**Fig 7: Installation of Plugins****Fig 8: Required Plugin**

- Then install and activate the same.
- To customize the font, we need to click on customize from the site view of admin panel as shown in the figure 9.
- There we can able to find various font settings to change header & footer fonts, content fonts, button fonts, input fonts, etc.,

**Fig 9: Font customization using an additional plugin**

- This allows us to have multiple fonts for different areas of our website. So with this, step 5 of our procedure is also over. And now we've successfully built a website.

Store View of JK FishMart:

Pages used:

- Home
 - About us
 - Shop
 - Cart
 - My Account
 - Checkout
 - Contact Us
 - Menu
- As usual, JK FishMart web page also has three parts like Header, Body and Footer sections. The header section cover all the above said pages as shown in the figure 10.

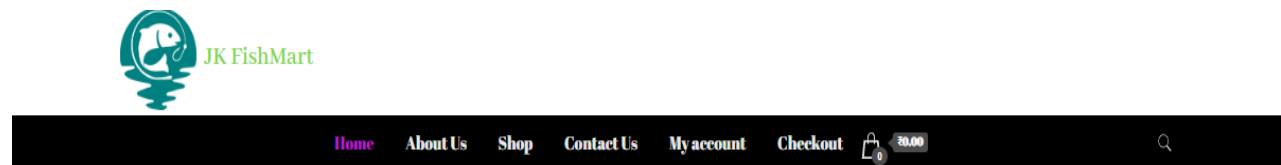


Fig 10: Header section of JK FishMart

- The body section of this website changes with respect to the page that we are visiting. The header and footer contents remains the same irrespective of different pages.
- The footer section will have the details of company's social media pages, address details etc., as shown in the figure 11.
- In such a way that, the home page of JK FishMart will appears as shown in the figure 12.

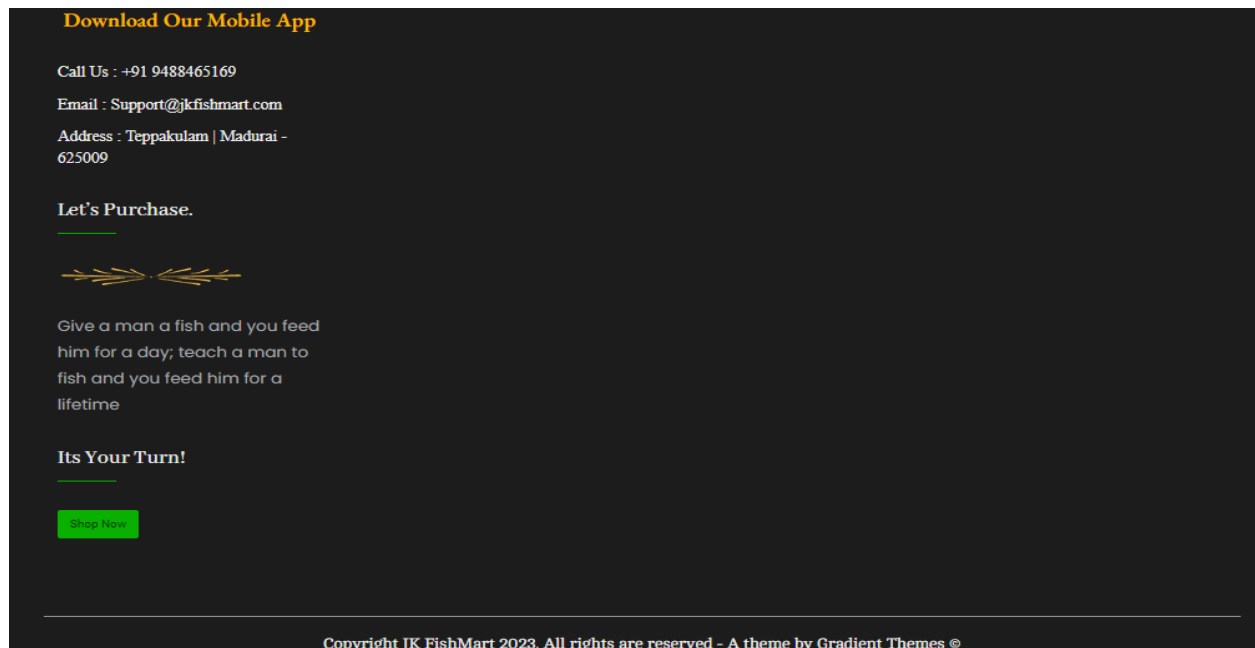
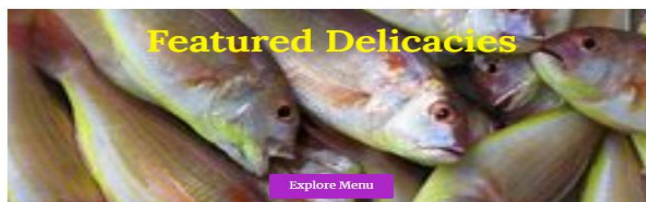


