

### INSTITUTE OF MATHEMATICS AND COMPUTER SCIENCE

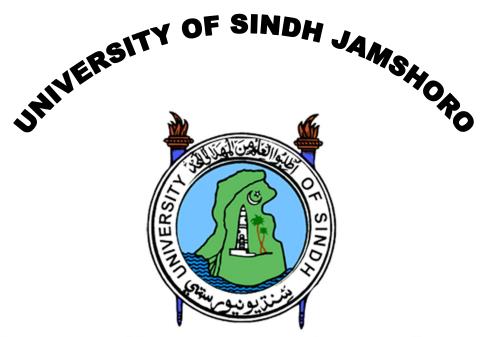
# BS (CS) Thesis

# **Shopping Website (Fritz)**

A place where you can start your business Online And Shop Online

THESIS SUBMITTED TOWARDS THE PARTIAL FULFILMENT OF THE REQUIREMENT OF THE UNIVERSITY OF SINDH FOR THE AWARD OF BACHELOR OF SCIENCE IN COMPUTER SCIENCE DEGREE.

December, 2022



## INSTITUTE OF MATHEMATICS AND COMPUTER SCIENCE

# BS (CS) Thesis

# **Shopping Website (Fritz)**

A place where you start Your business Online and Shop Online

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## INSTITUTE OF MATHEMATICS AND COMPUTER SCIENCE

### **CERTIFICATE**

This is to certify that the project entitled "Shopping Website (Fritz) A Place Where You Start Your Business Online And Shop Online " has been carried out by Faraz Akbar Akhound, Ziaf Hussain Shah, Rayed Shah and Usama Ali, during the academic year 2022 as a partial requirement for the degree of Bachelors of Science in Computer Science (BS.CS).

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# **DECLARATION**

This thesis is our original work and has not been ever submitted, in whole or in part, for a degree at this or any other university. It does not contain, to the best of our knowledge and belief, any material published or written by any other person except as acknowledged in the text.

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# **DEDICATION**

We dedicate our dissertation work to our family and many of our mentors.

### **ACKNOWLEDGEMENTS**

We are grateful with the core of our heart to ALMIGHTY ALLAH who made it possible to complete this thesis / project successfully.

Our deepest gratitude goes to our parents for their unflagging love and support throughout our life. We have no suitable words that can fully describe their everlasting love to us. Similarly, we are grateful to our other family members who always encouraged us in getting this valuable task completed.

We specially thank our supervisor, *Mr. Fiaz Memon*, for his supervision and support that motivated us throughout the duration of the project with invaluable suggestions time and again.

We wish to thank the Director Institute of Mathematics and Computer Science, University of Sindh, Jamshoro for providing required facilities throughout the project duration.

Finally, we thank our friends, colleagues, and well-wishers for their continuous encouragement during the course of this study.

### **ABSTRACT**

This project deals with developing an e-commerce website for selling products online. It is a platform where anyone can start their online business, our website is specifically designed for purchasing and selling products online. The main purpose for creating this website is to make online business easier for those people who would only like to work from their homes.

In order to develop an e-commerce website, a number of Technologies must be studied and understood. These include multi-tiered architecture, server and client side scripting techniques, implementation technologies such as Javascript, programming language (such as PHP), relational databases (such as MySQL) .and for designing (HTML / CSS / BOOTSTRAP / DATATABLES)

This is a project with the objective to develop a basic website where a consumer is provided with a shopping cart application and also to know about the technologies used to develop such an application. This document will discuss each of the underlying technologies to create and implement an e-commerce website

An ecommerce website is a platform that allows businesses and individuals to sell products and services online. These websites typically include features such as product listings, shopping carts, and payment processing. Customers can browse and purchase items on the website, and the website will handle the transaction and delivery of the product or service. Additionally, ecommerce websites often provide tools for businesses to manage their inventory, track sales, and analyze customer data. Overall, ecommerce websites enable online shopping and making it convenient for customers to purchase goods and services with a few clicks.

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## **CHAPTER 1**

## INTRODUCTION

### 1.1 MOTIVATION

In the recent years, we have seen a lot of ecommerce websites that sell products online, for ex: IKEA, Amazon, Ali Express etc....

