

### ACKNOWLEDGEMENTS

While the report for my project work is ready, I feel it is my bounded duty to offer my sincere thanks to all those who have helped and Guided in this regard.

Action is very necessary to convert our dreams in reality. My dream was to develop the project. To make a successful and useful project, One need help, understanding, co-ordination from all those who are directly or indirectly involved in this.

Many people have contributed to make this project a reality. I would like to express my gratitude to our **Head of Department** “Prof. Brijesh Shah” for this guidance throughout the project.

While submitting the project report it is my duty to offer my sincere thanks to those who have assisted me in preparing this project report work. I would like to express my gratitude to Prof. jigisha ganatra for his guidance throughout the project.

She helped me in the selection of this topic and guides me to the final completion of my project by viewing the manuscripts of the chapters and giving valuable suggestion.

Before i describe in brief about my project I would like to add a few heartfelt words for those people who had given their time and knowledge to developing this project.

Last but not the least; I am thankful to all my collage faculties and friends for their kind co-operation.

**A Special thanks from:**

Paras Makwana

# E-commerce web application

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## **PREFACE**

To prepare a project as well as project report as a separate subject in 5<sup>th</sup> semester BCA project is to be prepared on a particular subject after study it well.

There is a wide different between theoretical and practical knowledge and to understand that difference for the use of knowledge. Project report is new and interesting experience for me. I say it is difficult from particular aspects. We came to know about the theoretical ideas of the matter and its dealing. Project report helps to build confidence in our life.

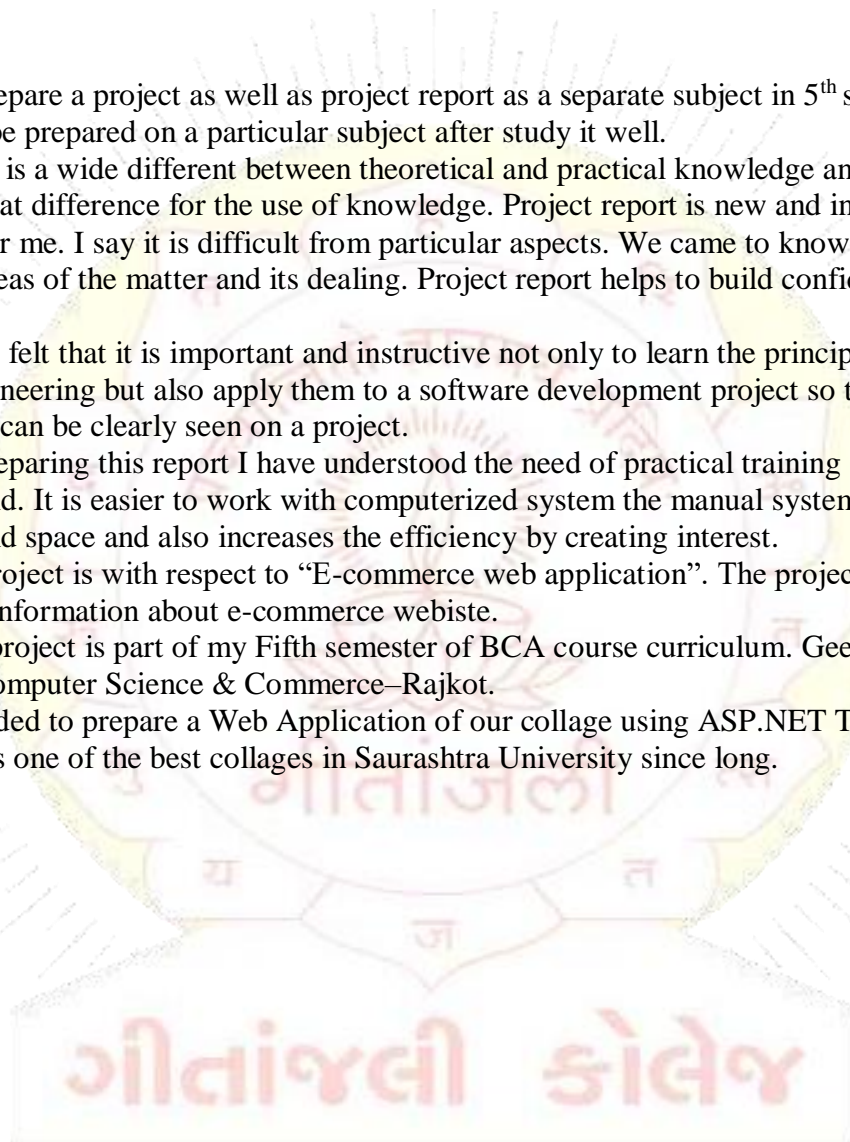
It was felt that it is important and instructive not only to learn the principles of software engineering but also apply them to a software development project so that all aspects development can be clearly seen on a project.

By preparing this report I have understood the need of practical training in the education field. It is easier to work with computerized system the manual system. It saves time,effort and space and also increases the efficiency by creating interest.

My project is with respect to “E-commerce web application”. The project report contains the information about e-commerce webiste.

This project is part of my Fifth semester of BCA course curriculum. Geetanjali Collage of Computer Science & Commerce–Rajkot.

I decided to prepare a Web Application of our collage using ASP.NET Technology. Our collage is one of the best collages in Saurashtra University since long.



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## **ABSTRACT**

Title: Design and Implementation of an E-commerce Platform

The rapid growth of the digital economy has revolutionized the way businesses operate, with e-commerce emerging as a cornerstone of modern commerce. This project presents the design and implementation of an e-commerce platform, developed as part of the BCA Semester 5 curriculum at saurashtra university.

The primary objective of this project was to create a comprehensive and user-friendly e-commerce platform that offers a seamless shopping experience for both customers and administrators. The platform is built using industry-standard technologies and best practices, ensuring scalability, security, and performance.