Fig 11: Footer Section of JK FishMart

Home



All fishes are well preserved using advanced preservation techniques

The JK FishMart



Our Delicious Story

JK FishMart is a brand in wholesale sea food trading business which has supplied and continues to supply bulk sea products to hotels and caterers for more than a decade in South Tamil Nadu. This company is managed by professionals in this field. We have gone to the great lengths to find you the best tasting seafood, source from suppliers who share our passion for quality product.

Taste it Now

Recent Posts

Welcome to JK FishMart
Hello world!

Recent Comments

A WordPress Commenter on Hello world!

Meta

Site Admin
Log out
Entries feed
Comments feed

Fig 12a: Home Page of JK FishMart

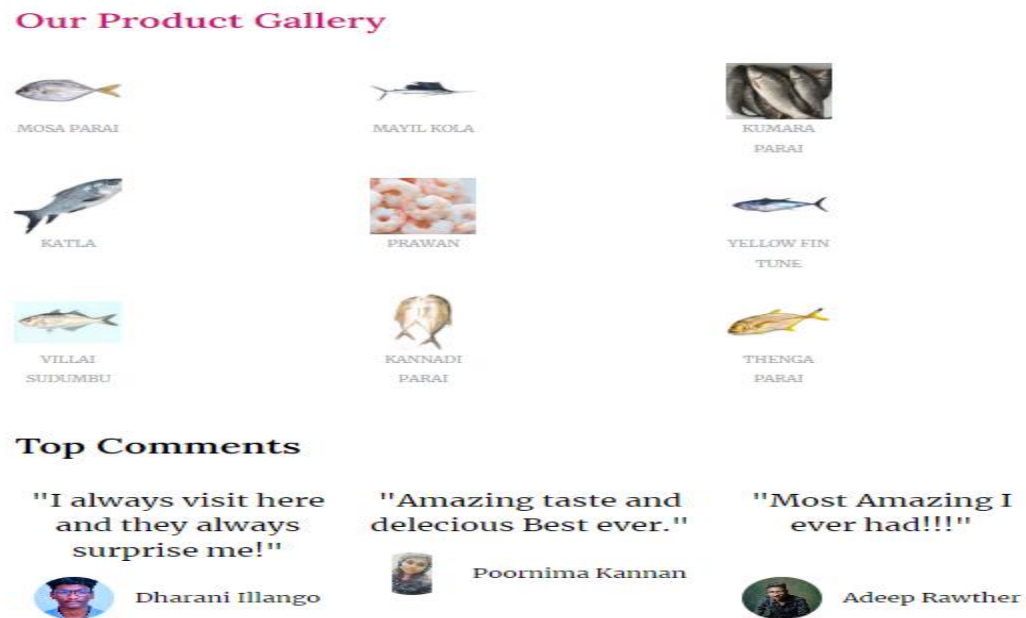


Fig 12b: Home Page of JK FishMart

- Generally, the information like motive, history, vision, mission, reviews of the company are stated in About us page as shown in the figure 13.