So, we came up with the idea of making an ecommerce shopping website where anyone can start a business from their home.

### 1.2 PROBLEM STATEMENT

In the business of shops industry, the technical problem was addressed regarding Product Sales and how people from different cities would be able to know about our products.

For ex: I have a shop in Hyderabad/Sindh and I'm the founder of Fritz the clothing brand now I want to increase my sales and I want everyone to know about my brand, if someone needs clothes from my brand they don't have to visit my shop to buy clothes, all they have to do is to open the website of my brand and order clothes with just one simple click and the product will be at your doorstep within a week or so, this problem is not only for me it's for everyone who is in the business of selling products .there are dozens of websites that sell their products online on other websites that are used more often by people for buying online products for ex: fritz is working under daraz brand and daraz gets their commission for any product our brand sells so we have decided that why should we pay daraz or any

other store to list our product on their app, So we have decided to make a web application or e-commerce Online Website so if someone wants to sell their products online globally he or she doesn't need to pay any other brand, just simply list your products on our website and make your business global.

### 1.3 OBJECTIVE

The main objective is to resolve the problem that people face nowadays and that is to sell their products in different cities and increase their sales without actually leaving their homes and anyone can launch their brand online like J., Almirah, Khaadi etc....

The objective of this project is to develop a general-purpose e-commerce store where any product (such as clothes, watches, belts, mobile phones, electronic items and home appliances) can be bought from the comfort of home through the Internet.

The main objective of an ecommerce website is to provide a platform for businesses to sell their products or services online to a wider customer base, while also providing convenience and a seamless shopping experience for consumers. The website should be designed to attract and retain customers, increase sales and revenue, and provide a user-friendly and secure platform for transactions. Additionally, an ecommerce website may also aim to improve customer engagement and loyalty through features such as personalized recommendations and customer reviews.

### 1.4 SCOPE OF THE THESIS

A personal shopping website is a type of ecommerce platform that focuses on providing a personalized shopping experience for its customers. The scope of a personal shopping website can include:

- Personal styling and fashion advice: The website can offer personalized styling and fashion advice based on the customer's preferences and body type.
- Curated product selection: The website can offer a curated selection of products tailored to the customer's preferences and budget.
- Outfit planning: The website can offer a feature where customers can plan
  their outfits and coordinate clothing and accessories to create a complete
  look.
- Personal shoppers: The website could also provide a personal shopper who
  is available to assist customers with their shopping needs.
- Gift ideas: The website can offer personalized gift ideas and suggestions for special occasions and holidays.

Overall, the scope of a personal shopping website is focused on providing a highly personalized and convenient shopping experience for its customers.

### **CHAPTER 2**

### LITERATURE REVIEW/BACKGROUND

The background of ecommerce websites can be traced back to the early days of the internet, when the first online transactions took place. The first ecommerce website, the Internet Shopping Network, was launched in 1979 by Michael Aldrich, which allowed customers to purchase goods via their television sets.

As the internet and web technology evolved, ecommerce websites became more sophisticated and user-friendly. In the 1990s, companies such as Amazon and eBay launched, providing online marketplaces for buyers and sellers to connect. The widespread adoption of smartphones and mobile devices in the early 2000s led to the rise of mobile commerce, allowing customers to shop online using their mobile devices.

As ecommerce grew in popularity, it has also led to changes in consumer behavior and the retail industry. Many brick-and-mortar retailers have struggled to compete with the convenience and lower prices offered by online sellers, leading to the closure of many physical stores.

The rise of social media and the increasing use of artificial intelligence and machine learning in ecommerce have also led to new trends such as social commerce and personalized recommendations. Ecommerce is continuously evolving as technology advances and new business models emerge.

### THE IMPACT OF ECOMMERCE

The impact of ecommerce is far and wide, rippling from small businesses to global enterprises.

Here we'll highlight some of the major ways ecommerce has shaped the retail landscape.

### THE RISE OF ECOMMERCE MARKETPLACES

Online marketplaces have been on the rise since the mid-1990s with the launch of giants we know today, such as Amazon, Alibaba and others.

