



Independent University, Bangladesh

Website Design & Development in Angular

An undergraduate internship report submitted by

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ID: 1720672

In consideration of the partial fulfillment of the requirements for the degree of

Bachelor of Science

In

Computer Science

Supervised by: Mohammad Noor Nabi

Department of Computer Science & Engineering

School of Engineering, Technology & Sciences

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Letter of Transmittal

Date:

Mohammad Noor Nabi

School of Computer Science and Engineering

Independent University Bangladesh.

Subject: Submission of Internship Report.

Dear Sir,

It is a great pleasure to submit my report on Internship at SoftLab IT. I have tried to narrate my project works, achievements and experiences in this report. All the works presented here are done with utmost sincerity and honesty.

During the internship period, I have served in SoftLab IT for three months where I have not only gained real life work experience but understood the process of the department and its various aspects. This report includes a detailed review of the office as well as the functionalities of the department. As a document of my effort during the internship periods I have conducted all the project works that I have done during my internship periods, especially their requirement, functionalities and technical specifications.

I pray and hope this report will be quite interesting and fulfil your expectations. I have tried my best to avoid my deficiencies and hope that my report will satisfy you. I also would like to thank you again for giving me the opportunity to submit this report.

Sincerely,

Avirup Mondal,

Id – 1720672.

Evaluation Committee

Signature :.....

Name:.....

Supervisor:.....

Signature :.....

Name:.....

External Examiner:.....

Signature :.....

Name:.....

External Examiner:.....

Signature :.....

Name:.....

Converner:.....

Letter of Endorsement

To Whom It May Concern

Subject: Approval of the report.

This letter is to certify that all the information mentioned in this document is true and confidential to the company. The project mentioned here has been successfully done with the involvement of Avirup Mondal, Bachelor in Computer Science, Independent University, Bangladesh (IUB).

I wish her all the best and hope she will lead a successful career.

Internship Supervisor

Signature

Hafizur Rahman Sozol

CEO of SoftLab IT.

Approval

This report entitled

Intern Web Designer

By

Avirup Mondal

Has been approved by

The Department of Computer Science and Engineering

Independent University, Bangladesh (IUB)

Supervisor: **Mohammad Noor Nabi**

The final copy of this report has been examined by the signatory and I find that both the contents and the form meet acceptable presentation standards of scholarly work in the above mentioned discipline.

Signature

Date

Originality Statement (Attestation)

This is to certify that the report titled “Web Design & Development in Angular” was completed by Avirup Mondal (1720672) submitted in partial fulfillment of the requirement for the Degree of Computer Science from Independent University, Bangladesh (IUB). It has been completed under the guidance of Mohammad Noor Nabi (Internal Supervisor) and Iqbal Sazib (External Supervisor). I also certify that all my work is original and has not been submitted earlier to this university or any other institution. All the sources of information used in this Project Report has been duly acknowledged in it.

Signature

.....

(Avirup Mondal)

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I am grateful to Independent University, Bangladesh (IUB) for offering me this course and I express my thanks to my faculty and internship supervisor, **Mohammad Noor Nabi**. I want to stretch out my earnest gratitude to him. I am profoundly obligated to Independent University, Bangladesh (IUB) for their direction and consistent supervision just as for giving important data with respect to the course.

I am very much grateful towards my external supervisor, Ikbāl Sazib for his guidance and support me through the whole period of time, that I needed for the fulfillment of my internship and project. I might want to offer my extraordinary thanks and gratitude to the SoftLab IT developers and employees for giving me such consideration and time and directing through the internship.

I also want to thank my parents for who have not only supported me financially but have always believed in me and always motivated me to accomplish the things that I have achieved.

Abstract

I am doing my internship was at the Frontend Technology Development team of the SoftLab IT. When I was first join as an intern in their Web Development Firm initially I was assigned as to design their web based component and also learning more details about Angular-10 and Typescript Language how to use it to run an Angular project. They also give me the opportunity to learn how to talk with their client and also give me the chance to seat in their client meeting and how a proposed project solution represent to a client in real life. So, My first task was that write code for designing material and also work physically with their client. Designing are done by using SCSS which is very popular CSS pre-processor. Using SCSS its make also designing code well structure and readable also. Our developer team are very helpful and give a great support to me as they weekly take a session to teach us how an actual project was and how to code in an actual real life coding for the clients. Then my task was shifted to started design in an Angular Project using Angular material component and SCSS for our project work. Our project was mainly develop E-Commerce websites which are built by Angular , NodeJs , Json. We fetch our data by hit API Calling and data stored in a JSON format. We develop website which is fully dynamic and the content in the website also dynamic. While working at SoftLab IT, I was fortunate enough to be introduced with technologies such as HTML, CSS, Javascript, Typescript, Angular, Node JS, JSON, API fetching and dynamic content load. And PHP, Mysql, Bootstrap 4 framework also though did not use in our project Building.

Chapter-1

Introduction

1.1 Introduction

In our current situation website development is become mandatory for any kind of business or related issues. Now everyone and every business and every company must have their own personal website for to run their current activities. In Bangladesh it also become popular now everyone are aware to have their company or business website. So building up proper website there are frontend and backend to run it perfectly. Frontend is what users show at the interface and backend is what activities are perform behind the screen and what data are stores to a server and how to manipulate all the data for user activities. So, building up the user interface or Frontend design there are many framework and languages. But among all of them Angular is one of the most popular frameworks for user interface design. Angular is a framework for web application development based on TypeScript, it is entirely open-source and suitable for both individuals who plan to build their first Angular startup and corporations whose goal is to produce a market-leading app.

When a market leader launches a product, everyone expects it to be perfect. And when a company like Google produces a new solution, impeccable performance is a requirement. High expectations combined with warm interest make users more demanding, but once a new solution meets their requirements and surprises with a flawless experience, interested users become dedicated patrons. For many years, Team Google contributes to its upgrade. The story started with AngularJS, often referred to as Angular 1. This version was popular for many years, and many popular apps are written on AngularJS. But after the upgraded Angular v.2 was launched, it lost the “JS”-ending — now, it’s simply Angular. Year by year, it continues to get better. [3] The new fresh Angular v11.0.0 was released in November11, 2020. It uses a new compiler called Ivy, which speeds up the compilation process and improves component testing. The team dedicated two years to create, polish, and roll-out this new version that represents the whole new generation of Angular products.

So, This is the latest technology which I used in my project to build my user Interface and by the help of the angular it’s easy to make my website dynamic content load and it’s help a website to optimize the load time of any page nearly 0 sec. So, build website in Angular is very much popular optimize and popular for business purpose.

1.2 Project Background

SoftLab IT is a professional website, E-Commerce, and Customized mobile apps development company in Bangladesh with a good reputation, and open skill-set. Due to the type of work, there is continuous demand for different types of services that is used to maintain various websites. The idea of the project came from a business purpose to request for a E-Commerce website for their shop and which is have to very much optimize, user friendly and dynamic.

SoftLab IT had built dynamic website for their client and they always try to use Angular in their frontend technology which is very much optimize loading time. So, when they call for this to us it's become too similar with our related work. So, we are planning to develop this project and call for a meeting to our client about the project and the requirements they need.

The project was a based on an E-commerce web development and application also. But first we have to build the website for our client. It's a website where all the data comes from the server side and it's totally a dynamic content based website. Data comes by fetch the api. And though its frontend build on Angular the whole website load at a first time it's a single page web application framework [2]. So talking to our clients we sequentially started to build our website. The project work was distributed across programming languages such as Typescript and Javascript, frameworks Angular, database of Node and data format JSON. The steps of the projects are clearly explained in the Objectives and are also explained in more detail in the next few chapters.

1.3 Objectives:

Objective to develop the following system:

1. **User Friendly Interface:** To build a user friendly website and easy to use. All the content in the website are easy to find. And as an E-commerce website have to satisfy the customer to give the proper service by that. So, UI should be clean and all the contents or category are well constructed and easy to find in the website.
2. **Easy to Maintenance:** Website should be easy to maintenance if client want to add some new features those should be easy to implement in our website.
3. **Dynamic Content Load:** Website should be control through the admin panel. And all the contents and the post in the website have to be dynamic and admin have full control over it.
4. **Readable Code :** Through the development process of the website all the codes are written have to easily readable and functional code.
5. **Lightweight Website :** Lightweight website and easy to loading no external time needed for loading the website.
6. **Automation :** All the admin and database data are automatic store in a cloud server after a certain period of time. Its help a client not to loose any important file or document.

1.4 Major Responsibility :

1. Plan and design the approach to be taken in order to make this project a reality.
2. Discuss with the team lead about the approach and give him an approximate time in which I expect to complete the project.
3. Divide the project into parts of equal sizes.
4. Start the implementation of the project and give weekly progress reports to the the Project Manager.
5. Get update to the client about their project and fix meeting after every one or two week and visualize them that how's the work is going.

1.5 Minor Responsibility :

1. Collaborating with other developers and find an easy medium which going to be easy to communicate with each other through the development period.
2. Look and visit some similar kind of website and how it's look and focus on their functionality which make a lot of helps to our project.
3. Using github or such kind of code repository to save your working and sharing with other.
4. Do research on various topics that are of interest to the organizations and prepare reports to present to the decision makers.

Chapter-2

Company Profile

2.1 Company Overview :

SoftLab IT is an organization of highly expert and talented people for experiencing the excellent standard what we cherish for. SoftLab IT comes with the promise of understanding the necessity and delivering within the finest manner. We provide each types of services of IT sector including web page development, E-commerce, virtual reality, augmented reality and many more.

Moreover, we also provide training sessions to the people who have interested in different areas of this IT sector. During this dynamic digital world, achieving in career and reaching in targeted goal is challenging on the correct execution of designing, implementing and sustaining changes.

Your nice expertise of learning influences our means of coaching and so we have a tendency to serve our students and interact with our commitments. Here, we have a tendency to invite you so we might be grateful to grasp you and to strengthen a lasting relationship.

2.2 Company Background :

Since their inception in 2014, the people in SoftLab IT have relentlessly pursued excellence in creating the best solutions for their clients. Their motto has been set from the start to rack their collective brains and constantly push the envelope of what can be done with their technical process. The employees and upper management view themselves as problem solvers. The people at SoftLab IT help their clients to find their “Premium” way out of all problems in which the clients find themselves to be lost. And they are considered cost which is “Accounting” to be less compared to the other company. That’s how the SoftLab IT achieve trust in people mind and also working through all over the world. They are the IT partner and doing different project of client in different region. They also have two other offices outside Bangladesh. One is in USA and the other is in Saudi Arab. So by a huge amount of time they are satisfying their client by giving the best service all over the world. So Softlab IT is a trusted and experienced software company for make your dream software_[12] .

2.3 Mission, Vision and Values:

To Create Success & Happiness for Customers & Employees by Increasing Efficiency & Profitability for the Company and to serve our country by creating employment for the talented citizens.

1. **Client Centric:** No matter what we put our clients above all else without exception and work towards giving them the possible service.
2. **Tech Oriented:** We always work in teams to benefit from the collaboration of multiple “idea-generators” and formulate the best possible solution.
3. **Integrity:** Our success is derived from the trust of our clients that we have earned through hard work and delivering quality output.
4. **Resolute:** We tackle all problems head- on and chase after the optimal solution in a steadfast manner.
5. **Forever Students:** For us, learning never stops. We seize every opportunity to learn something new to better ourselves to serve our clients better.
6. **Forward Thinkers:** You will find the team lead assigned to you available during your work hours and the rest of your team will also maintain overlapping hours.

2.4 Services

The services our company provided for a huge period of time.

1. **E-commerce Solution** : Get your on-line look, reservation system, promoting system and mobile app. Defend your business future with all-in-one digital growth system ready for your company.
2. **Booking System Management** : Speedy-correct web booking app comes handy with ensuring payment simple and fast system by 24/7 operative portal. It's degree economical attributable to build booking without having to face outside a store or a building or a eating house.
3. **ERP Development** : Manage your business with ease. Our reliable ERP developers area unit well-versed in rolling out management, tracking, and booking package, and conveyance all of your business operations into one single, simple, custom ERP resolution.
4. **Custom website development**: Welcome to the right place to get your custom website! Get high-end website created by the expert. We Build Websites That are fully responsive.
5. **Professional Graphics Design** : Represent your promoting components by creatively designed graphics. Let your business deliver effective impression in both on-line and offline promotion by your original smart looking branding logo.
6. **Mobile App Development** : Developing innovative and native mobile Apps for Android, iOS, BlackBerry and Windows platforms.

2.5 Technology Supported and Uses :



Figure 2.5.1 shows all the technologies supported for development in SoftLab IT. This includes; PHP, Microsoft .Net Framework, Android, iOS, Javascript, Node.js, Angular, Joomla Python, Ruby on Rails etc.

2.6 Office Location & Contact :

1. Bangladesh Office :

Number : +8801648879969.

Email:softlabit.info@gmail.com

Address: House: 3/4.Avenue, 5th Block-A, Mirpur-6, Dhaka-1216.

Website : softlabit.com

2. USA Office :

Email : softlabit.info@gmail.com

Location : 56 west spruce st. Lakewood Nj.

Website : softlabit.com

3. Saudi Arab Office :

Email : softlabit.info@gmail.com

Location : Riyadh, King Fahad Road, 2nd floor.