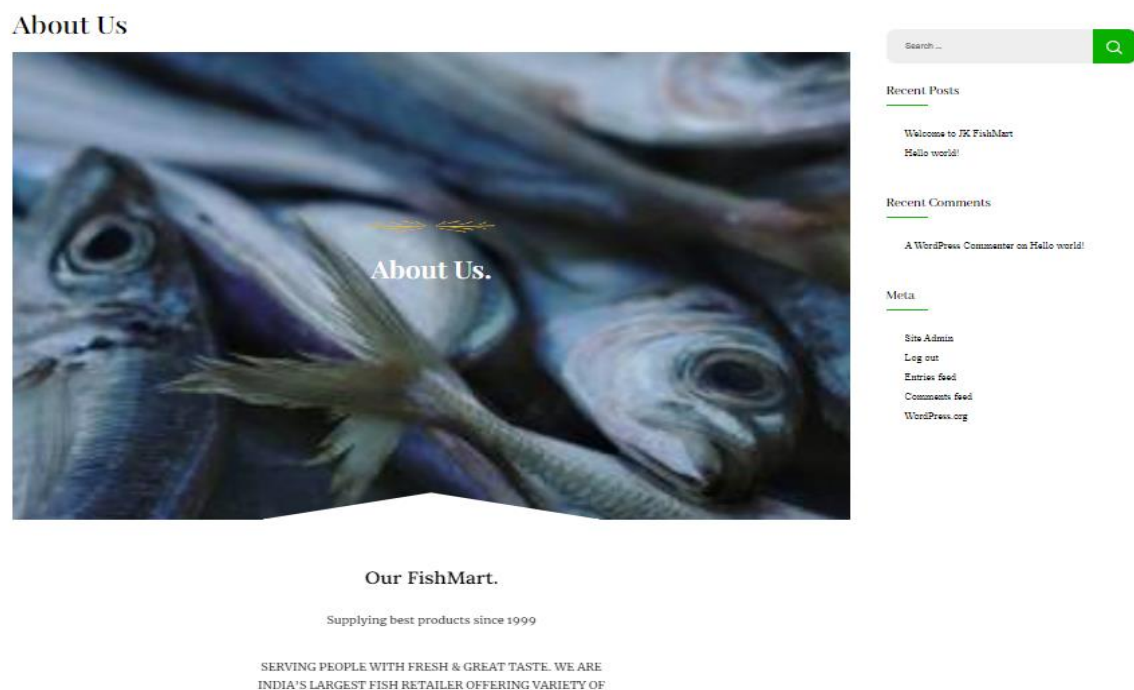


Fig 13: A portion of About us page



Fig 14: Menu List

- These two pages (Home, About Us) was not much embedded with main functions of this website except Explore Menu.
- The Menu list will have all the products of the shop at one place where we get to know about price rate of products along with some description.
- This page is only to display the available products of the shop, which is different from shop page of the same site. So, instead of adding the items to our cart, we may use this menu list as our reference to purchase.

Shop page:

- This page plays a major role which is just going to make the customer to buy our product. So it must be attractive as much as possible. So as to do that we need to use appropriate theme which matches well for our product to sold out as shown in the figure 1.
- If we let a customer to purchase a product, first he/ she need to add the product to their cart. Let me purchase a product in JK FishMart to see how it actually works.
- Here, I'd like to purchase KANNADI PARAI fish.
- Once the purchase is over we need to either view our cart or visit checkout page for payment details as shown in the figure 2.
- After that we need to fill the basic details asked for them to proceed payment.
- Once completed, we must select the payment method with which we will pay for our purchased item.



Fig 15: Add to cart

Your order

Product	Subtotal
KANNADI PARAI ಕಣ್ಣನಾಡಿ ಪಠೆ × 1	₹550.00
Subtotal	₹550.00
Shipping	Free shipping
Total	₹550.00

☒ Direct bank transfer

Make your payment directly into our bank account. Please use your Order ID as the payment reference. Your order will not be shipped until the funds have cleared in our account.

☐ Check payments


☐ Cash on delivery

Your personal data will be used to process your order, support your experience throughout this website, and for other purposes described in

Fig 16: Order Details along with payment mode

After clicking proceed to pay, we'll be redirected to a page where it generates a bill of purchase for our product. Before that, if we have a coupon, we may use it to get a discount on the product as shown in figure 17.

✔ Coupon code applied successfully.

Product	Price	Quantity	Subtotal
 KANNADI PARAI கண்ணாடி பரையு	₹550.00	1	₹550.00

Coupon code **Apply coupon** **Update cart**

Cart totals

Subtotal ₹550.00

Coupon: newjk12 -₹50.00 [\[Remove\]](#)

Free shipping

Shipping Shipping to 8-7-8, Vaiagi Nadhi Street, Madurai 625009, Tamil Nadu. [Change address](#)

Total ₹500.00

Proceed to checkout

Fig 17: Applying Coupon on our product

WooCommerce

- Home 2
- Orders 1
- Customers
- Coupons**
- Reports
- Settings
- Status
- Extensions
- Variation Swatches

newjk12

[Generate coupon code](#)

Sunday Special

Coupon data

General

Discount type: Fixed cart discount

Usage restriction

Coupon amount: 50

Allow free shipping: ☒ Check this box if the coupon grants free shipping. A [free shipping method](#) must be enabled ("Free Shipping Requires" setting).