Amazon in particular is known for its unique growth strategy that has helped them achieve mass-adoption and record-breaking sales. By offering a broad selection and extreme convenience to customers, they've been able to quickly scale up through innovation and optimization on-the-go.

But Amazon doesn't do this alone. In the fourth quarter of 2021, 56% of Amazon's paid units were sold by third-party sellers (i.e. not Amazon).

### CUSTOMERS SHOP DIFFERENTLY.

Ecommerce is revolutionizing the way modern consumers shop.

Today, we know that there are at least 2.14 billion digital buyers, which is 27.6% of the 7.74 billion people in the world. And by 2025, Statista projects there will be 291.2 million online buyers in the U.S. alone.

# SOCIAL MEDIA LETS CONSUMERS EASILY SHARE PRODUCTS TO BUY ONLINE.

Today, ecommerce shoppers can discover and be influenced to purchase products or services based on recommendations from friends, peers and trusted sources (like influencers) on social networks like Facebook, Instagram and Twitter.

Many social media platforms now offer ecommerce features, such as in-app checkout, shoppable posts and "Buy Now" buttons that take users directly to a brand's product page.

### GLOBAL ECOMMERCE IS GROWING RAPIDLY.

In 2021, over 2.14 billion people worldwide were estimated to shop online, up from 1.66 billion global digital buyers in 2016.

Chinese ecommerce platform, Taobao, is the largest online marketplace with a gross market value (GMV) of \$711 billion. For context, Tmall and Amazon ranked second and third with \$672 billion and \$390 billion GMV in annual third-party global market value respectively.

With so many ecommerce platforms, marketplaces and digital solutions available, there are practically no limits for merchants looking to sell online, which makes it easier than ever for businesses to go global.

### **CHAPTER 3**

### **METHODOLOGY**

# 3.1 Defining the target audience and determining the products or services to be sold.

Defining the target audience is the process of identifying and understanding the specific group of people that a business wants to reach and sell products or services to. This includes factors such as demographics, interests, needs, and pain points. Determining the products or services to be sold is the process of selecting the specific items that will be offered for sale on the ecommerce website, based on the target audience's needs and preferences. It also includes researching and analyzing the competition, trends in the market and identifying the unique value proposition that the business can provide. By defining the target audience and determining the products or services to be sold, the business can create a more targeted and effective marketing strategy and ensure that the products or services offered are in demand and will generate revenue.

# 3.2 Designing and developing the website, including creating a user-friendly interface

Designing and developing an ecommerce website includes creating a visually appealing and user-friendly interface that makes it easy for customers to navigate and find the products or services they are looking for. This includes organizing the website's layout and structure, choosing colors, fonts, and imagery that align with the brand, and ensuring that the website is responsive and works well on different devices.

# Populating the website with products or services, including creating detailed product descriptions and high-quality images

Populating an ecommerce website with products or services involves adding the items that will be offered for sale, including detailed product descriptions and high-quality images. The product descriptions should include all relevant information such as size, color, materials, and features. They should be written in a clear and concise manner and should be optimized for search engines (SEO) to increase visibility and drive traffic to the site

# Optimizing the website for search engines (SEO) to increase visibility and drive traffic to the site

Optimizing an ecommerce website for search engines, also known as SEO (Search Engine Optimization), is the process of making changes to the website to improve its visibility and ranking in search engine results pages (SERPs). The goal of SEO is to increase the quantity and quality of traffic to a website by making it more visible and relevant to search engines and users.

There are several techniques that can be used to optimize an ecommerce website for search engines, including:

Keyword research: Identifying the relevant keywords and phrases that people are using to search for products or services related to the website.

On-page optimization: Optimizing the website's content and structure, including meta tags, header tags, and URLs, to make it more search engine-friendly.

Technical optimization: Improving the website's technical aspects, such as site speed, mobile responsiveness, and website architecture, to make it more search engine-friendly.

Content creation: Creating high-quality and unique content that is relevant to the products or services offered on the website, and that uses the targeted keywords.

Backlinks: Building high-quality backlinks to the website from other relevant and authoritative websites.