Website : softlabit.com

2.7 Company Website :

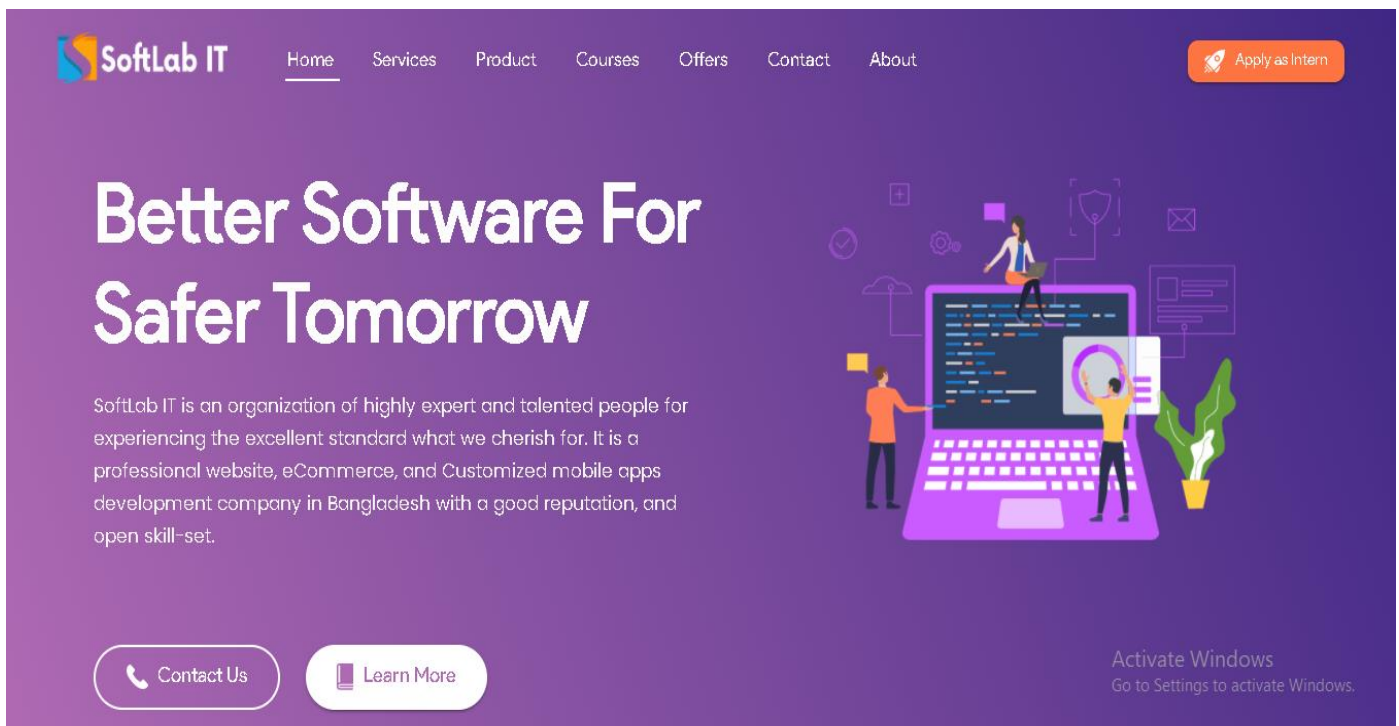


Figure 2.7.1 Company Website

Chapter-3

Literature Review

3.1 How Web Browser and Web Application Work

The main function of a web browser is to request resources on the web and display them inside a browser window. Usually the browser will request HTML, CSS, JavaScript and image content on the server and translate it based on web standards and specifications. Browsers follow standards because it allows websites to behave in the same way across browsers, and creates less performance and fewer headaches for web developers [1].

1. **Layout Engine** – It takes input from browser in the form of URL bar, search box, mouse click, key presses etc and transfers it to rendering engine.
2. **Rendering Engine** – This takes HTML code and translates it to what you see. For example, a tag was interpreted by a translator engine as a set of instructions for making text within a part bold.
3. **User interface** - This is a visual presentation of the browser controls, For example the back and front buttons, bookmarks, and all the chrome that appears around the browser window where web pages display.
4. **JavaScript Engine** - This engine takes JavaScript code executes it, and returns results.
5. **Network Layer** - This is a browser function that occurs behind the scenes and handles network functions such as encryption, http and ftp requests, and all network settings such as expiry and HTTP status codes. It's also maintain the security issue of a web server.
6. **Storage** - The browser must store specific information that may include cached files, cookies, and newly updated browsers to be able to store data and objects in JavaScript.
7. **Operating System Operations** - The browser must work with the operating system to draw several page objects such as boxes and window elements (close, expand , and minimize buttons).

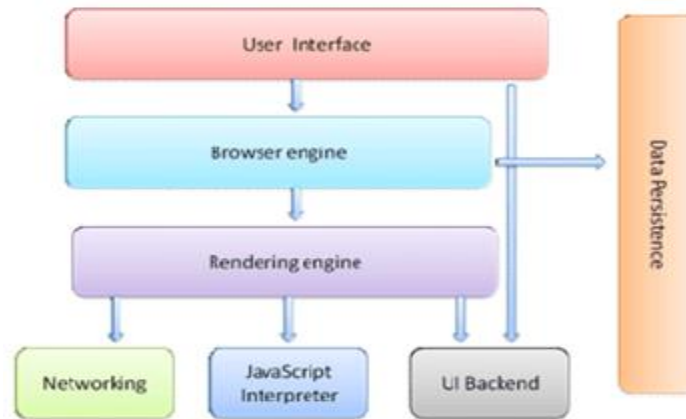


Figure 3.1.1 Key component of a web browser.

3.2 Role of Rendering Engine for a Web Browser:

The rendering engine plays a very important role as it reflects what you see on your screen. It communicates with the browser's browsing network to hold HTML code and other objects passed to the remote server [2] .

Rendering engine follow these steps:

1. Parsing HTML to construct the DOM tree – HTML elements are passed and converted into DOM tree.
2. Render tree construction – Parsing of CSS attributes is done and combined with DOM tree to create render tree.
3. Layout of the render tree – After construction of render tree HTML elements and attributes are mapped to screen coordinates, starting from position 0, 0.
4. Painting the render tree – With the help of OS interface each node of the render tree is drawn out on the screen.

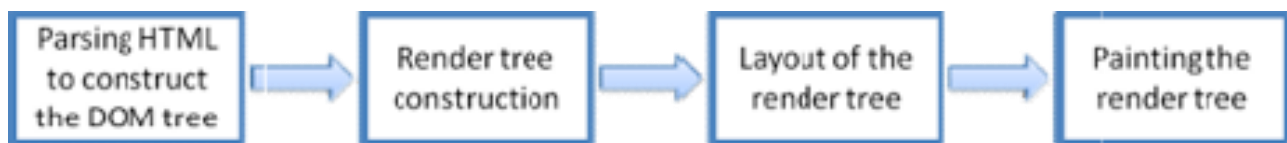


Figure 3.2.1 Rendering Engine for a Web Browser.

3.3 E-Commerce Website Angular

Innovative headways have affected the E-Commerce world, changing the manner in which customers connect with items and empowering them to purchase all the more productively. With the comfort of getting items conveyed to your entryway, E-Commerce has now become a piece of regular day to day existence. Clients can purchase things from their homes, their or working environment according to their comfort. Today web shopping has made it simpler and helpful for the client as it spares their time and exertion. Clients can check an assortment of things, can without much of a stretch drop exchanges and as the present innovation has gained a quick and speedy advancement of applications and website pages, so front end includes a fundamental layman design for clients to utilize the highlights and capacity making everyday work simple. So as a Developer we have to make the frontend as good and clean as possible [2] .

Now , In online buying, the pace of spread and apportionment of the electronic buying among customers is still not that much in Bangladesh. But In Current Situation it is probably increasing day by day and people are now trust to buy from online medium. So E-commerce platform is very much useful for them. So to design a good user interface that can be done , a single page internet business application utilizing angular architecture that moves the vast majority of the handling work to the customer side, which will permit client to stack a solitary HTML page and progressively update the substance on that page, without reviving it, as client collaborate with the application and helps individuals in purchasing and selling items on the web which will permit client to stack a solitary HTML page and progressively update the substance on that page, without reviving it, as client collaborate with the application and helps individuals in purchasing and selling items on the web [1] .

3.3.1 Advantage of E-commerce Website

1. **Time saving:** It saves us a colossal proportion of time. We can buy any of our favored things from our home just and need not visit the strip malls.
2. **Profitable:** Products can be purchased at any rate by buying on the web. It's on the grounds that online stores offer tremendous limits and rewarding proposals on the acquisition of every single item.

3. **Additional Profits:** Item is uninhibitedly sent, conveyed to our homes with free of cost without any delivery charges. Also, on the off chance that we discover them not fit to our motivation, we can return them without buying whenever
4. **Shop any store around the world:** Never again be constrained topographically. Numerous dealers don't has actual shops at each place in world. At the point when you shop on the web, anyone can buy it from any anonymous market registered with respective domain.
5. **Sell blessings legitimately:** Any request made on the web, you can send endowments or even have blessing crates conveyed straightforwardly to their beneficiary. This implies you can stay away from significant delays at the mail station and you can get your blessing conveyed quicker. Numerous stores considerably offer redid cards and blessing wrapping to oblige your present.
6. **Find things you probably won't find in stores:** Since physical stores are restricted on space, traders generally don't convey the entirety of the things they sell coming up. On the web, you can locate their whole stock, alongside numerous selections of hues, brands, and even customizable things.
7. **Web server runs 24/7:** A E-commerce Website run for 24 hours. So by a help an E-Commerce Side you can shopping any time when you want. There are no fixed time for shopping when you get time for shopping you can order from a E-Commerce website.

3.4 Related Software :

There are many others software or webpages which are develop through Angular and they are very popular here given two of them Example:

- **Gmail:**

Angular is a product built by the Google engineering heroes, and Google products leverage this framework. The important fact to note is that Gmail is a single-page app. Unlike multi-page websites, this website renders data on the front-end, enables access to cached data in the offline regime, and embodies many other amazing SPA advantages [3] . The UX of apps created with Angular is impressive :

1. Initial load may take up to several seconds; however, once the app is loaded, you can open any email or check any category with no delays.
2. Once loaded, Gmail app content is available offline; even if there's no Internet connection, you can open some recent emails.
3. Live Hangouts chats available in Gmail are of great simplicity and performance. The feature was made with Angular, and thanks to the out-of-the-box Angular module, now everyone can integrate Google Hangouts to their Angular apps. [3]

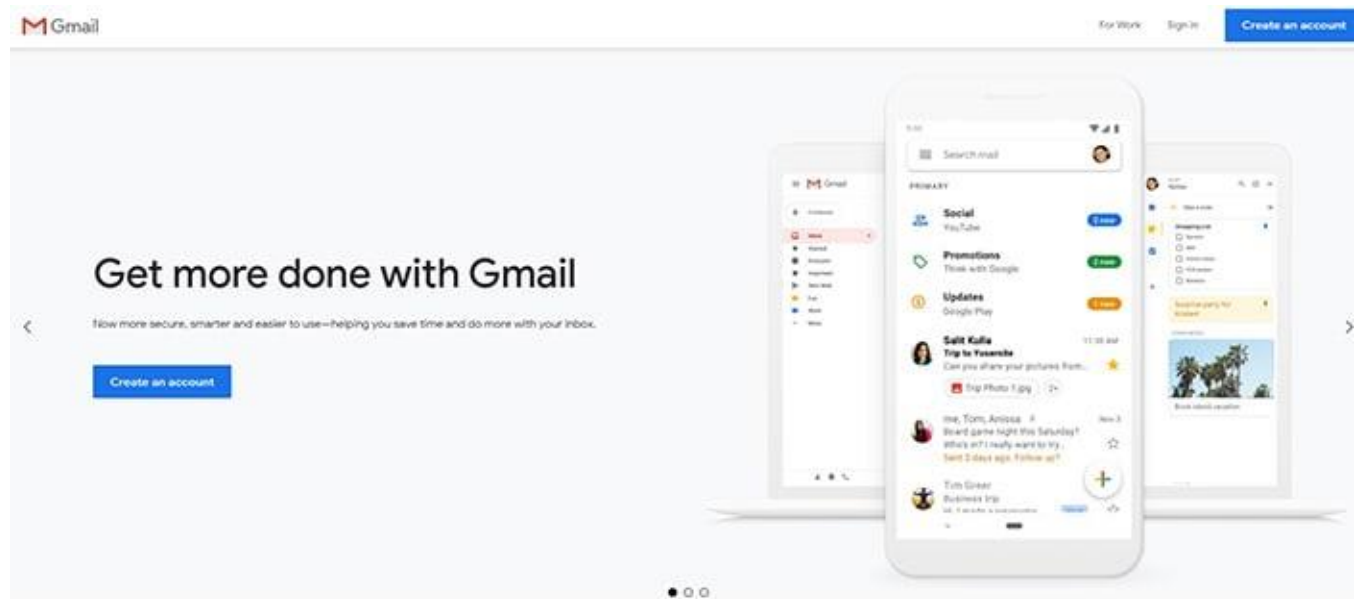


Figure 3.4.1 Gmail Interface

- **Paypal :**

Online money transfers wouldn't be so fast and simple without PayPal; PayPal looks great and works so well, thanks to Angular. PayPal allows transfers of money between individuals and companies. There are more than 305 million active users on the platform. Impressive website performance and the ability to handle high loads strengthen the company's positions in a ranking of online payment service providers [3]. Angular contributes to PayPal's internal functionality and enables enormous integration opportunities.