Key features of the e-commerce platform include:

1. User Registration and Authentication: Customers can create accounts, sign in securely, and manage their profiles.
2. Product Catalog: An extensive catalog of products with detailed descriptions, images, and pricing.
3. Shopping Cart and Checkout: Users can add products to their shopping carts, review their orders, and complete the purchase securely.
4. Order Management: Administrators can manage orders, track shipments, and update order statuses.
5. Payment Integration: Integration with popular payment gateways for secure transactions.
6. Admin Dashboard: An intuitive dashboard for administrators to manage products, users, and orders efficiently.

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### **PROJECT SUMMERY**

- I have created this project.
- My project definition is Submersible Electomic e commerce.
- My Project start on 1<sup>st</sup> August 2024 and over on 20<sup>th</sup> September 2023.
- My project Guide is Prof. Jigisha ganatra.

#### ➤ Features:-

- User Registration and Authentication.
- Product Catalog.
- Shopping Cart and Checkout.

#### ➤ This Project Goal:-

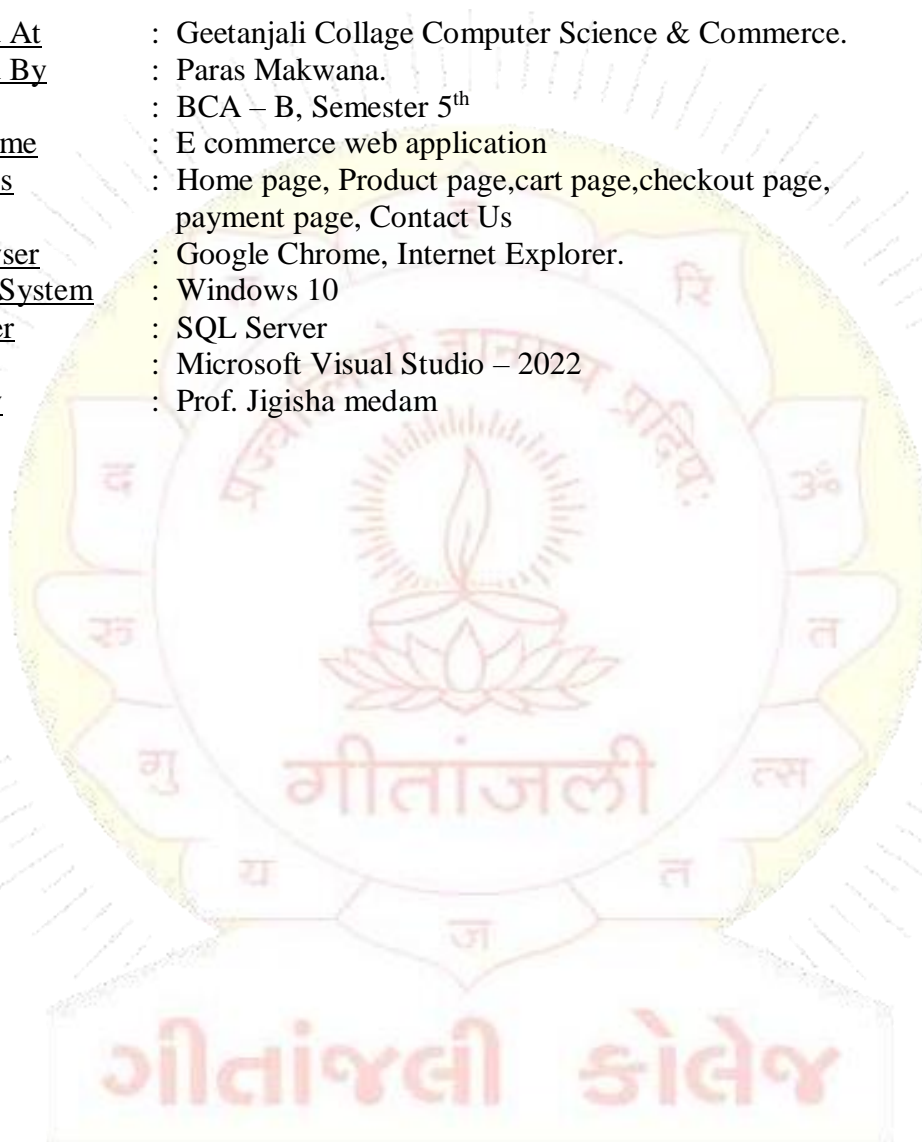
- The goal of this project is to create a user-friendly and secure e-commerce platform that facilitates seamless online shopping and efficient management for both customers and administrators.

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### PROJECT PROFILE

<u>Developed At</u>	: Geetanjali Collage Computer Science & Commerce.
<u>Developed By</u>	: Paras Makwana.
<u>Division</u>	: BCA – B, Semester 5 <sup>th</sup>
<u>Project Name</u>	: E commerce web application
<u>Main Pages</u>	: Home page, Product page, cart page, checkout page, payment page, Contact Us
<u>Web Browser</u>	: Google Chrome, Internet Explorer.
<u>Operating System</u>	: Windows 10
<u>Web Server</u>	: SQL Server
<u>Editor</u>	: Microsoft Visual Studio – 2022
<u>Guided By</u>	: Prof. Jigisha medam





### **SYSTEM REQUIREMENT**

#### ➤ **Software**

- Any windows operating system windows 7 to windows 11
- Web Browser (Google Chrome, Internet Explorer, etc...)
- Front-End -> HTML, CSS, Tailwind css, C#, ASP.NET
- Back-End -> SQL Server 2022
- Microsoft Visual Studio – 2022 Editor



#### ➤ **Hardware**

- Processor : Intel core i3 and after all
- RAM 4 GB or Higher
- HDD with 256GB or Higher
- Monitor
- Keyboard

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### Platform Specification

-  Platform is provide the base of develop project in Submersible Pump Management System i used to below platform.
-  ASP.NET, HTML, SQL Server and operating system.