Measuring and Analyzing: Use tools to measure the performance of the website and track the progress of the optimization efforts.

By implementing these techniques, an ecommerce website can increase its visibility in search engine results pages, which can lead to more traffic and ultimately more sales.

### **CHAPTER 4**

### SYSTEM DEVELOPMENT

### 4.1 SYSTEM DEVELOPMENT (FRITZ)

The system development of an ecommerce website involves a series of steps and processes to design, implement, and maintain the website. The system development process can include:

Requirements gathering and analysis: Identifying and documenting the specific requirements for the ecommerce website, such as functional and non-functional requirements, and conducting an analysis of the target market and competitors.

System design: Designing the technical architecture of the ecommerce website, including the choice of technologies, software, and infrastructure.

Development: Developing the ecommerce website using programming languages such as HTML, CSS, JavaScript, and PHP, and using frameworks and libraries to build the website.

Testing: Testing the ecommerce website for functionality and performance, including usability testing, load testing, and security testing.

Deployment: Deploying the ecommerce website to a live server or hosting platform, and configuring the website to be accessible to customers.

Maintenance: Regularly maintaining and updating the ecommerce website to ensure optimal performance, fix bugs and glitches, and add new features.

The development of an ecommerce website also includes the integration of various features such as Payment gateways, inventory management, customer management, shipping and delivery management. This can be done by using prebuilt ecommerce platforms or building it from scratch.

It's important to note that the system development process can vary depending on the specific ecommerce website and the technologies and frameworks being used. A team of professionals such as developers, designers, project managers and QA engineers are usually involved in the development process.

### 4.2 DEVELOPMENT PHASES

Planning and Requirements Gathering: In this phase, the project team identifies the goals and objectives of the ecommerce website, and gather the requirements for the website such as features, functionalities, and design.

Design and Prototyping: This phase involves creating wireframes and mockups of the website's layout and design, as well as creating a prototype of the website to showcase the design and functionality to stakeholders.

Development: This phase involves the actual development of the website, using programming languages such as HTML, CSS, JavaScript, and PHP. The website's backend and database are also developed during this phase.

Testing and Quality Assurance: In this phase, the website is thoroughly tested for bugs, usability, and performance. Any issues found during testing are fixed before the website is launched.

Deployment: Once the website is tested and approved, it is deployed to a live server or hosting platform and made accessible to customers.

Maintenance and Support: After the website is launched, it requires regular maintenance, updates and bug fixes to keep it running smoothly.

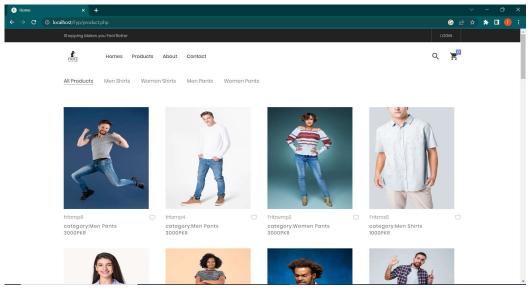
### 4.3 APPLICATION WORKING

### 4.3.1 WEB APPLICATION WORKING FOR USERS

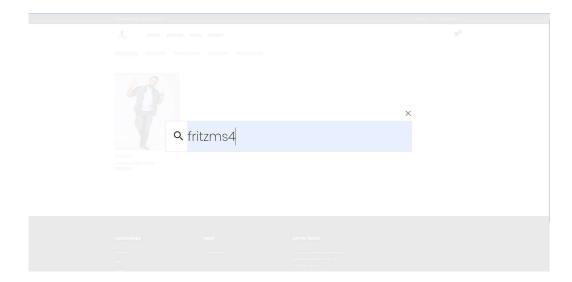
An ecommerce website typically works by providing a platform for customers to browse and purchase products or services online. The specific application working of an ecommerce website can vary, but generally includes the following steps:

Main Page Customers can browse through the website's catalog of products, which are usually organized into categories. They can use search filters and to narrow down their search results.