1. On a website, you will notice a simple few-clicks authorization feature for both individual or business use built in Angular.
2. Seamless checkout that allows completion of the purchase without leaving the web store is real thanks to checkout.js — an Angular tool.
3. There is tons of information, tutorials, and tips regarding PayPal integrations with Angular websites. [3]

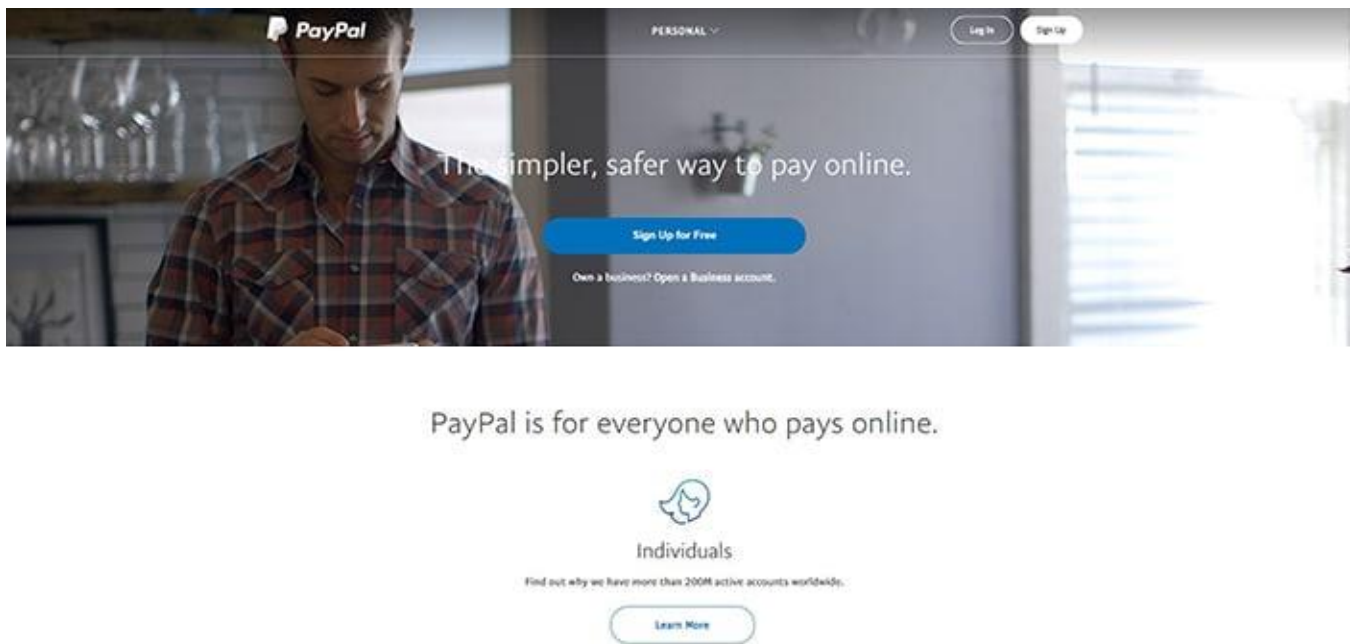


Figure 3.4.2 Paypal Interface

3.5 Technologies Use :

There are many of the technologies are using to make their interface clean and make an elegant look. So in Angular web Development some common of the technologies are using those are given below:

- **NodeJs** : Angular requires a version of Nodejs. We have download nodejs from node.org. Because Angular, the Angular CLI, and Angular applications depend on npm packages for many features and functions. To download and install npm packages, you need an npm package manager. And angular server which is also based on node [7] . We can check our npm version in cli by

```
$ npm -v
```

- **Typescript** : Angular is a modern framework built entirely in TypeScript, and as a result, using TypeScript with Angular provides a seamless experience. TypeScript is a primary language for Angular application development. It is a superset of JavaScript with design-time support for type safety and tooling. Browsers can't execute TypeScript directly. Typescript must be "transpiled" into JavaScript using the tsc compiler, which requires some configuration. So, compile a language from one to another we need to install the Node and npm [6] . Then install typescript by cli command

```
$ npm install -g typescript
```

- **JSON-server** : A common task for front – End developers is to use the REST backend service to deliver some data in the JSON format to the previous application and make sure everything is working as expected. You can also set up a full backend server, e.g. using Node.js, Express and MongoDB. However this takes time and a very simple method can help speed up the development time before the end. JSON Server is a simple project that helps you set up a REST API with CRUD functions very quickly. It is available as NPM Package. [10] It can be installed using the Node.js package Manager

```
$ npm install -g json-server
```

- **Angular Material** : Angular Material is a library that is part of the UI for Angular developers. While adhering to modern web design principles such as browser portability, application independence and good scalability, angular Material components help to create attractive, consistent and effective web pages and web applications It helps to create fast, beautiful and responsive websites. [5]

- **Visual Studio Code :** VS code is a free & open source code editor made by Microsoft for Windows, Linux and macOS. Its features include debugging support, syntax highlighting, intelligent code elimination, captions, code retrieval, and Git embedding. In visual studio code users can change the display theme, update keyboard shortcuts, preferences, and can install extensions that adds extra functionality

The screenshot shows the Visual Studio Code interface with the 'index.html' file open. The Explorer panel on the left shows the project structure for 'ANGULAR-UI', including folders like 'app', 'assets', 'environments', and 'theme', and files like 'index.html', 'main.ts', 'polyfills.ts', 'styles.scss', 'test.ts', '.browserslistrc', '.editorconfig', '.gitignore', 'angular.json', 'app.js', 'karma.conf.js', 'package-lock.json', 'package.json', 'README.md', 'tsconfig.app.json', 'tsconfig.json', 'tsconfig.spec.json', and 'tslint.json'.

The main editor area displays the content of 'index.html', which includes a DOCTYPE declaration, HTML lang attribute, and a head section with meta tags for charset, title, base href, viewport, theme-color, keywords, description, author, and copyright. It also includes OpenGraph meta tags for title, type, url, image, site_name, and description. Finally, it includes link tags for the favicon, Roboto font, Material Icons, and Poppins font.

```

1 <!doctype html>
2 <html lang="en">
3 <head>
4   <meta charset="utf-8">
5   <title>R One Computer - Best Online Shop for Computer Gadgets</title>
6   <base href="/">
7   <meta name="viewport" content="width=device-width, initial-scale=1">
8
9   <!-- SEO TAG -->
10  <meta name="theme-color" content="#00002C">
11  <meta name="keywords" content="computer retailer in Bangladesh, Website Development, Accessories Price in
12  <meta name="description" content="Find the perfect Computer Gadget like Laptop, Desktop, Monitor, Gaming A
13  <meta name="author" content="R One Computer">
14  <meta name="copyright" content="R One Computer">
15
16  <!-- OpenGraph Meta Tags -->
17  <meta name="og:title" content="R One Computer"/>
18  <meta property="og:type" content="website" />
19  <meta name="og:url" content="https://roc.com.bd/" />
20  <meta name="og:image" content="https://ftp.roc.com.bd/uploads/brand/R-One-Computer.png"/>
21  <meta name="og:site_name" content="R One Computer"/>
22  <meta name="og:description" content="Best Online Shop for Computer Gadgets"/>
23
24  <link rel="icon" type="image/x-icon" href="favicon.ico">
25  <link href="https://fonts.googleapis.com/css?family=Roboto:300,400,500&display=swap" rel="stylesheet">
26  <link href="https://fonts.googleapis.com/icon?family=Material+Icons" rel="stylesheet">
27  <link rel="preconnect" href="https://fonts.gstatic.com">
28  <link href="https://fonts.googleapis.com/css2?family=Poppins:wght@200;300;400;500;600;700&display=swap" rel="stylesheet">

```

The bottom panel shows the 'TERMINAL' tab with a bash prompt, and a message to 'Activate Windows'.

Figure 3.5.1 Visual Studio Code Snippet

Chapter-4

Project Management & Financing

4.1 Work Breakdown Structure (WBS) :

Work breakdown structure of the Angular Web Development Project. When developers need to work in a huge project they have to breakdown all the task in different phase to simplify the work. Work breakdown structure (WBS) is a hierarchical tree structure that outlines a project and breaks it down into smaller portions. The goal of a WBS is to make a large project more manageable. Breaking it down into smaller chunks means work can be done simultaneously by different team members which leads to better team productivity.

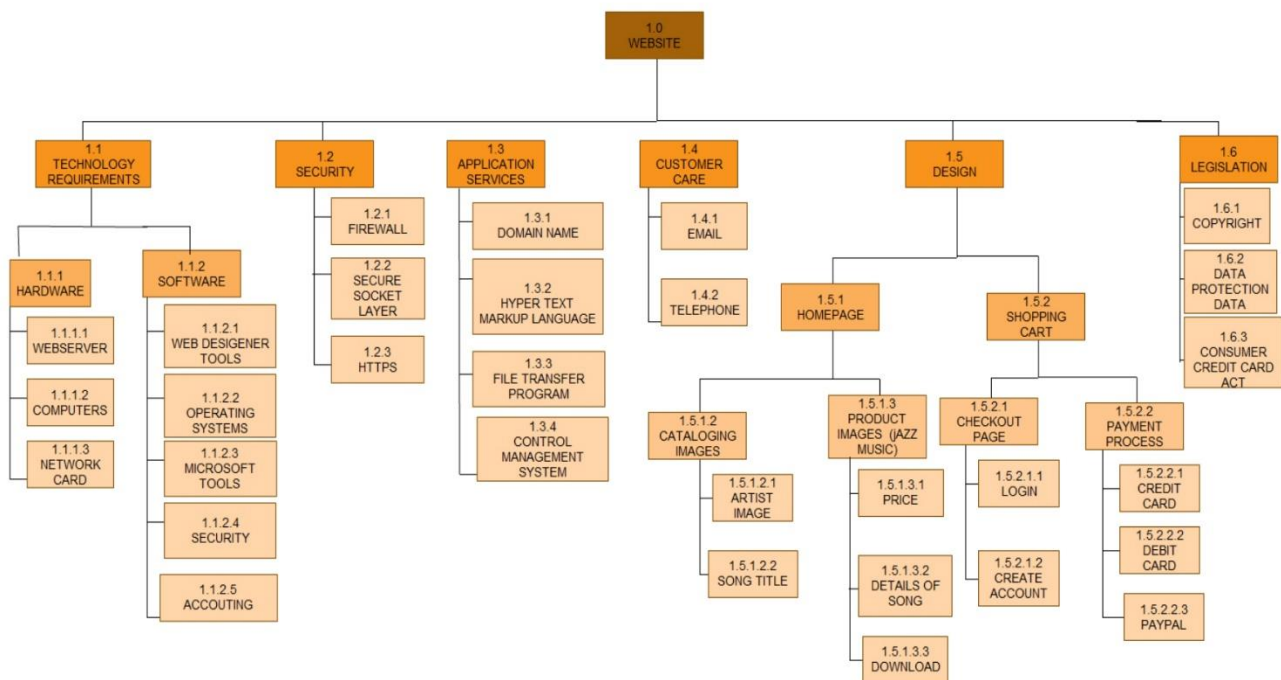


Figure 4.2.1 Work Breakdown Structure (BKS)

4.2 Activity Wise Time Distribution :

The entire web development process is proper timely wise distributed. It is very important to breakdown the activity and also give a time limit for it. It's increase the client satisfaction and also make trust worthy that we ensure them that we have ability to deliver the process in a proper time management. If a project take long period of time it's dissatisfy our client and possibility to loose our client. And the time distribution also help developers to make complete their task in a certain period of time limit. So here given the Time distribution Chart :

Serial	Activity	Days	Work Percentage
1	Prototype Design	10	10%
2	Project Breakdown & System Understanding.	5	10%
3	Front End Developer	15	30%
4	Back End Developer	15	30%
5	Testing Process	5	10%
6	Error and Bug Fixing	10	10%
	Total	60	100%

Figure 4.3.1 Time Distribution Table

4.3 Gantt Chart Diagram :

A Gantt chart is a project management tool assisting in the planning and scheduling of projects of all sizes, although they are particularly useful for simplifying complex projects. Project management timelines and tasks are converted into a horizontal bar chart, showing start and end dates, as well as dependencies, scheduling and deadlines, including how much of the task is completed per stage and who is the task owner. This is useful to keep tasks on track when there is a large team and multiple stakeholders when the scope changes. Here given the benefit of using gantt chart :

1. A visual display of the whole project,
2. Timelines and deadlines of all tasks,
3. Relationships and dependencies between the various activities of project phases.

Here Given Our Project Gantt Chart :

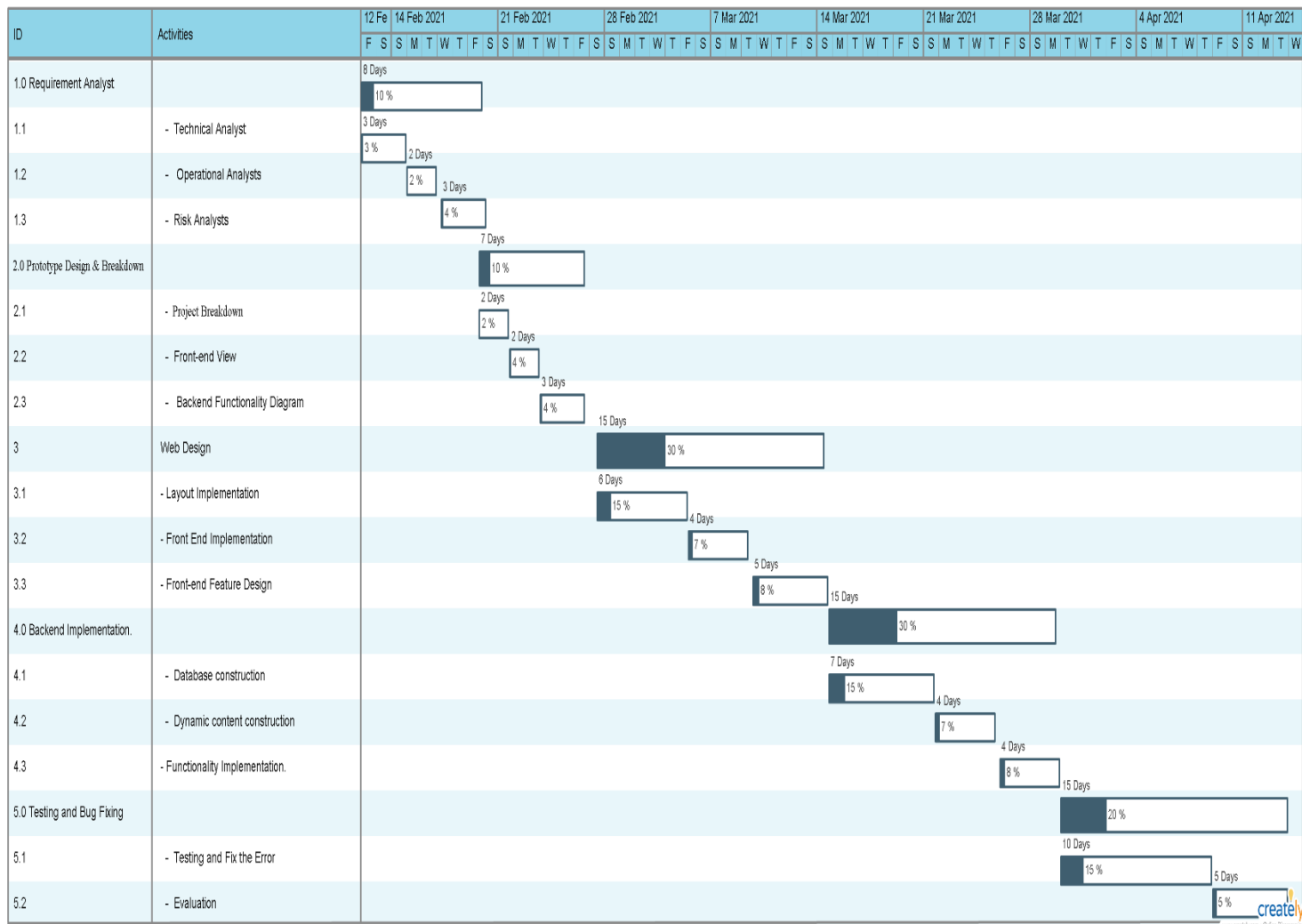


Figure 4.3.1 Gantt Chart of Angular Web Development

4.4 Project Costing and Finance :

This is a project of our client and in our project financing we estimated a minimal cost as all the project phase based. For developing an Angular website with proper functionality and a clean interface the cost is very minimal. Here given the chart of project Costing and Finance by Work process :