#### ➤ ASP.NET:-

- ✓ ASP.NET or Active Server Pages .NET, ships as part of the .NET framework and is a technology that allows dynamic creation of documents on web server when they are requested via HTTP.
- ✓ ASP.NET provides a unified Web development model that includes the services necessary for you to build enterprise class web applications with a minimum of coding.
- ✓ ASP.NET is part of the .NET framework and enables you to take full advantages of the features of the common language runtime, such as type safety, inheritance, Language interoperability and versioning.
- ✓ You can code your applications in any language compatible with the common language runtime (CLR), including Microsoft Visual Basic, C#, Jscript.NET and J#.

#### ➤ HTML:-

- ✓ Hyper Text Mark-up Language (HTML) is a standard language. For creating web pages.
- ✓ It provides number of command that can be used to place and format text, picture and sound on web pages.
- ✓ The linked to other document on the internet.
- ✓ Hyper Text Mark-up Language (HTML) is the computer coding language used to convert ordinary text into active text for

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- ✓ display and used on the web and also to give plain, unstructured text the sort of structure human beings rely on to read it.

### ➤ Microsoft SQL Server :-

- ✓ Microsoft SQL server, often referred to simply as SQL Server, is a Relational Database Management System (RDBMS) developed by Microsoft.
- ✓ It is powerful and widely used database platform for storing, retrieving and managing data.
- ✓ SQL Server is design to work with large datasets and provides various tools and features for data storage, manipulations and analysis.
- ✓ This is the core components responsible for storing, processing and securing data.
- ✓ It supports SQL (Structured Query Language) for managing and querying data.
- ✓ SQL Server Management Studio (SSMS) is a graphical tool used to manage and administer SQL Server databases.
- ✓ IT provides user-friendly interface for database development, maintenance and monitoring.
- ✓ Microsoft offers a cloud-based version of SQL Server called Azure SQL Server database.
- ✓ SQL Server provides robust security features, including authentication, authorization, encryption and auditing, to protect sensitive data.



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### SOFTWARE DEVELOPMENT LIFE CYCLE(SDLC)

#### Software Development Life Cycle Steps :

Here, this web application project was developed based on SDLC(Software Development Life Cycle).

SDLC has a different step of development of desktop project or any type of application.

The project develops in the 3-tier architecture of the C#.Net framework.

Following the SDLC steps are used in the application Development:-

- System Requirement Analysis
- Feasibility Study
- System Design
- Testing
- Implementation
- Maintenance

#### **System Requirement Analysis :**

In this phase, the development team visits the need for possible software requirements in micro-depth to develop the system.

The basic clearance of the application they informed by the system requirement analysis investigation team. Understanding fully what a project will deliver is critical

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to its success.

### **Feasibility Study :**

Feasibility means the analysis team's report first study and that after the decision to create this application.

This team internally shows the company's possibility of developing this type of application. Tools and Technology, Economically, Government Rules & Regulations are considered.

### **System Design :**

This phase works on the creations of the first pre-model of the whole system.

In terms of the end user/server technology, the number of tiers needed for the package architecture, the database design, the data structure design, etc., are all defined in this phase.

### **Implementation :**

Implementation was the phase where the actual coding and development took place. Programmers and developers write the software code based on the design specifications. This phase included rigorous testing to identify and fix any coding errors or bugs.

### **Testing :**

The testing phase involved systematically evaluating the software to ensure it met quality standards. Different testing levels, such as unit testing, integration testing,

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and user acceptance testing, were conducted to validate the software's functionality, performance, and reliability. Defects were identified and addressed during this phase.

### **Maintenance :**

The maintenance phase represented the ongoing support and enhancement of the software post-deployment. It included activities such as bug fixes, updates, security patches and the addition of new features.

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### Test Cases

Case Name	Case Description	Actual Output	Test Result
Login	A window with a two textbox email and password.	Write correct email and password and login successfully.	Pass
Home Screen	Display all products of our e commerce website.	Display all products of our e commerce website. Title,price,image etc	Pass
Product Screen	Display product Information (name, image, price,category etc)	Display product Information (name, image,price,add to cart button,buy now button)	Pass
Add Product Screen	Display add product information form (name, image, price, category,description)	Display add product information form (name, image, price, category,description)	Pass
Edit Product Screen	Display edit product information form (name, image, price, category,description)	Display edit product information form (name, image, price, category,description)	Pass
Checkout Screen	Display list of products available for sale, including details like product name, selling price	Display list of products available for sale, including details like product name, selling price	Pass



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### DATA DICTIONARY

➤ **User table :**

Name	Data Type	Allow Nulls
Id	Int	Not Null
Name	varchar(50)	Not Null
Email	varchar(50)	Not Null
Password	Varchar(50)	Not Null

**Product table :**

Name	Data Type	Allow Nulls
Id	int	Not Null
Title	varchar(50)	Not Null
Description	archar(50)	Not Null
category	Varchar(50)	Not Null
price	int	Not Null
image	Varchar(50)	Not Null



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### ➤ Order Table :

Name	Data Type	Allow Nulls
Id	int	Not Null
userID	int	Not Null
order_date	varchar(50)	Not Null
billing_adress	varchar(50)	Not Null
order_status	Varchar(10)	Not Null
total_amount	Int	Not Null

### feedback table:

Name	Data Type	Allow Nulls
Id	Int	Not Null
name	nvarchar(50)	Not Null
Email	narchar(50)	Not Null
message	nvarchar(50)	Not Null