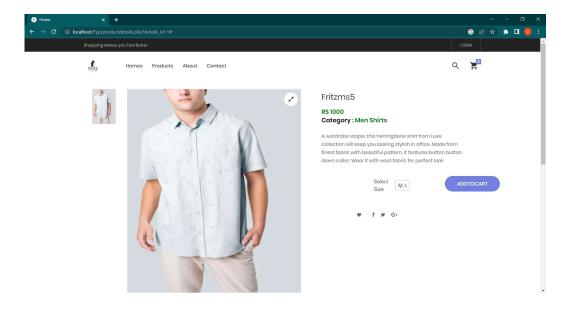




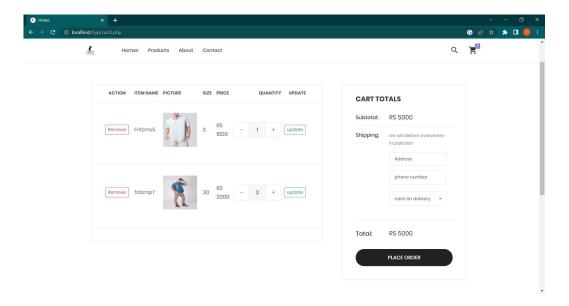
# **Product Searching**



**Product selection:** Customers can view detailed product information, such as images, descriptions, and specifications, and can add products to their shopping cart.



**Checkout:** Once customers have selected their products, they can proceed to checkout. They are prompted to provide their shipping and billing information, and select a payment method.

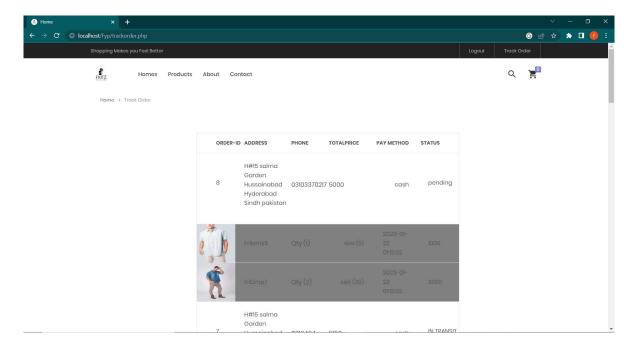


**Payment:** The customer's payment is processed and the order is confirmed.

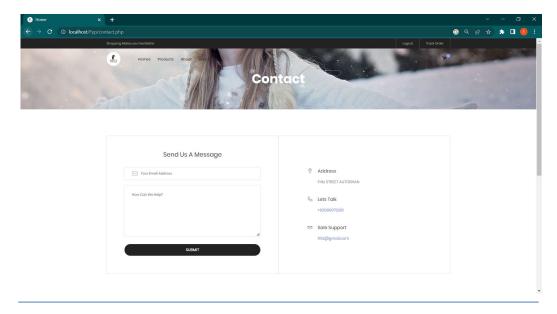
**Order confirmation:** The customer receives a confirmation call with the details of their order.

**Order fulfillment:** The order is fulfilled by the merchant and shipped to the customer.

**Order tracking:** The customer can track the status of their order using the website's order tracking feature, which provides information on the order's shipping status and.



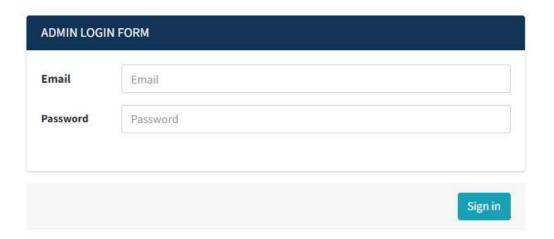
Customer service: Fritz website also provides customer service through a contact form



### 4.3.2WEB APPLICATION WORKING FOR ADMINS

An ecommerce website for admin typically works by providing a platform for the website administrator to manage and maintain the website. The specific application working of an ecommerce website for admin can vary, but generally includes the following steps:

### Login

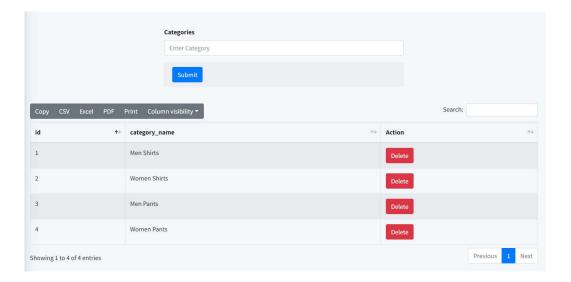


### Dashboard:

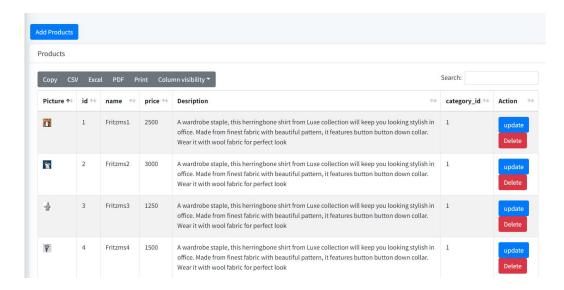


**Product management:** The admin can add, edit, or delete products from the website's catalog, and can also manage product categories.

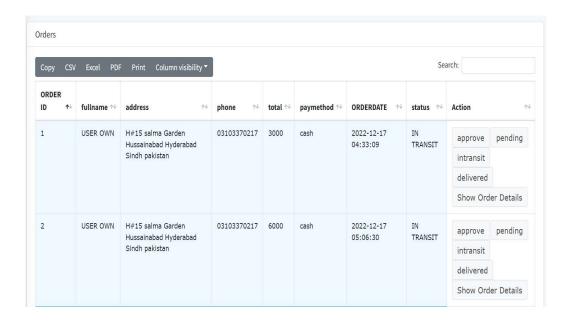
**Product category** in this section admin can add or delete product categories



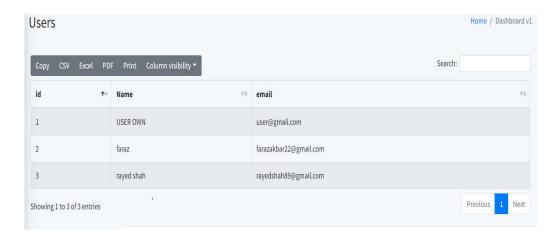
**Product list** in this section admin can add products update view and delete the products



**Order management**: The admin can view, update, and process orders, including tracking order status and fulfillment.

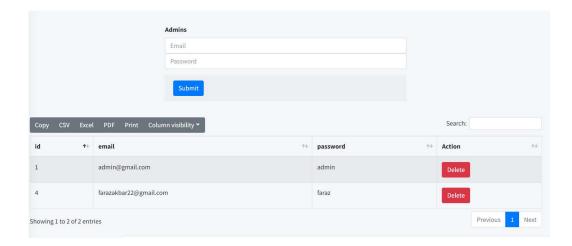


Customer management: The admin can view customer information.

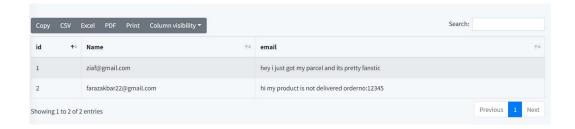


Website design and content management: The admin can manage the website's design and layout, including editing the website's templates and managing the website's content.

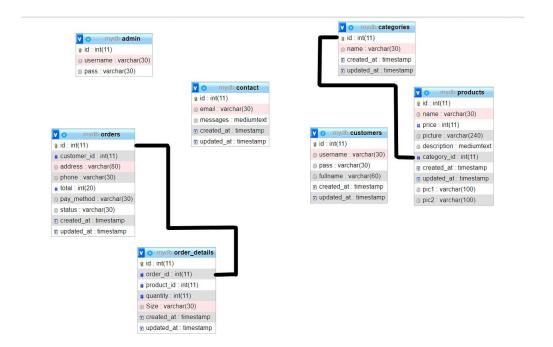
## Admins Managements: in this section admin can view delete and add admins



## Contact Queries: in this section admin can view queries about customers



### **DATABASE**



### 4.3.3 Fritz (The Shopping website)

website Fritz is configured for the clients And the Admin The brand owner. A website where you can purchase products or you can start your brand too. To sell products