Usage limits

Coupon expiry date: 2023-01-17

Fig 18: Generating a coupon

- The coupon can be generated from admin panel of WordPress by entering WooCommerce -> Coupons.
- Then, we need to add our new coupon. It is possible to provide expiration date for the coupon as shown in the figure 18.

Order received

Thank you. Your order has been received.

ORDER NUMBER:	DATE:	EMAIL:	TOTAL:	PAYMENT METHOD:
5710	January 15, 2023	jeyamnkjk03@gmail.com	₹500.00	Direct bank transfer

Our bank details

JK FishMart:

BANK:	ACCOUNT NUMBER:	IFSC:	IBAN:	BIC:
State bank of India	918273645510	SBIN0000869	SBININBB768	SBININBB328

Order details

Product	Total
KANNADI PARAI கன்னடா பறவை × 1	₹550.00
Subtotal:	₹550.00
Discount:	-₹50.00
Shipping:	Free shipping
Payment method:	Direct bank transfer
Total:	₹500.00

Billing address

GSPL
Jeyakumar N K
8-7-8
Vaiagi Nadhi Street
Madurai 625009
Tamil Nadu
📞 9488465169
✉ jeyamnkjk03@gmail.com

Shipping address

GSPL
Jeyakumar N K
8-7-8
Vaiagi Nadhi Street
Madurai 625009
Tamil Nadu

Fig 19: Order Confirmation Report

From figure 19, we can able to see the bank details associated with confirmation report this is because, we opted for Direct Bank Transfer in figure 16.

Status of our purchase:

- The status of our purchase may either be 'Completed' (or) 'Processing' (or) 'On hold' which will be decided from the admin panel based on the delivery of the product.

- We can find the same under WooCommerce -> Orders. It will display list of products purchased from the shop. From where we can control order status as shown in figure 20.

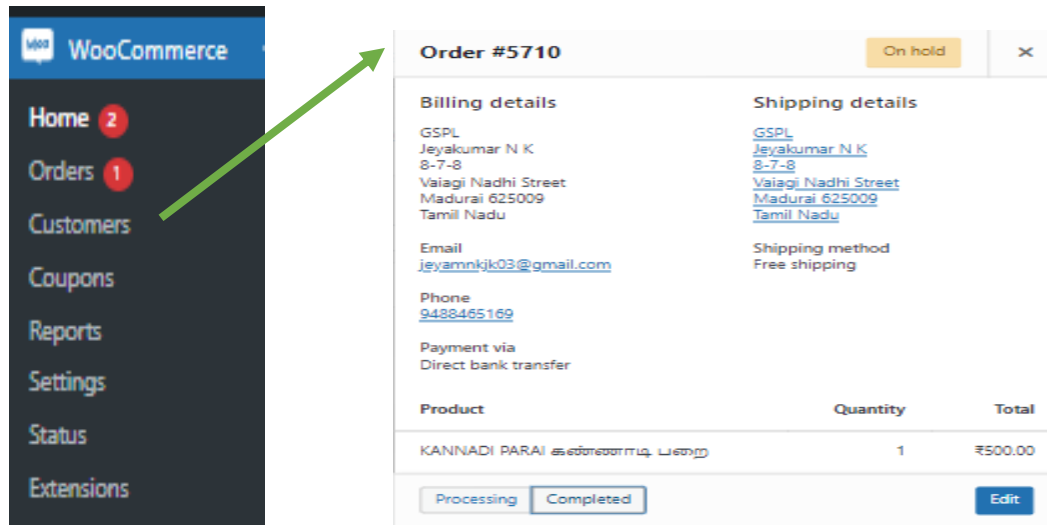


Fig 20: Admin Panel view of purchased product

Conclusion:

In conclusion, this is my report on WooCommerce web development and I have explained about building website like my shop (JK FishMart), its important, what it is in general, and also some functions about it too. This application will surely help us to cover maximum number of customers from anywhere at any time through online shopping. I hope this report was helpful whoever decides to read this report.

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- ✓ <https://woocommerce.com/document/woocommerce-shortcodes/>
- ✓ <https://wordpress.org/download/>
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- ✓ <https://nextbigtechnology.com/how-to-install-woocommerce/#:~:text=Follow%20the%20procedures%20outlined%20below%20to%20install%20WooCommerce,you%20are%20ready%20to%20use%20the%20WooCommerce%20plugin>