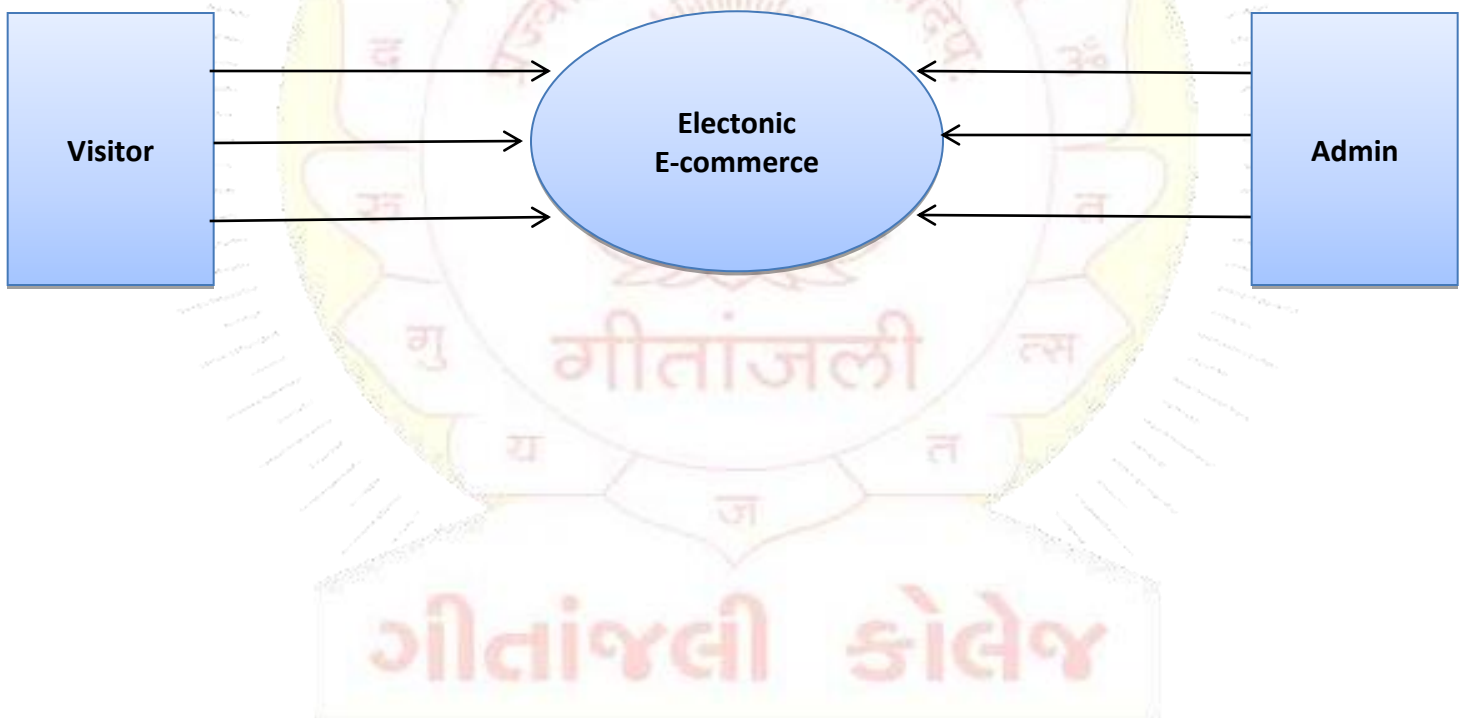
## E-commerce web application

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### SYSTEM DESIGN TOOLS

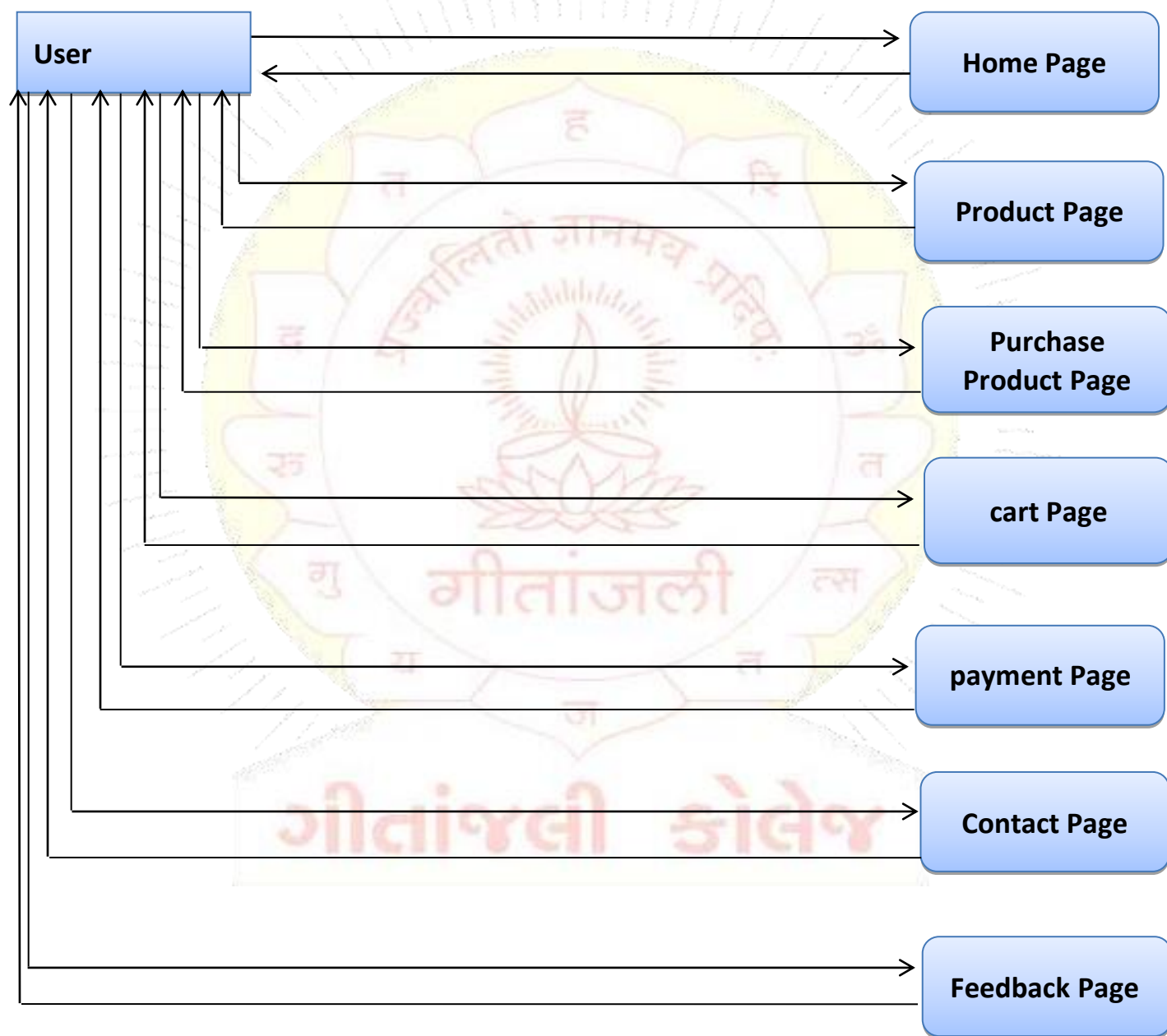
#### DFD (Data Flow Diagram) :