For simplicity, it can be divided in three parts *i.e.* 

#### 4.3.4. FRITZ WEBSITE FOR ADMIN

Figure 12: BLYNK Platform

Fritz website provides many easy features to manage your business where you can add your products manage admins manage orders manage categories total number of pending orders total sell total users

### 4.3.5 FRITZ WEBSITE FOR CLIENT

Fritz website provide a client side too where users visit your brand website

Check your show case of products

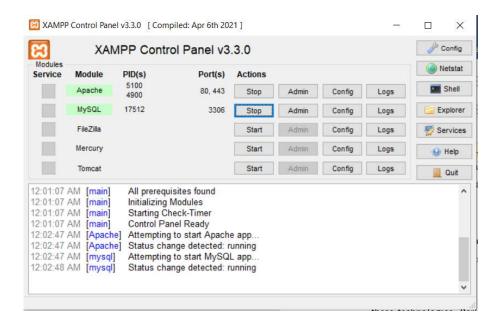
Purchase online products from your website like add to cart delivery address payment method and track order or with the contact us page if a user have any queries about the product he she will ask with the contact us page

### 4.4 TOOLS AND LANGUAGES

#### **4.4.1 XAMPP**

XAMPP is an abbreviation where X stands for Cross-Platform, A stands for Apache, M stands for MYSQL, and the Ps stand for PHP and Perl, respectively. It is an open-source package of web solutions that includes Apache distribution for many servers and command-line executables along with modules such as Apache server, MariaDB, PHP, and Perl.

XAMPP helps a local host or server to test its website and clients via computers and laptops before releasing it to the main server. It is a platform that furnishes a suitable environment to test and verify the working of projects based on Apache, Perl, MySQL database, and PHP through the system of the host itself. Among these technologies, Perl is a programming language used for web development, PHP is a backend scripting language, and MariaDB is the most vividly used database developed by MySQL



#### **4.4.2 HTML**

HTML is the abbreviation for Hypertext Markup Language. This standard markup language is used for the creation of web pages. HTML consists of the elements that guide the browser about how to display the content, and a simple HTML document consists of the tags.

HTML is the standard language that is used for designing the content on the website. Cascading Style Sheets (CSS) and Javascript (JS) are the technologies that help the HTML perform better while designing a website. Hence these technologies can be used along with the HTML.

HTML is responsible for rendering the HTML documents from the local memory locations and web servers to the multimedia pages. HTML includes cues of the actual document. Additionally, it also describes the structure of the web page

### 4.4.3 CSS

CSS stands for Cascading Style Sheets. It is a style sheet language which is used to describe the look and formatting of a document written in markup language. It provides an additional feature to HTML. It is generally used with HTML to change the style of web pages and user interfaces. It can also be used with any kind of XML documents including plain XML, SVG and XUL.

CSS is used along with HTML and JavaScript in most websites to create user interfaces for web applications and user interfaces for many mobile applications.

- You can add new looks to your old HTML documents.
- You can completely change the look of your website with only a few changes in CSS code.

```
<style type="text/css">
body{
    margin: 0;
    padding: 0;
}
h1{

    font-family: verdana;
    color: red;
    font-size: 70px;
    border:1px solid black;
    background-color: yellow;
}
</style>
```

### 4.4.4 BOOTSTRAP

Bootstrap is the most popular HTML, CSS and JavaScript framework for developing a responsive and mobile friendly website.

It is absolutely free to download and use.

It is a front-end framework used for easier and faster web development.

It includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many others.

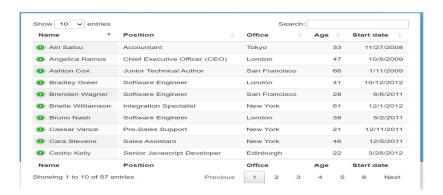
It can also use JavaScript plug-ins.

It facilitates you to create responsive designs.

#### 4.4.5 DATATABLES

The data table is perhaps the most basic building block of business intelligence. In its simplest form, it consists of a series of columns and rows that intersect in cells, plus a header row in which the names of the columns are stated, to make the content of the table understandable to the end user.