Serial	Activity	Days	Costing
1	Prototype Design	10	10000/=
2	Project Breakdown & System Understanding.	5	5000/=
3	Front End Developer	15	20000/=
4	Back End Developer	15	20000/=
5	Testing Process	5	10000/=
6	Error and Bug Fixing	10	15000/=
	Total	60	80000/=

Figure 4.4.1 Finance and Costing Table

Chapter-5

Methodology

5.1 System Development Lifecycle :

To develop an entire system there are different types of design methodology but all of them are depended on requirement analysis and risk assumption of the project. We have to understand the project lifecycle and what is system requirement and probability of risk. To depending on this here given a table of methodology :

System Development Lifecycle							
Life-Cycle	Requirements Stability / Definability				Project Risk		Partial Functionality Delivered Early
	Stable	Evolvin g	Define d	Vague	High	Low	
Waterfall	√		√			√	
Incremental	√		√			√	√
Evolutionary		√	√		√		√
Prototype	√			√	√		
Spiral		√		√	√		

Figure 5.1.1 System Development Lifecycle

So, Following this chart we decided to do our project by Incremental Life cycle. Because Our project requirements are quite specific and risk of failing in this project is very low so we decided to done it by incremental process and by this process after the development if client need some changes in functionality that can be done in the next phase.

5.2 Incremental Life Cycle :

So we choose Incremental Life cycle for our project development here give a short description of Incremental life cycle.

5.2.1. Abstract :

With the Incremental life cycle system requirements should be well defined at the start. The project is then broken down into a series of increments which can run independently. Each increment contains useful and usable key requirements of the project which are easy to understand and implement. As each increment is completed, it is incorporated into the current baseline until the project is finished.

The Incremental life cycle is usually implemented in one of two manners either using sequential development (Figure 5.2.1.1) or parallel development (Figure 5.2.1.2). Decision on which method to use is dependent upon the set of requirements selected for each increment and their interdependencies.

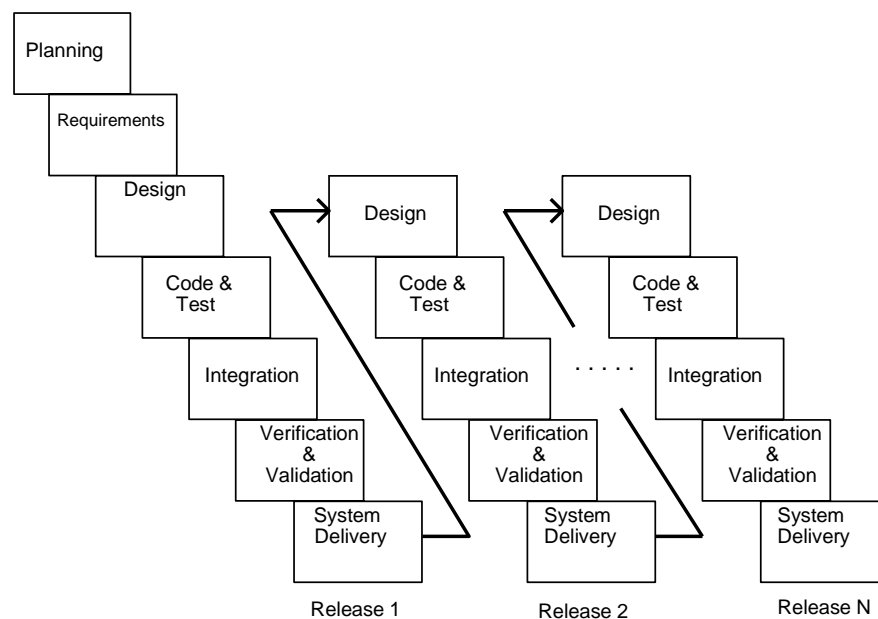


Figure 5.2.1.1 Incremental Lifecycle Using Sequential Development

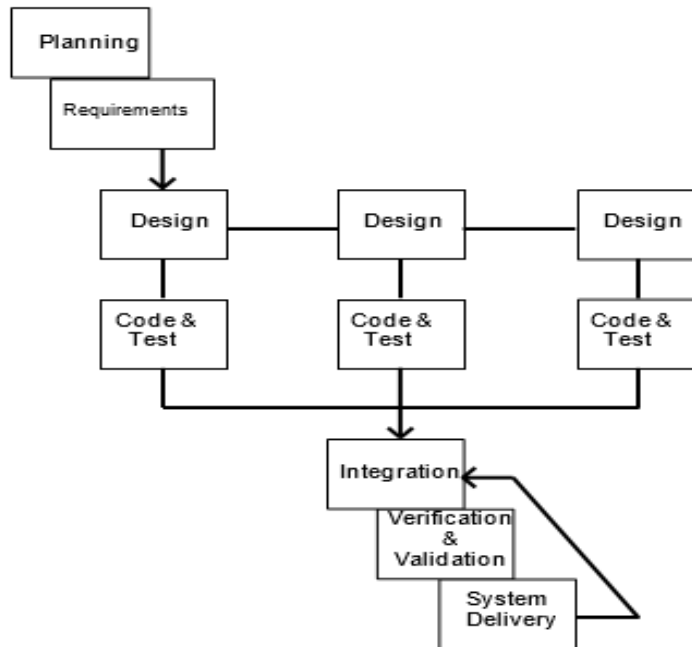


Figure 5.2.1.2 Incremental Lifecycle Using Parallel Development

5.2.2. Specific Phases :

The Incremental Model applies the generic life cycle phases listed in section 4 with the following modifications:

1. Requirements - has the additional task of allocating the requirement to the individual increments and determining the cost and schedule of each increment.
2. Integration - integrates the current increment(s) with previously delivered baseline.
3. System Delivery and Acceptance Phase - may occur several times.

5.2.3. Advantages :

1. The important functionality can be delivered early.
2. Provides for a less traumatic introduction of a new system.
3. Capital and personnel are effectively used.
4. Allows for adjustments to subsequent releases based on user experience.
5. Accommodates changing or additional requirements.
6. Easier to test increments than the entire system.

5.2.4. Disadvantages :

1. Without careful discipline can easily degenerate into a patched-up spaghetti approach.
2. A bad initial design could disrupt or constrain any further builds.

So, this is the short description of Incremental life cycle how its work and what the dependency needed for it.

5.3 Functional Requirements :

Which functional activities are added in our website which can helpful for user and also the admin panel:

- First, a user have to register on our system. User can register using his gmail or phone no.
- Only, Register users can buy product from our system.
- User can go through category wise to find his desired product.
- All the product in our website is category wised divided.
- User can also manually select his specification through his need.
- An offer tab where show all the offers that are given for the customer.
- A compare tab needed where a customer can add product for comparing one to another and can select the best out of those.
- User can also search his product by selecting a price range.
- User can search a product in the search bar.
- User can also make payment online by bank or other online payment gateway.
- If user have any some discount coupon code for shopping he/she can use it in the payment gateway.
- A sticky header component which includes all the categories of our website and also help user to navigate from one page to another.
- A sticky footer where give the all contact and the outlet information of the E-commerce shop which can be control or change from the backend.
- All the product data can be control through database by admin panel.
- Admin can also show the daily, monthly, weekly basis sales report.
- Admin can view a user information when it's needed.

- Make a secured web server for the handle all the incoming and outgoing data.
- Use standard Nodejs server security for handle the http request.

5.4 Non Functional Requirements :

Nonfunctional Requirements (NFRs) define system attributes such as security, reliability, performance, maintainability, scalability, and usability. They serve as constraints or restrictions on the design of the system across the different backlogs.

- A clean and elegant frontend look which can attract a buyer.
- Lightweight website making.
- Easily can payment through online.
- Delivery the products on time properly.
- Achieving customer satisfaction to give quality service.
- Reliability of the website.
- Performance building of the website.
- Maintaining the website continuously.
- Readable code writing that can be understand by any developer.

Chapter-6

System Design & Implementation

6.1 Problem Analysis & Proposed Solution :

In a web server there can be many problem arise during its life time. So we analysis our project in deeply and try to identify that what can be the problem and what was its propose solution :

6.1.1. Problems :

1. As we are working on a new technology which is angular so it's little bit difficult for us to working in such a platform and also in group collaboration.
2. If the website doesn't go maintenance period it can be face problem in future as the load getting increase day by day.
3. In electronics product sometime customer have to need manually choosing their component for build purpose.
4. Customer sometimes can lost and didn't find his previous product which he/she search earlier.
5. Customer might have confusion between to similar kind of products and they might have to go different tab for compare the specification of each products. That's takes a lots of time consuming for a customer and sometime they might be get irritate by this.
6. Lastly, Security and the data of the website need to handle properly and monitor all the data properly.

6.1.2. Proposed Solution :

1. We have to cope up and learn quickly to adapt the new technology and working on a team.
2. Server have to maintain on a regular time basis that makes the website swift and efficient.
3. Make a functionality by which can customer manually add their product for build a product.
4. Make a history bar where customer can see their previous search product.
5. In confusion between two products there is an option called compare by which a customer can compare two products by its specification in a single tab.
6. Standard data security of Nodejs Cross-funtionality and Multi-factor Authentication used for our server to prevent automated attacks [7].
7. Less Use of open source components that caused Node.js Security Issue [15].

6.2 Rich Picture & Use Case Diagram of the System :

Here given the rich picture of the system & use case diagram of the currently development E-commerce website. Rich picture show all the functionalities in a visual form which can be much better understanding for our client that how's the system design And the use case diagram show all the possible functionality shown here how the admin works and how a customer can buy a product from our website:

Visual Paradigm Online Free Edition

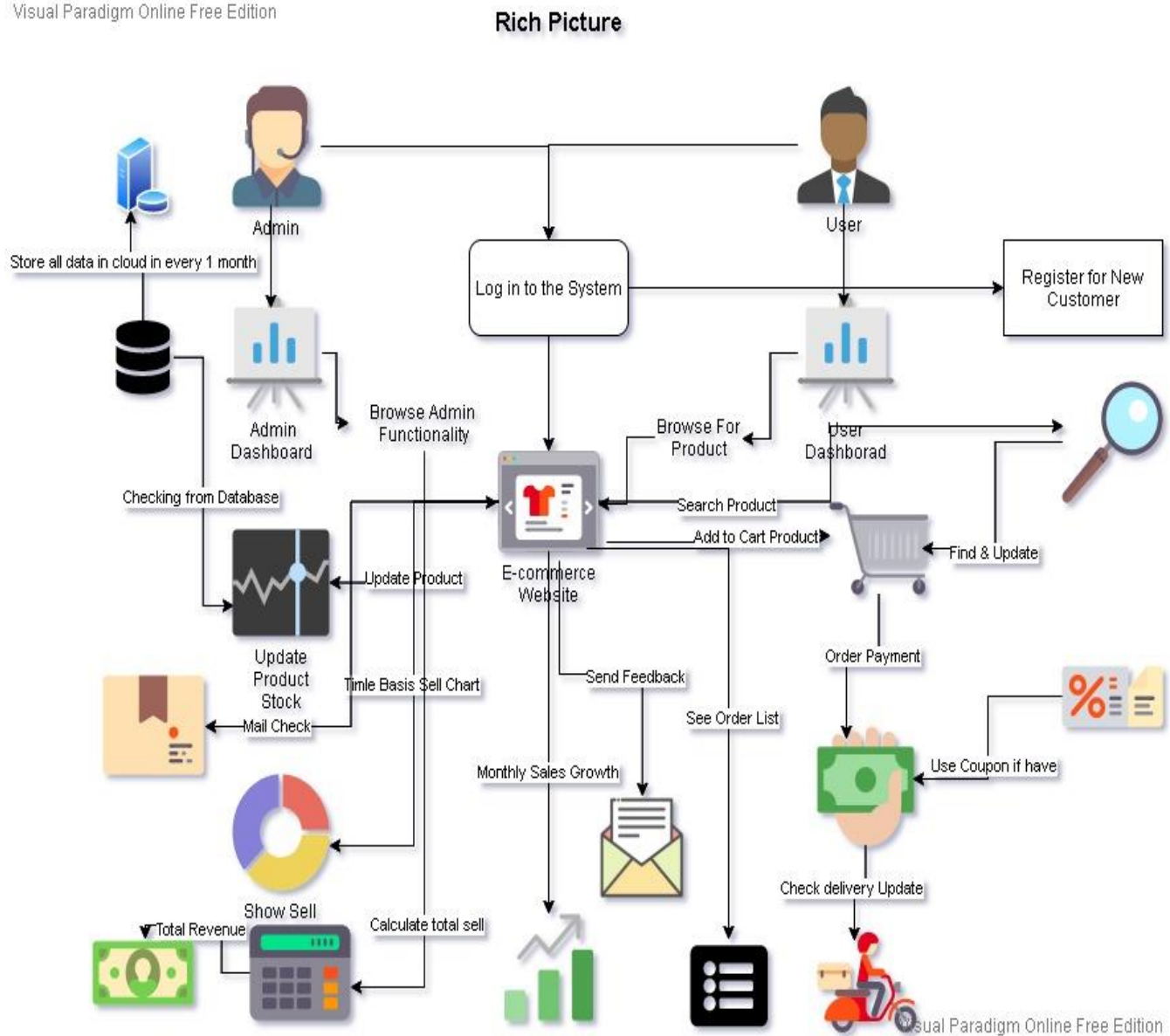


Figure: 6.2.1 Rich Picture of the Current System

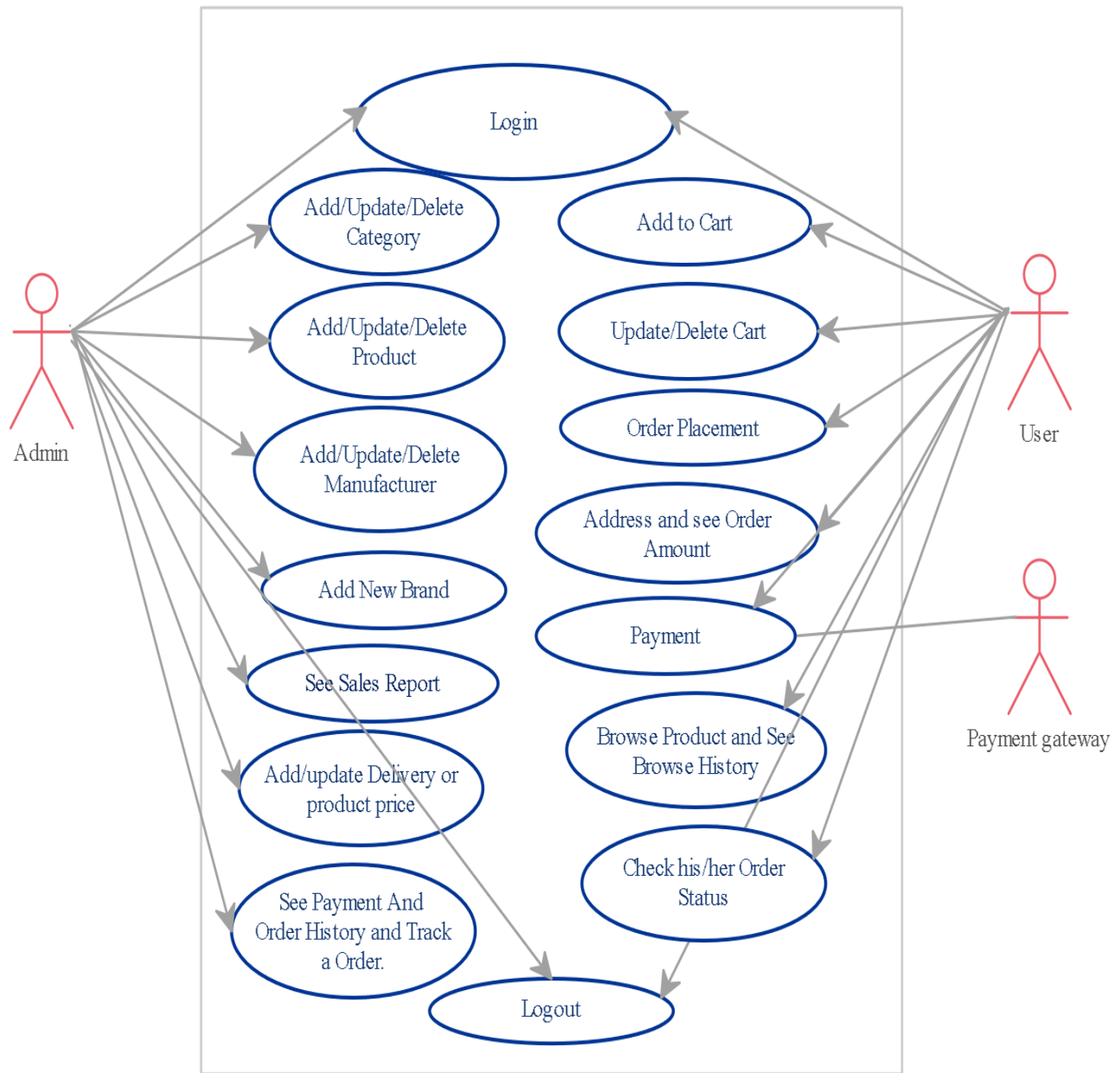


Figure 6.2.2 Use Case Diagram of the Sysyem

6.3 UML Activity Diagram :

This is diagram where shows the activity that's are perform by the user and the admin in the system :

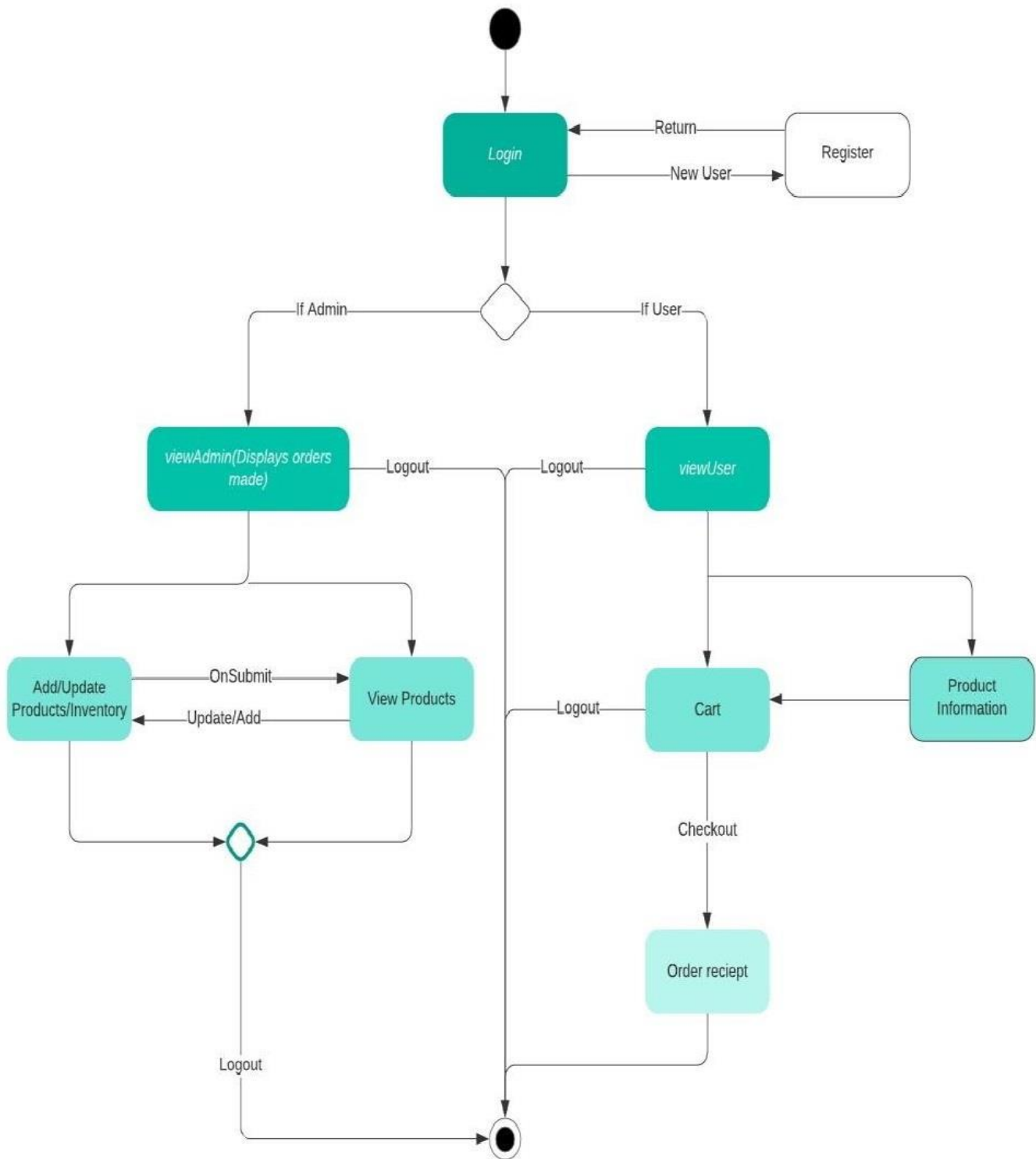


Figure 6.3.1 Activity Diagram of E-commerce Website

6.4 UML Class Diagram of the System :

Class Diagram show classes and the interaction between one and another class and also the relation.

Here also show the attributes of class and the methods :

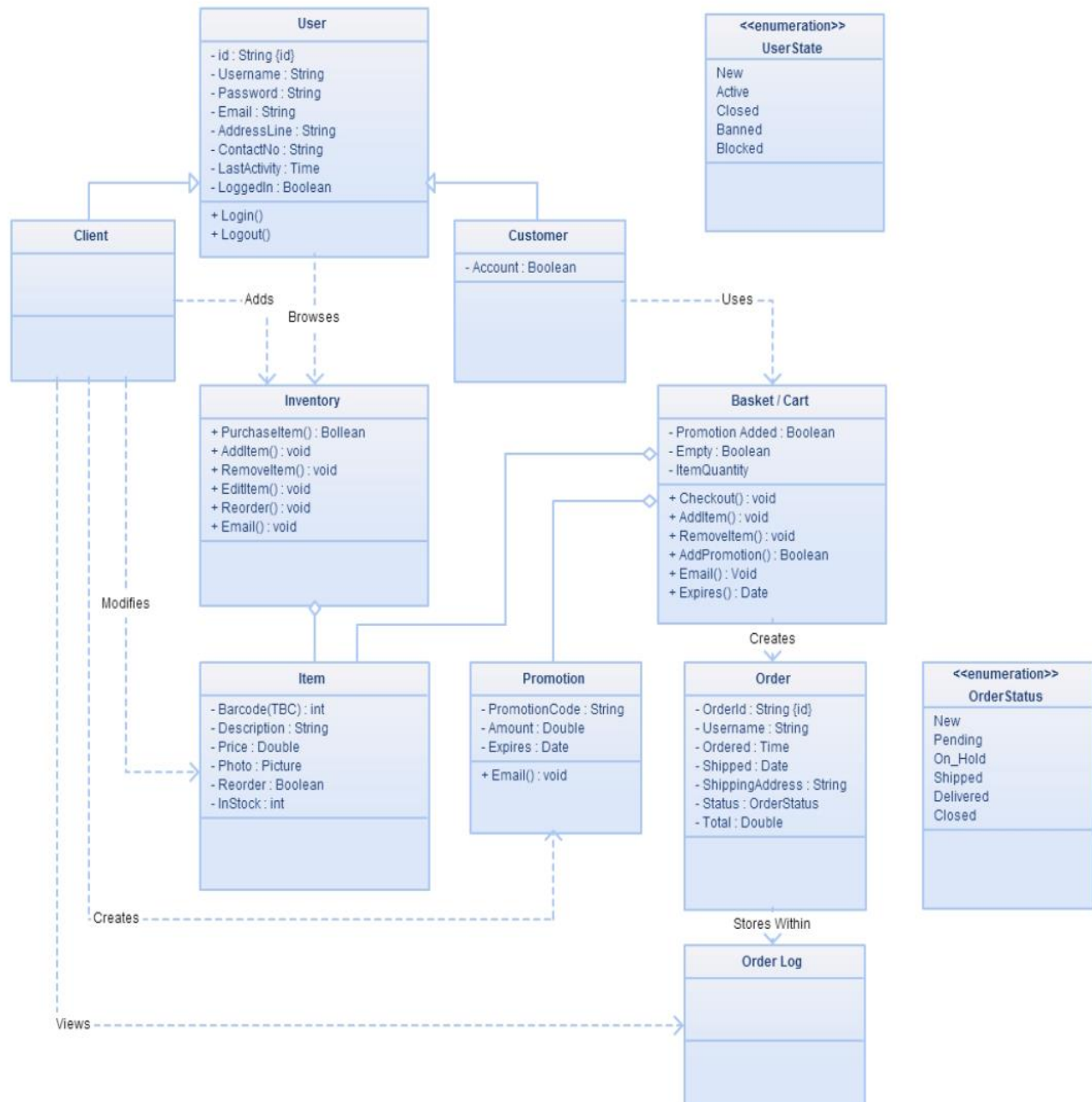


Figure 6.4.1 Class Diagram of the System

6.5 Angular Module Implementation :

In Angular, the module is a way of grouping components, directories, pipes, and related services, in a way that can be integrated with other application programming modules. The Angular app can be thought of as a puzzle where each piece (or module) is required to be able to see the full picture. In this web application there are several of modules and each module have its own different task to do. All the modules are inside a parent module name app module. And under each module there are several of component and task to do. Here given some important module task :

To create a new Module we simply write to our Angular CLI That

```
$ ng g m module-Name
```

1. **Admin Module :** This module contains admin login and admin dashboard functionality component.

PC > New Volume (E:) > Angular > R1 Computer Project > angular-ui > src > app > admin

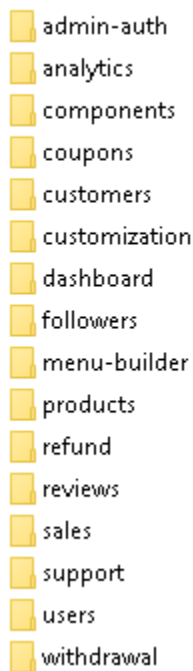


Figure 6.5.1 Admin Module and Its Component

2. **Pages Module** : This module contain all the information and the pages and also user dashboard component.