DFD 0 Level Diagram



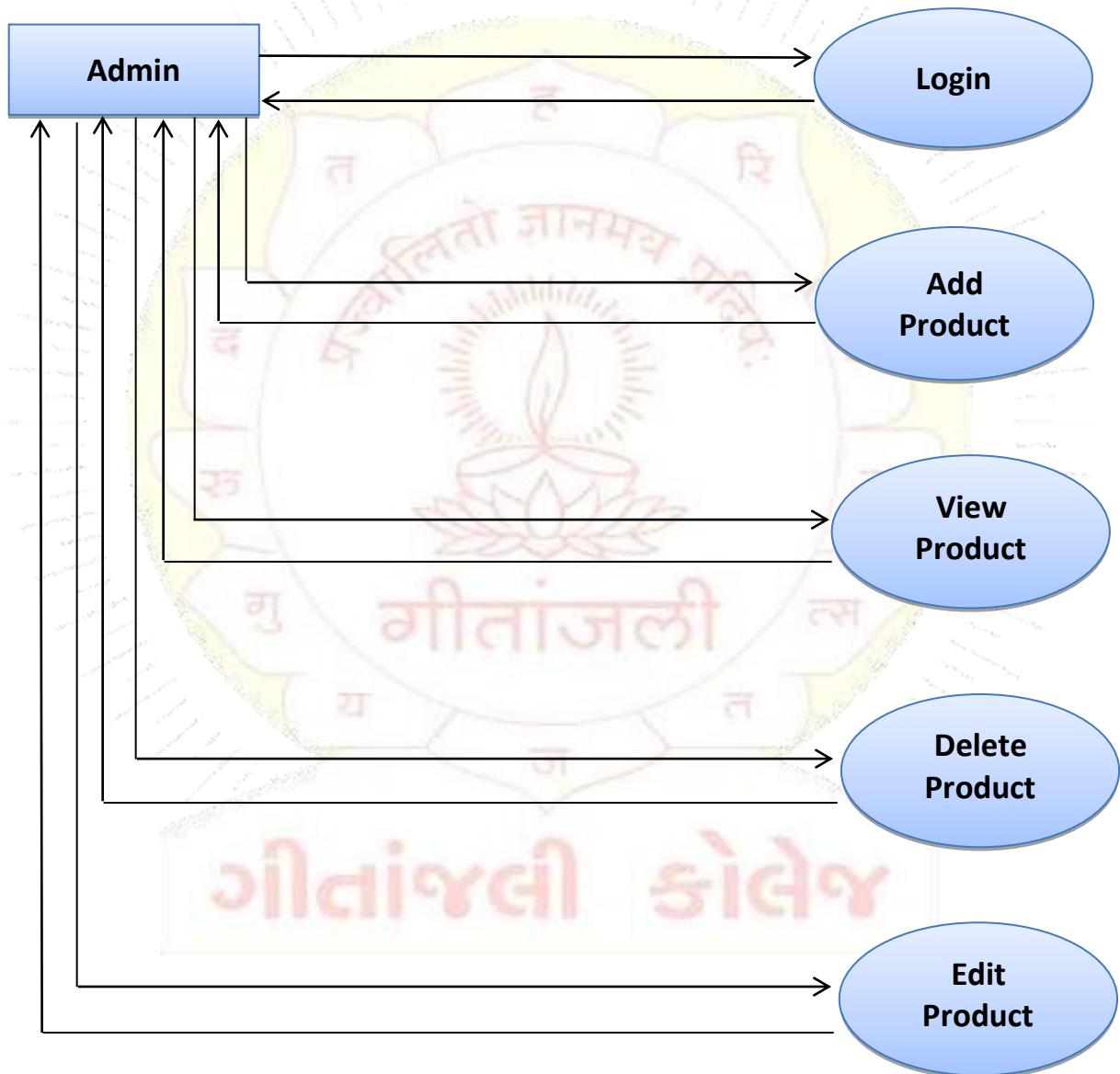
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DFD 0 Level Diagram