In Bootstrap 4, Data Tables can integrate easily with Bootstrap's table styling options to present an interface with a uniform design, based on Bootstrap, for your website. It provides JavaScript validation and cascading style sheet design without any configuration. It includes searching, sorting, and paging of the table without any complicated coding.



#### 4.4.6 PHP

PHP is an HTML-embedded, server-side scripting language designed for web development. It is also used as a general purpose programming language. It was created by Rasmus Lerdorf in 1994 and appeared in the market in 1995. Much of its syntax is borrowed from C, C++, and Java.

PHP codes are simply mixed with HTML codes and can be used in combination with various web frameworks. Its scripts are executed on the server. PHP code is processed by a PHP interpreter. The main goal of PHP is to allow web developer to create dynamically generated pages quickly.

A PHP file consists of texts, HTML tags and scripts with a file extension of .php, .php3, or .phtml. You can create a login page, design a form, create forums, dynamic and static websites and many more with PHP.

### 4.4.7 JAVASCRIPT

JavaScript (js) is a light-weight object-oriented programming language which is used by several websites for scripting the webpages. It is an interpreted, full-fledged programming language that enables dynamic interactivity on websites when applied to an HTML document. It was introduced in the year 1995 for adding programs to the webpages in the Netscape Navigator browser. Since then, it has been adopted by all other graphical web browsers. With JavaScript, users can build modern web applications to interact directly without reloading the page every time. The traditional website uses js to provide several forms of interactivity and simplicity.

Although, JavaScript has no connectivity with Java programming language. The name was suggested and provided in the times when Java was gaining popularity in the market. In addition to web browsers, databases such as CouchDB and MongoDB uses JavaScript as their scripting and query language

### **4.4.8 MYSQL**

MySQL is currently the most popular database management system software used for managing the relational database. It is open-source database software, which is supported by Oracle Company. It is fast, scalable, and easy to use database management system in comparison with Microsoft SQL Server and Oracle Database. It is commonly used in conjunction with PHP scripts for creating powerful and dynamic server-side or web-based enterprise applications.

It is developed, marketed, and supported by MySQL AB, a Swedish company, and written in C programming language and C++ programming language. The official pronunciation of MySQL is not the My Sequel; it is My Ess Que Ell. However, you can pronounce it in your way. Many small and big companies use MySQL. MySQL supports many Operating Systems like Windows, Linux, MacOS, etc. with C, C++, and Java languages.

MySQL is a Relational Database Management System (RDBMS) software that provides many things, which are as follows:

It allows us to implement database operations on tables, rows, columns, and indexes.

It defines the database relationship in the form of tables (collection of rows and columns), also known as relations.

It provides the Referential Integrity between rows or columns of various tables.

It allows us to updates the table indexes automatically.

It uses many SQL queries and combines useful information from multiple tables for the end-users.

# **MEETINGS**

FIRST MEETING WITH Mr. FIAZ MEMON		
DATE	17/10/2022	
TITLE	TO DISCUSS PROJECT SELECTION	
ATTENDANT	ZIAF SHAH, RAYED SHAH,FARAZ AKBAR,USAMA ALI	
VENUE	OFFICE OF MR.FIAZ MEMON	

SECOND MEETING WITH Mr. FIAZ MEMON		
DATE	22/11/2022	
TITLE	TO DISCUSS ABSTRACT	
ATTENDANT	ZIAF SHAH, RAYED SHAH,FARAZ AKBAR,USAMA ALI	
VENUE	OFFICE OF MR.FIAZ MEMON	

THIRD MEETING WITH Mr. FIAZ MEMON		
DATE	10/12/2022	
TITLE	TO FINALIZE THE PROJECT	
ATTENDANT	ZIAF SHAH, RAYED SHAH,FARAZ AKBAR,USAMA ALI	
VENUE	COMPUTER LAB	

FOURTH MEETING WITH Mr. FIAZ MEMON		
DATE	17/01/2023	
TITLE	TO DISCUSS ABOUT THESIS	
ATTENDANT	ZIAF SHAH, RAYED SHAH,FARAZ AKBAR,USAMA ALI	
VENUE	OFFICE OF MR.FIAZ MEMON	