PC > New Volume (E:) > Angular > R1 Computer Project > angular-ui > src > app > pages

- cart
- compare
- home
- login
- not-found
- offer-view
- order
- payment
- pc-build
- product-details
- products
- registration
- shipping
- test
- user
- user-dashboard

Figure 6.5.2 Pages Module and All of Its Component

3. **Shared Module** : This module contains all the functionality of brand, category etc component.

PC > New Volume (E:) > Angular > R1 Computer Project > angular-ui > src > app > shared

- banners
- brands-carousel
- breadcrumb
- category-list
- confirm-dialog
- controls
- hero-section
- main-carousel
- message-dialog
- product-card
- product-dialog
- products-carousel
- promotional
- rating
- snackbar-notification
- shared.module

Figure 6.5.3 Shared Module and Its Component

6.6 Angular Services :

In angular when we want to reuse the same code or data that needs to be shared among different components we use services. Services are singleton objects that are instantiated only once during the lifetime of an angular application. It helps us to access methods and properties across other components in the entire project. Its main objective is to organize and share business logic, models, or data and functions with different components of an Angular application. [10]

The separation of concerns is the main reason why Angular services came into being. Angular service is countless and offers some very useful functions. These functions can be requested from any Angular component, such as controllers, controls, etc. This helps in dividing the web application into smaller, different logical units that can be used again. Here Given Our services file :

This PC > New Volume (E:) > Angular > R1 Computer Project > angular-ui > src > app > services

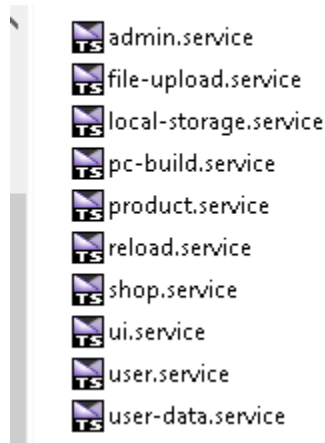


Figure 6.6.1 Angular Services

So, to create or add a new service to our system we can simply write to our Angular Cli that,

```
$ ng g service service-name
```

6.7 Angular Routing :

Angular routing are interfaces that can tell the router whether it should allow navigation on the requested route or not. They make this decision by looking for a true or false return value for the class using the given guard indicator. By using Angular Routing web page can navigate one page to another. [4]

6.8 Work Description of Project :

This is a project of our client so we have to deliver the project in given period of time. So, earlier on section we given all the data of the project breakdown technique and also time mapping etc. So here for the system development process there are individual backend team for development the backend of the webserver and database and there are front team they are working with the interface design , page layout, UI payment gateway , login etc. So I was an intern in their company I am joining in the frontend section team. So there I have to do and learn those design material of UI, user dashboard, registration page, login page, footer section also working with CSS pre-processor SASS for designing. And this is the way how web developer work in a development project. And at the end when all the modules , Component , Routing And also Nodejs backend server ready then we connect the backend with frontend by Api fetching and how the project run. So from working in there I can learn lots of things which can make me benefited on my future career.

Chapter-7

Project as Engineering Problem Analysis

7.1 Sustainability of Project :

Project sustainability is a very important part of any project. If the project is not sustainable for a long term that affects a lot because then clients became disappointed by our work and chance of cancel all other future work. So reducing this kind of problem we try to use the best and latest technology Angular to design our project so that our website are much more efficient and give a good performance. But client have to keep in mind that a website or webserver always have to go through maintenance period so if the website is maintain continuously by a limited period of time it's going to be sustainable for a long period of time and client don't have to face any kind of problem or need not to make changes on technology what are using to develop his website. [9] Now here given some point why angular is good for an E-commerce site and sustainable:

1. Maintains high-quality web pages : With its awesome coding flexibility, Angular allows you to build your e-commerce website like an expert. It eliminates the unnecessary web pages and allows you to maintain high-quality web pages to attract more customers.[14]
2. Low code framework: Angular framework offers many features and developers have demonstrated that it is both easy to understand and includes fewer codes. The simple code is one of the main strengths of Angular. Developers around the world find it simple to develop applications using Angular because it reduces efforts on creating another model-view-controller (MVC) architecture. So, Angular is leading the pathway through its code to build applications in lesser time.
3. High-speed performance: Google Analytics – one of the best analytics tools that measure customer engagement and Google Webmasters – to monitor the website's actions and uncover issues that need fixing, both add performance value. By embedding these tools with Angular application, data are translated into useful business intelligence and SEO strategies can be built for online campaigns. Hence, allowing you an opportunity to strengthen your e-commerce application with this feedback and in-depth analysis.[14]

4. **SEO Friendly Site** : Search-engine-optimization (SEO) is an integral feature for any e-commerce application. It allows you to rank your store higher during a search. While this is an organic way for your e-commerce website to draw customers, the use of keywords plays an important role. With Angular, you can be at ease with your SEO efforts, because it allows you to get traction in the search results with its code. This SEO feature will compliment your website and help your website rank higher.
5. **Improved User Interface** : HTML is a declarative language that is used for designing appealing web page styles. As Angular extends the HTML attributes with more features, it's easier for developers to design attractive web pages. So, you can deliver an immersive user interface to your consumers through your e-commerce website.

7.2 Socio and Economical Effects and Analysis :

As aspect of our current situation online platform are very much becoming popular. In Bangladesh before 2018 online platform of shopping is not very much popular. People can't buy any product over internet and the reason behind there are very much confusion and also trust issue. So in that people are much comfortable to buy anything from the market. But then after that 2019 and 2020 online market getting popular day by day and people are know the value of an online shop and understand that an online shop can be save their money and time also. And by this period of time many more online shopping and E-commerce site adding to our market and there services are become trustable day by day. So it create a great socio and economical value.

Online Shopping is the methodology whereby buyers direct buy stock and enterprises with no mediator administration over the Internet. The objective of our web application venture is to build up an electronic interface for individuals to purchase and sell items on the web. So It can be say upon the above discussion that of our clients give a good service to their customer and maintain their website properly it can be very popular and create a great impact to increase our economic value.

Chapter-8

Lesson Learned

8.1 Problem Faced During this Period :

In this pandemic situation there sometimes occurred some problem like that we don't meet up together frequently and discuss about the implementation of the project implementation. All our client and team meeting held over on online platform. We uses online platform discord for communicate with each other and share each other work there. And working with new technology it's been challenging for me throughout the intern period.

8.2 Outcome of this Intern Period:

The outcome of this intern is very important for my future career. I learned lot more important things from this internship period. Its also help me in my future career development in web technology. Our teammate are also very helpful they support me a lot throughout this internship. And it's also increase my confidence and skill to work in a different company after that. And though its help almost on online platform so its also increase my online communication skill better. So this internship is very much important and good effective for my future career.

Chapter-9

Future Work & Conclusion

9.1 Future Work :

In future the company have planned to expand their business all over the country in this case there are plan to make this E-commerce website make more efficient and optimize than previous. So that their server never can take heavy load and never get down. They also upgrade their functionality that customer also track their delivery product easily. Artificial Intelligence can be added to the system that can automatic suggest different products to the customer based on their previous search query. And also continually upgrade the website in need based of their customer feedback.

And, In future of my career I have a keen interest that I want a working as a full time web developer. So for my career goal this internship is really very much helpful for me. From this short period of time I learn a lot of things from this internship period. So I want that I can do implement my gaining knowledge and also increase my knowledge more as becoming a successful developer in my future.

9.2 Conclusion :

The internship has been a very fruitful and worthy experience for me. I was able to work, hands-on, in an industry that I had no prior knowledge about. The process of transforming the rich theoretical knowledge with the practical knowledge of the industry has dawned on me and driven to seek excellence in the craft of software engineering. Interns don't usually get to work on live projects and contribute to the workflow of an ongoing project in the office. But the people at Softlab IT , felt that I was worth giving a chance to and tasked me with such projects that would help me grow in every aspect of my career. Being the youngest there and also the least experienced of the bunch, I got a plethora of advice from the people of the offices. I also learned the tools and techniques that were utilized by industry hardened software developers and engineers alike. On top of that I was taught etiquettes of the corporate life and also how to maintain proper rapport with my co-workers. These are the skills that can't be learned using books and have to be applied to assure proper implementation. It was a blessing for me to be in the presence of such good people who were willing to help me at each part of my journey through the internship. In the end, I'd like to thank both my internal and external supervisors whose guidance and motivations have persuaded me to strive for the success in this project and also for the endless projects to come in my way in the future.

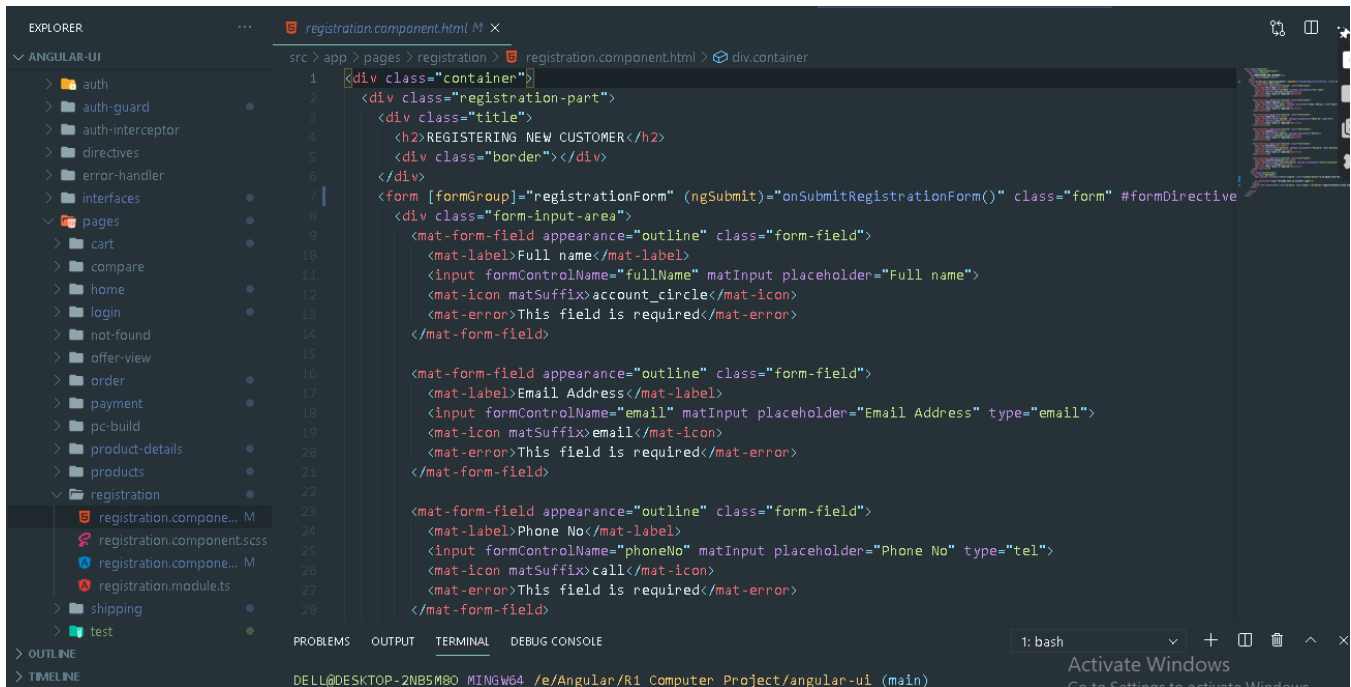
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2. <http://www.ir.juit.ac.in:8080/jspui/handle/123456789/24038>
3. <https://clockwise.software/blog/best-angular-applications/>
4. <https://angular.io/docs>
5. <https://material.angular.io/>
6. <https://www.typescriptlang.org/>
7. <https://nodejs.org/en/>
8. <https://www.softwebsolutions.com/resources/angular-for-ecommerce-development.html>
9. <https://www.altexsoft.com/blog/non-functional-requirements/>
10. <https://x-team.com/blog/angular-typescript/>
11. <https://medium.com/@stephenfluin/adding-a-node-typescript-backend-to-your-angular-app-29b0e9925ff>
12. <https://softlabit.com/>
13. https://reposit.haw-hamburg.de/bitstream/20.500.12738/8417/1/BA_Wohlgethan_2176410.pdf
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15. <https://keenethics.com/blog/nodejs-security>