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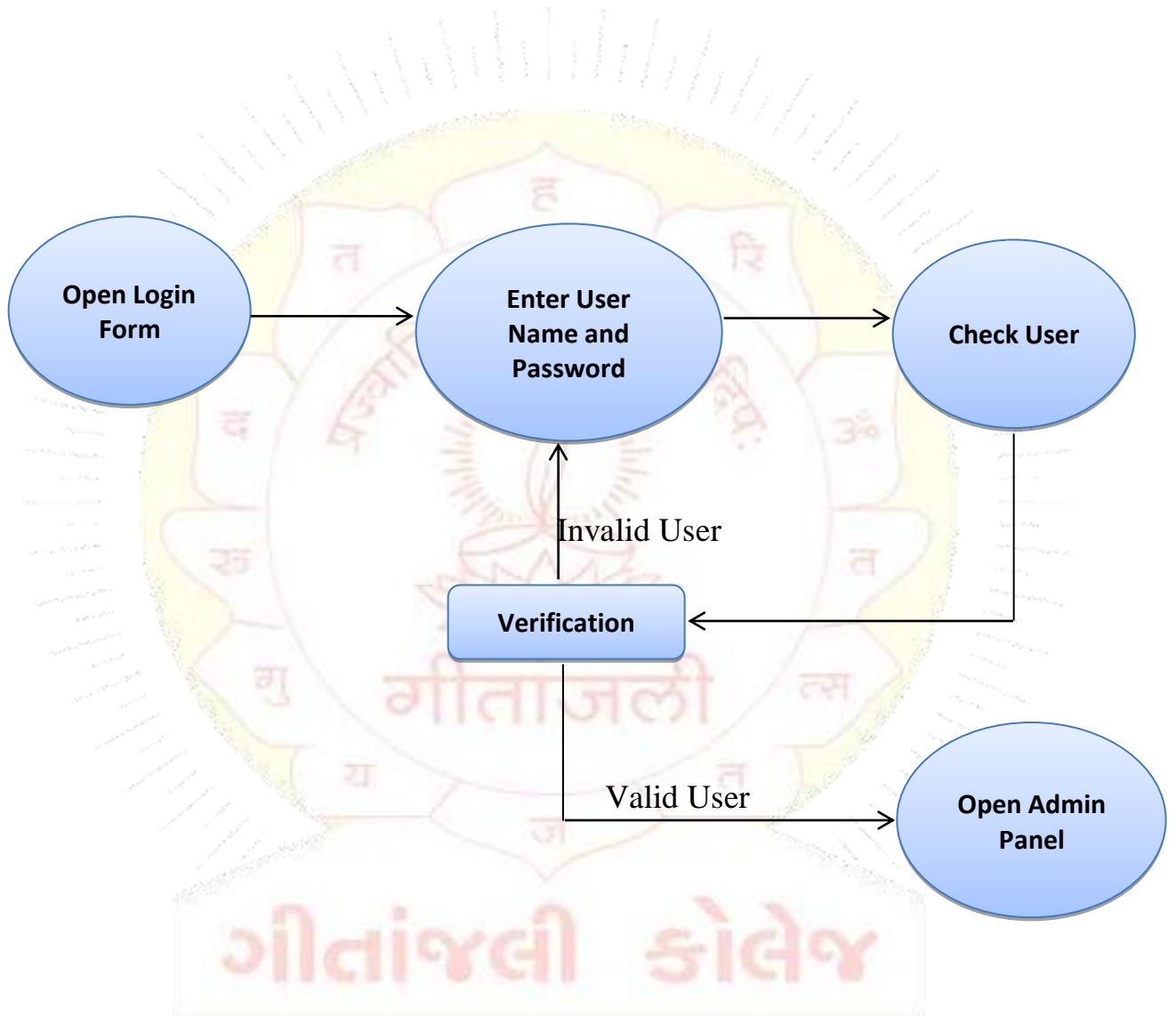
DFD 1 Level Diagram



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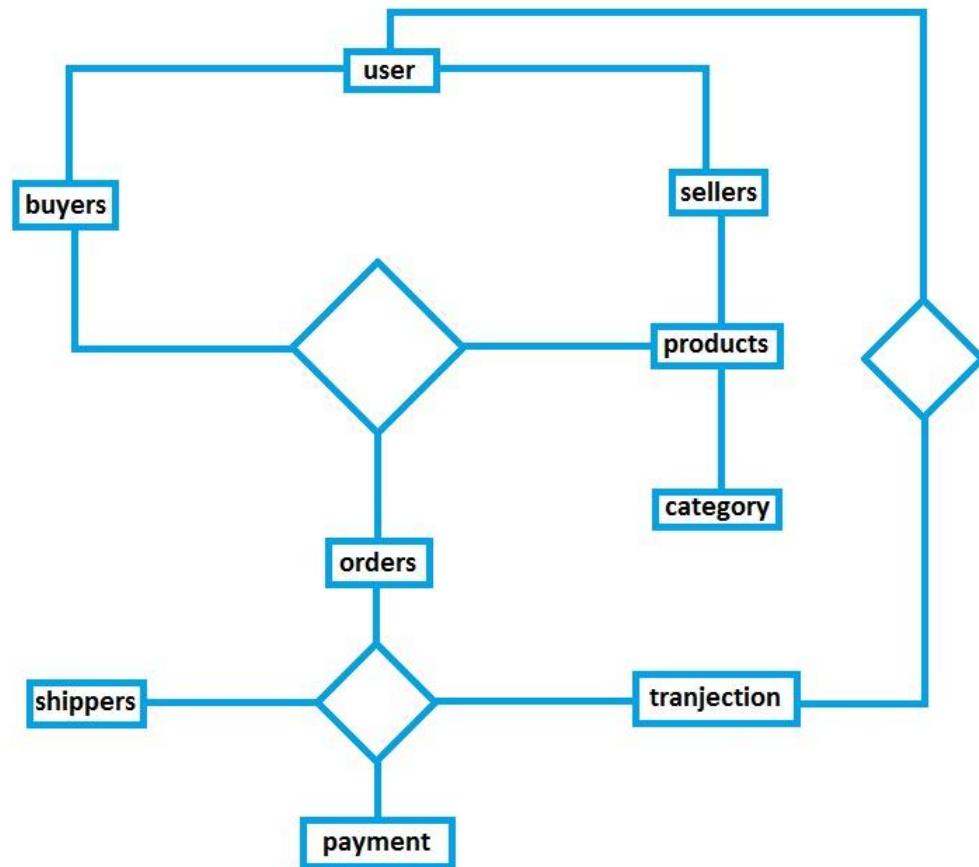
Login DFD



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### ERD (Entity Relation Diagram) :-



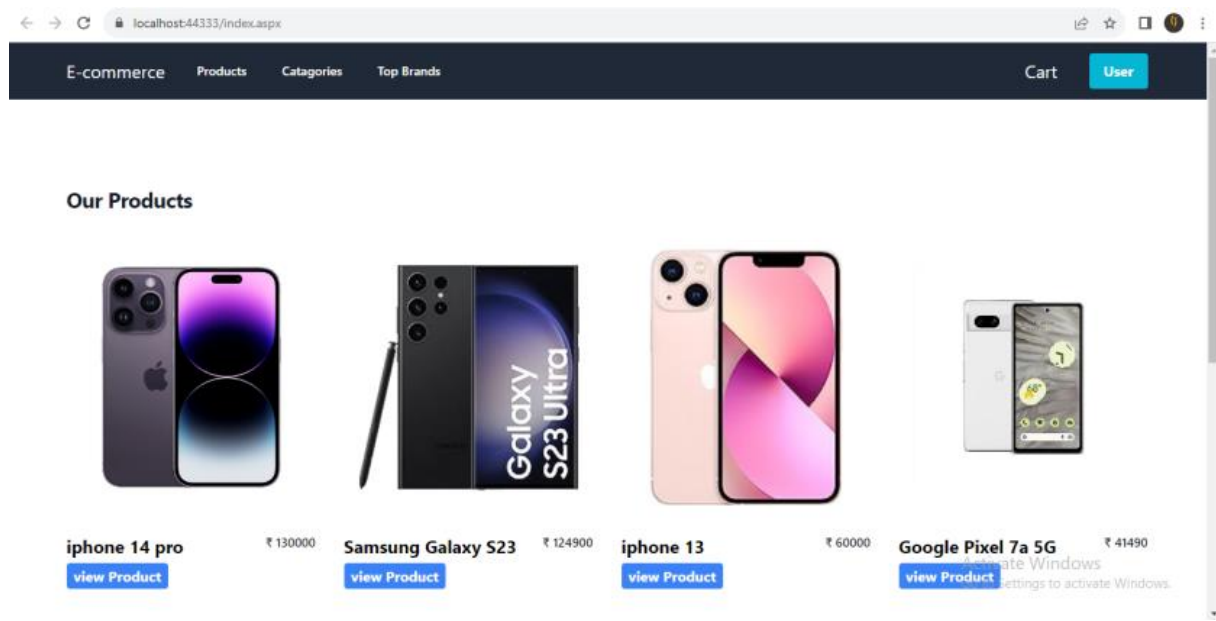


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## LAYOUT DESIGN

**Page Name :-** Home Page

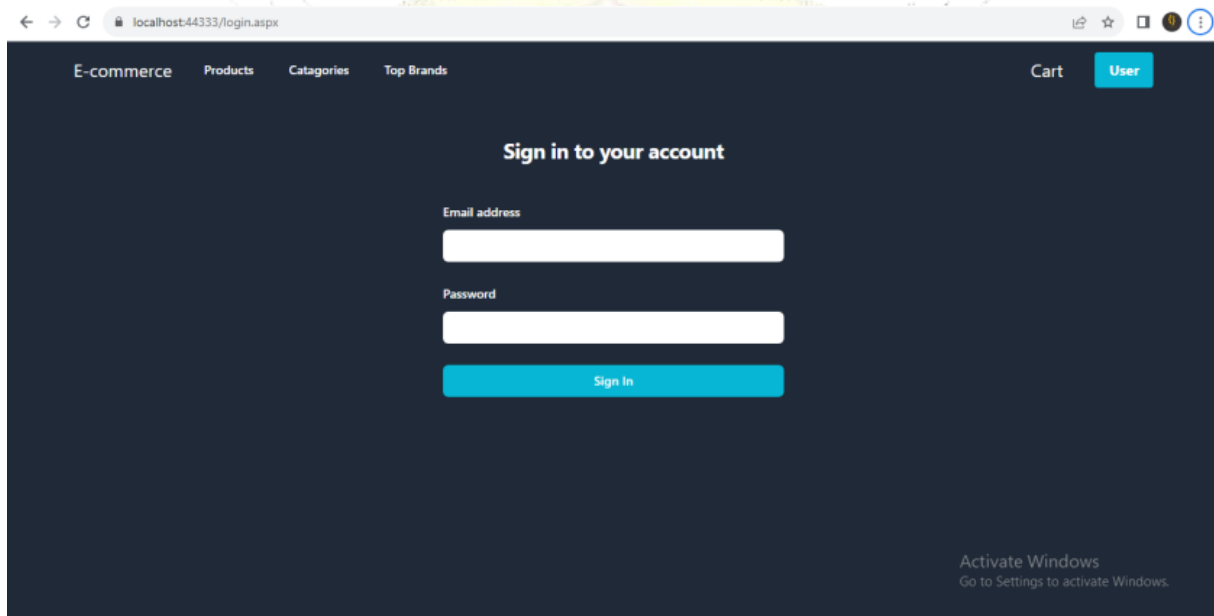
**Description :-** The screenshot of my website's homepage showcases a curated selection of cutting-edge electronic products, offering a glimpse into a world of innovation and technology at your fingertips.



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**Page Name :-** Login Page

**Description :-** The login page screenshot highlights a secure gateway to access our platform, where users can input their email and password for seamless entry into our digital ecosystem.