Appendix

Coding Snippet

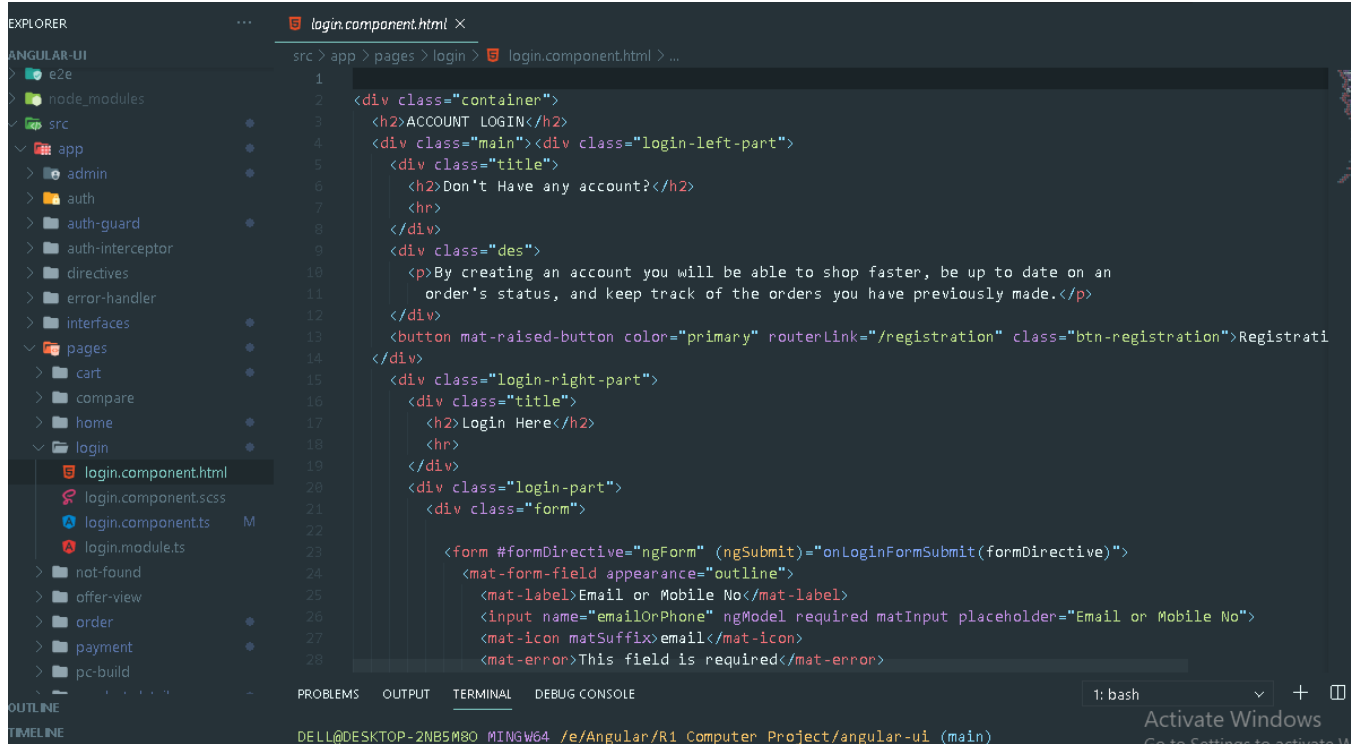
1.User Registration :



```
1 <div class="container">
2   <div class="registration-part">
3     <div class="title">
4       <h2>REGISTERING NEW CUSTOMER</h2>
5     <div class="border"></div>
6   </div>
7   <form [formGroup]="registrationForm" (ngSubmit)="onSubmitRegistrationForm()" class="form" #formDirective
8     <div class="form-input-area">
9     <mat-form-field appearance="outline" class="form-field">
10      <mat-label>Full name</mat-label>
11      <input formControlName="fullName" matInput placeholder="Full name">
12      <mat-icon matSuffix>account_circle</mat-icon>
13      <mat-error>This field is required</mat-error>
14    </mat-form-field>
15
16    <mat-form-field appearance="outline" class="form-field">
17      <mat-label>Email Address</mat-label>
18      <input formControlName="email" matInput placeholder="Email Address" type="email">
19      <mat-icon matSuffix>email</mat-icon>
20      <mat-error>This field is required</mat-error>
21    </mat-form-field>
22
23    <mat-form-field appearance="outline" class="form-field">
24      <mat-label>Phone No</mat-label>
25      <input formControlName="phoneNo" matInput placeholder="Phone No" type="tel">
26      <mat-icon matSuffix>call</mat-icon>
27      <mat-error>This field is required</mat-error>
28    </mat-form-field>
29  </div>
30 </form>
31 </div>
```

Figure 8.1: User Registration Coding Snippet

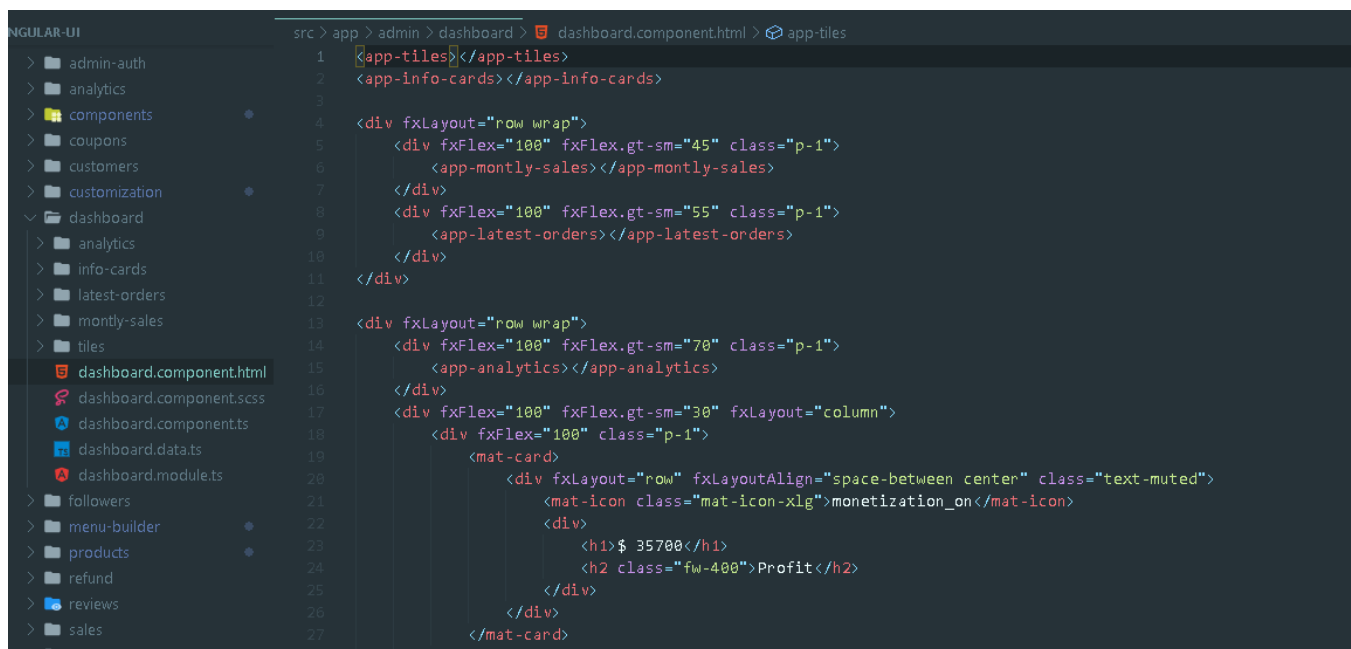
2.User login :



```
1 <div class="container">
2   <h2>ACCOUNT LOGIN</h2>
3   <div class="main"><div class="login-left-part">
4     <div class="title">
5       <h2>Don't Have any account?</h2>
6     </div>
7     <div class="des">
8       <p>By creating an account you will be able to shop faster, be up to date on an
9         order's status, and keep track of the orders you have previously made.</p>
10    </div>
11    <button mat-raised-button color="primary" routerLink="/registration" class="btn-registration">Registrati
12  </div>
13  <div class="login-right-part">
14    <div class="title">
15      <h2>Login Here</h2>
16    </div>
17    <div class="login-part">
18      <div class="form">
19        <form #formDirective="ngForm" (ngSubmit)="onLoginFormSubmit(formDirective)">
20          <mat-form-field appearance="outline">
21            <mat-label>Email or Mobile No</mat-label>
22            <input name="emailOrPhone" ngModel required matInput placeholder="Email or Mobile No">
23            <mat-icon matSuffix>email</mat-icon>
24            <mat-error>This field is required</mat-error>
25          </mat-form-field>
26          <button mat-raised-button color="primary" type="submit">Login</button>
27        </form>
28      </div>
29    </div>
30  </div>
31 </div>
```

Figure 8.2: User Login Coding Snippet

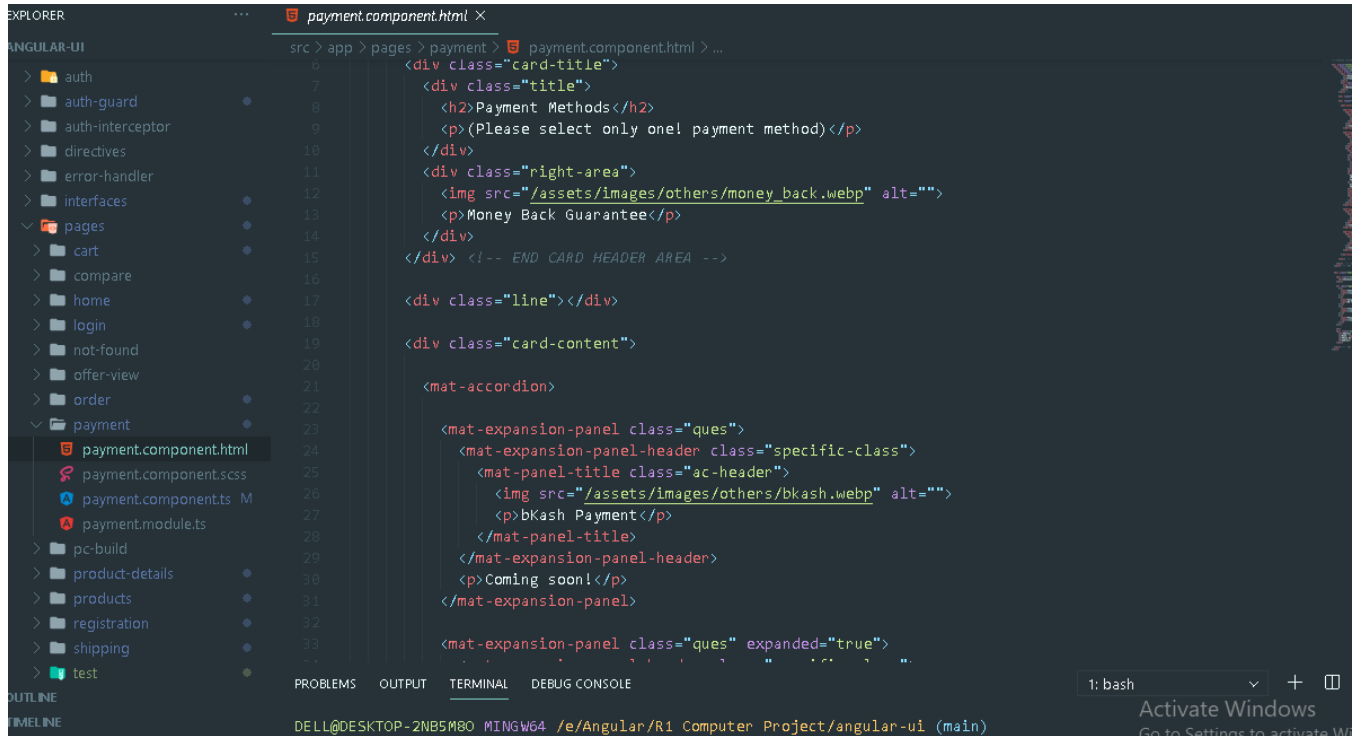
3.Admin Dashboard :



```
1 <app-tiles></app-tiles>
2 <app-info-cards></app-info-cards>
3
4 <div fxLayout="row wrap">
5   <div fxFlex="100" fxFlex.gt-sm="45" class="p-1">
6     <app-monthly-sales></app-monthly-sales>
7   </div>
8   <div fxFlex="100" fxFlex.gt-sm="55" class="p-1">
9     <app-latest-orders></app-latest-orders>
10  </div>
11 </div>
12
13 <div fxLayout="row wrap">
14   <div fxFlex="100" fxFlex.gt-sm="70" class="p-1">
15     <app-analytics></app-analytics>
16   </div>
17   <div fxFlex="100" fxFlex.gt-sm="30" fxLayout="column">
18     <div fxFlex="100" class="p-1">
19       <mat-card>
20         <div fxLayout="row" fxLayoutAlign="space-between center" class="text-muted">
21           <mat-icon class="mat-icon-xlg">monetization_on</mat-icon>
22           <div>
23             <h1>$ 35700</h1>
24             <h2 class="fw-400">Profit</h2>
25           </div>
26         </div>
27       </mat-card>
28     </div>
29   </div>
30 </div>
```

Figure 8.3: Admin Dashboard Coding Snippet

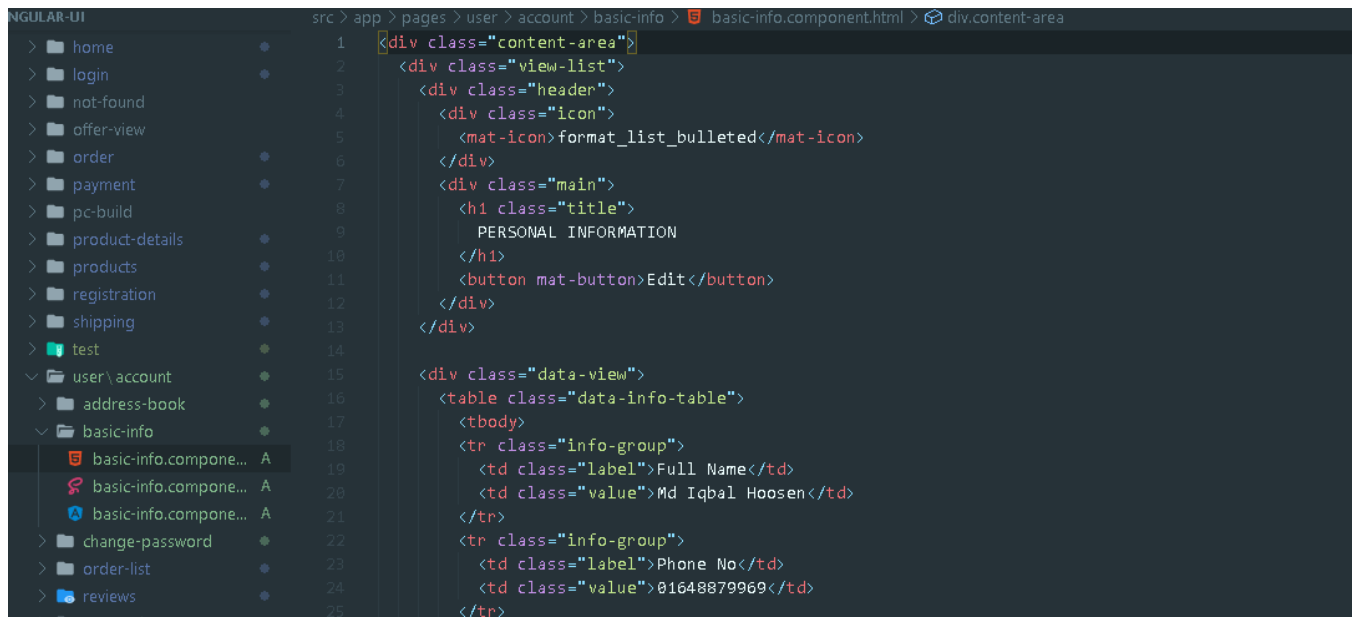
4.Payment :



```
src > app > pages > payment > payment.component.html > ...
6 <div class="card-title">
7   <div class="title">
8     <h2>Payment Methods</h2>
9     <p>(Please select only one payment method)</p>
10  </div>
11  <div class="right-area">
12    
13    <p>Money Back Guarantee</p>
14  </div>
15 </div> <!-- END CARD HEADER AREA -->
16
17 <div class="line"></div>
18
19 <div class="card-content">
20
21   <mat-accordion>
22
23     <mat-expansion-panel class="ques">
24       <mat-expansion-panel-header class="specific-class">
25         <mat-panel-title class="ac-header">
26           
27           <p>bKash Payment</p>
28         </mat-panel-title>
29       </mat-expansion-panel-header>
30       <p>Coming soon!</p>
31     </mat-expansion-panel>
32
33     <mat-expansion-panel class="ques" expanded="true">
```

Figure 8.4: Payment Coding Snippet

5.User Dashboard Page :

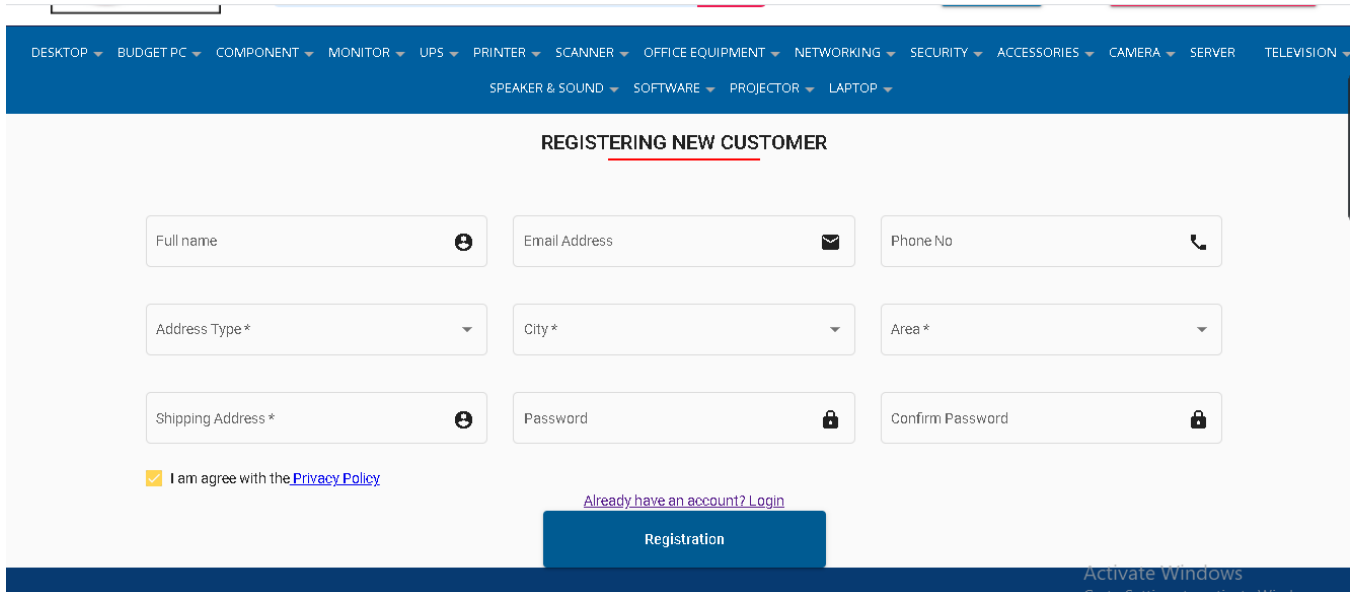


```
src > app > pages > user > account > basic-info > basic-info.component.html > div.content-area
1 <div class="content-area">
2   <div class="view-list">
3     <div class="header">
4       <div class="icon">
5         <mat-icon>format_list_bulleted</mat-icon>
6       </div>
7       <div class="main">
8         <h1 class="title">
9           PERSONAL INFORMATION
10        </h1>
11        <button mat-button>Edit</button>
12      </div>
13    </div>
14
15    <div class="data-view">
16      <table class="data-info-table">
17        <tbody>
18          <tr class="info-group">
19            <td class="label">Full Name</td>
20            <td class="value">Md Iqbal Hoosen</td>
21          </tr>
22          <tr class="info-group">
23            <td class="label">Phone No</td>
24            <td class="value">01648879969</td>
25          </tr>
```

Figure 8.5: User Dashboard Coding Snippet

Web Interface Snippet

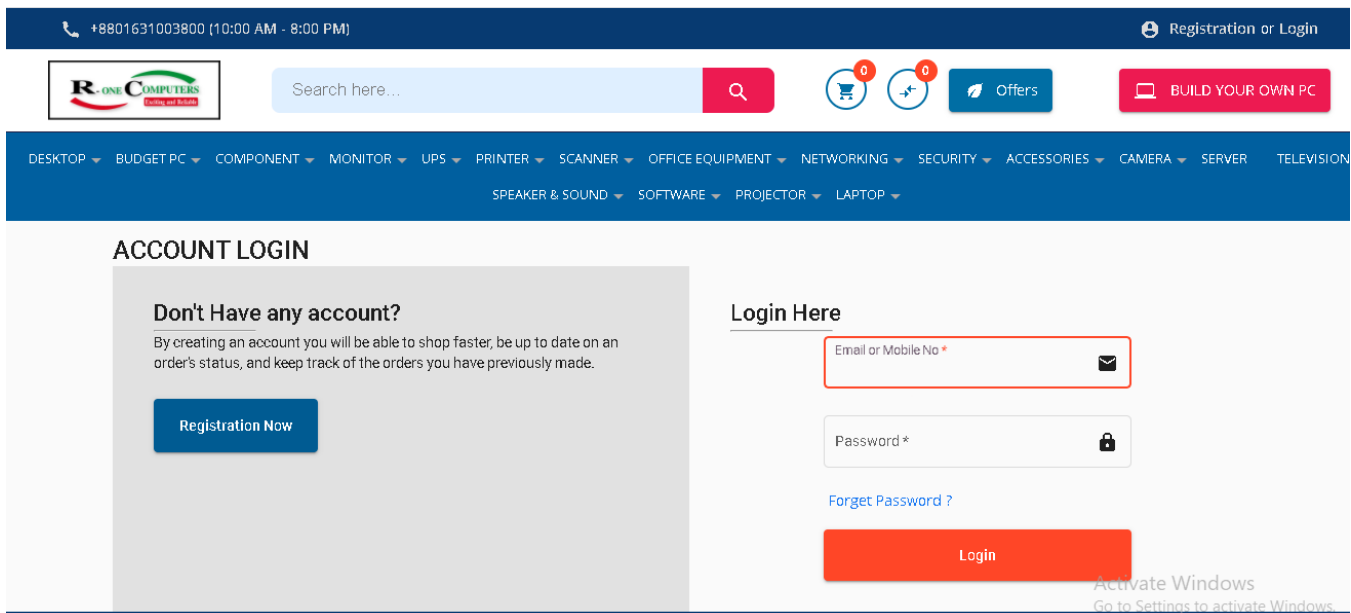
1.User Regestration Page:



The registration page features a blue header with a navigation menu including Desktop, Budget PC, Component, Monitor, UPS, Printer, Scanner, Office Equipment, Networking, Security, Accessories, Camera, Server, and Television. Below the header, the title "REGISTERING NEW CUSTOMER" is centered. The form consists of several input fields: "Full name", "Email Address", "Phone No", "Address Type*", "City*", "Area*", "Shipping Address*", "Password", and "Confirm Password". Each field has a corresponding icon (person, envelope, phone, dropdown, location pin, and lock). A checkbox labeled "I am agree with the Privacy Policy" is present, along with a link to "Already have an account? Login". A blue "Registration" button is at the bottom. A Windows activation watermark is visible in the bottom right corner.

Figure : 8.6 User Registration Interface

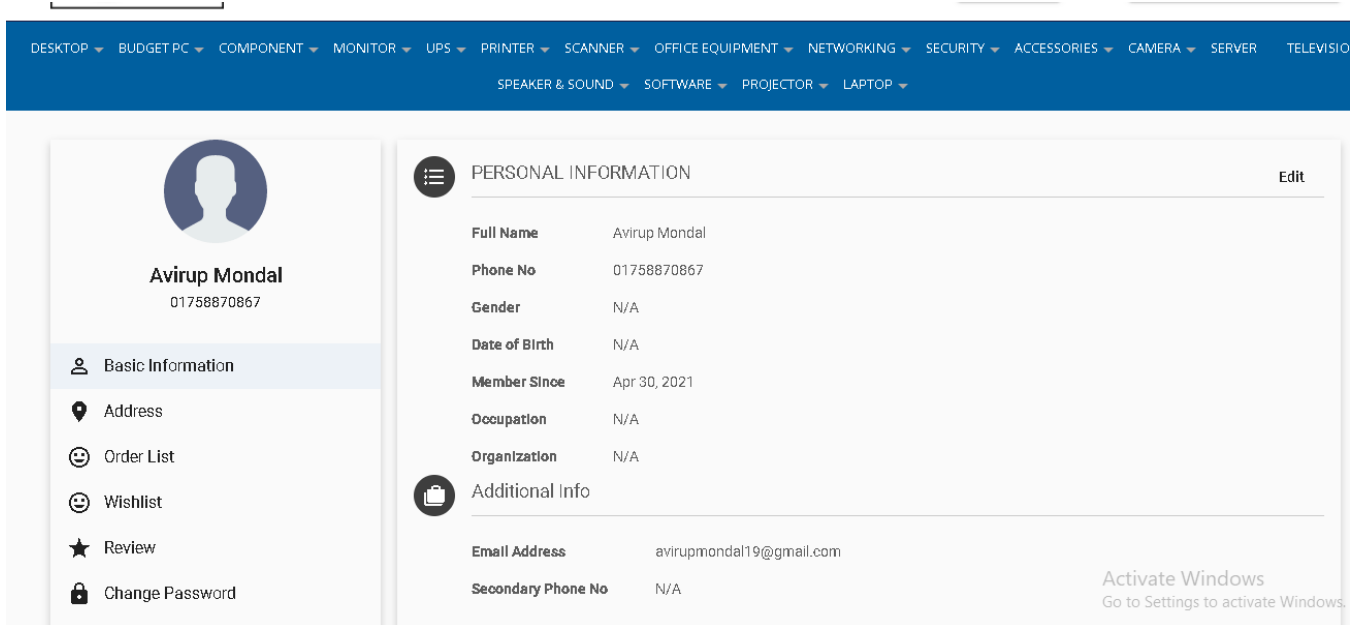
2.User Login Page:



The login page has a blue header with a contact number "+8801631003800 (10:00 AM - 8:00 PM)" and a "Registration or Login" link. The main content area is titled "ACCOUNT LOGIN". On the left, a section titled "Don't Have any account?" explains the benefits of creating an account and includes a "Registration Now" button. On the right, a section titled "Login Here" contains input fields for "Email or Mobile No*" and "Password*", a "Forgot Password?" link, and a red "Login" button. A Windows activation watermark is visible in the bottom right corner.

Figure : 8.7 User Login Interface

3. User Dashboard Page :



The User Dashboard interface features a blue navigation bar at the top with a list of product categories: DESKTOP, BUDGET PC, COMPONENT, MONITOR, UPS, PRINTER, SCANNER, OFFICE EQUIPMENT, NETWORKING, SECURITY, ACCESSORIES, CAMERA, SERVER, and TELEVISION. Below this, the dashboard is divided into two main sections. On the left, a user profile card for 'Avirup Mondal' (01758870867) includes a sidebar menu with options: Basic Information, Address, Order List, Wishlist, Review, and Change Password. The main area of the dashboard displays 'PERSONAL INFORMATION' with fields for Full Name, Phone No, Gender, Date of Birth, Member Since, Occupation, and Organization. Below this is an 'Additional Info' section with fields for Email Address and Secondary Phone No. An 'Edit' link is located in the top right corner of the personal information section. A Windows watermark is visible in the bottom right corner.

PERSONAL INFORMATION		Edit
Full Name	Avirup Mondal	
Phone No	01758870867	
Gender	N/A	
Date of Birth	N/A	
Member Since	Apr 30, 2021	
Occupation	N/A	
Organization	N/A	

Additional Info	
Email Address	avirupmondal19@gmail.com
Secondary Phone No	N/A

Figure : 8,8 User Dashboard Interface

4. Admin Login Page :



The Admin Login page features a dark blue header with the 'R1 COMPUTER' logo. The main content area is divided into two sections. On the left, a circular graphic contains an illustration of a laptop with various icons (shopping cart, document, lock, and a 'BUY NOW' button) floating above it. On the right, the 'Admin Login' form is displayed, featuring a title, a subtitle 'Enter your details bellow to continue', and two input fields for 'Email or Username' and 'Password'. A 'Login' button is positioned below the password field. A 'Forget Password?' link is located to the right of the password field. A Windows watermark is visible in the bottom right corner.

Admin Login
Enter your details bellow to continue

Email or Username

Password

[Forget Password?](#)

[Login](#)

Figure : 8.9 Admin Login Interface

5. Admin Dashboard :



Figure : 8.10 Admin Dashboard.

END