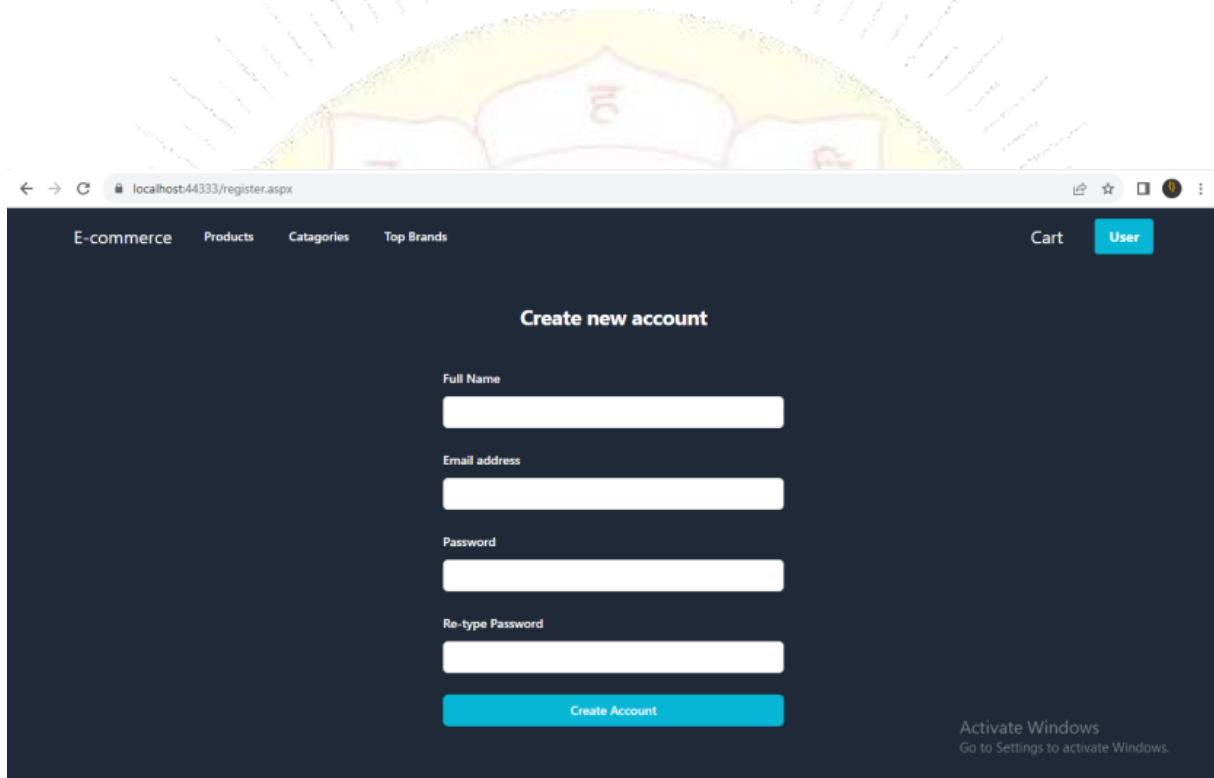


The screenshot shows a web browser window with the address bar displaying 'localhost:44333/login.aspx'. The page has a dark blue background. At the top, there is a navigation bar with links: 'E-commerce', 'Products', 'Categories', and 'Top Brands'. On the right side of the navigation bar, there are links for 'Cart' and 'User'. The main content area is titled 'Sign in to your account'. Below the title, there are two input fields: 'Email address' and 'Password'. Below these fields is a blue button labeled 'Sign In'. In the bottom right corner, there is a message: 'Activate Windows Go to Settings to activate Windows.'

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**Page Name :-** Register Page

**Description :-** the registration page screenshot captures the initial steps to join our platform, where users are prompted to provide their name, email, and password, marking the beginning of their journey into our digital community.

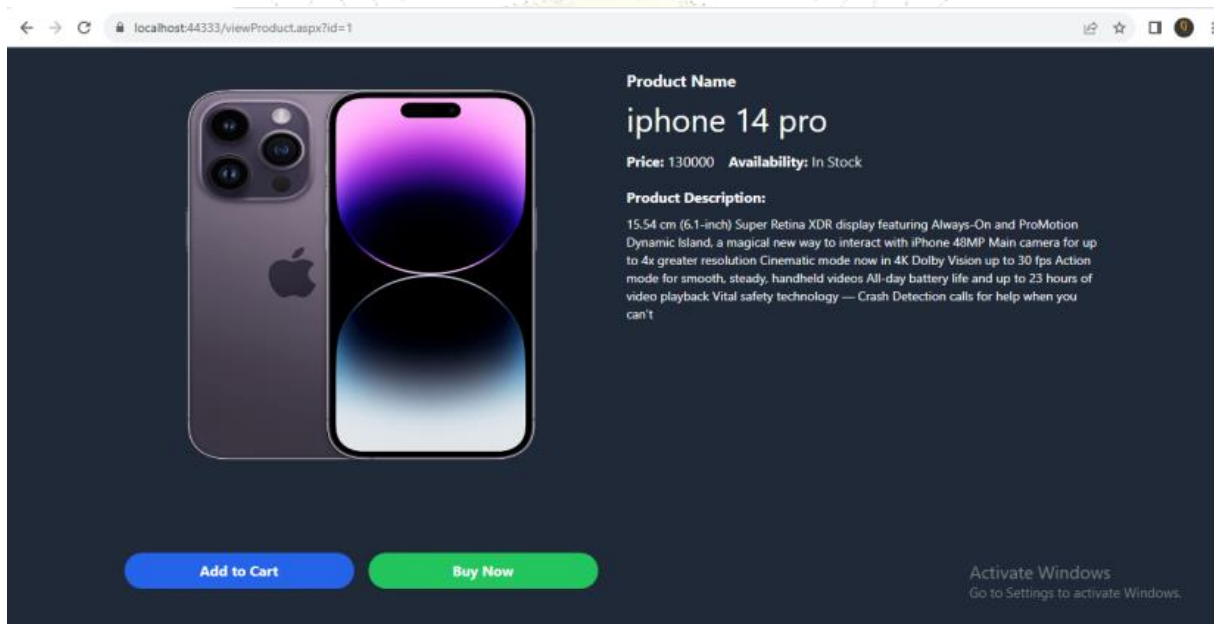


The screenshot displays a web browser window with the address bar showing 'localhost:44333/register.aspx'. The page has a dark blue background. At the top, there is a navigation bar with links: 'E-commerce', 'Products', 'Categories', 'Top Brands', 'Cart', and a 'User' button. The main heading is 'Create new account'. Below this, there are four input fields: 'Full Name', 'Email address', 'Password', and 'Re-type Password'. A blue 'Create Account' button is positioned below the input fields. In the bottom right corner, there is a message: 'Activate Windows Go to Settings to activate Windows.'

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**Page Name :-** Product Page

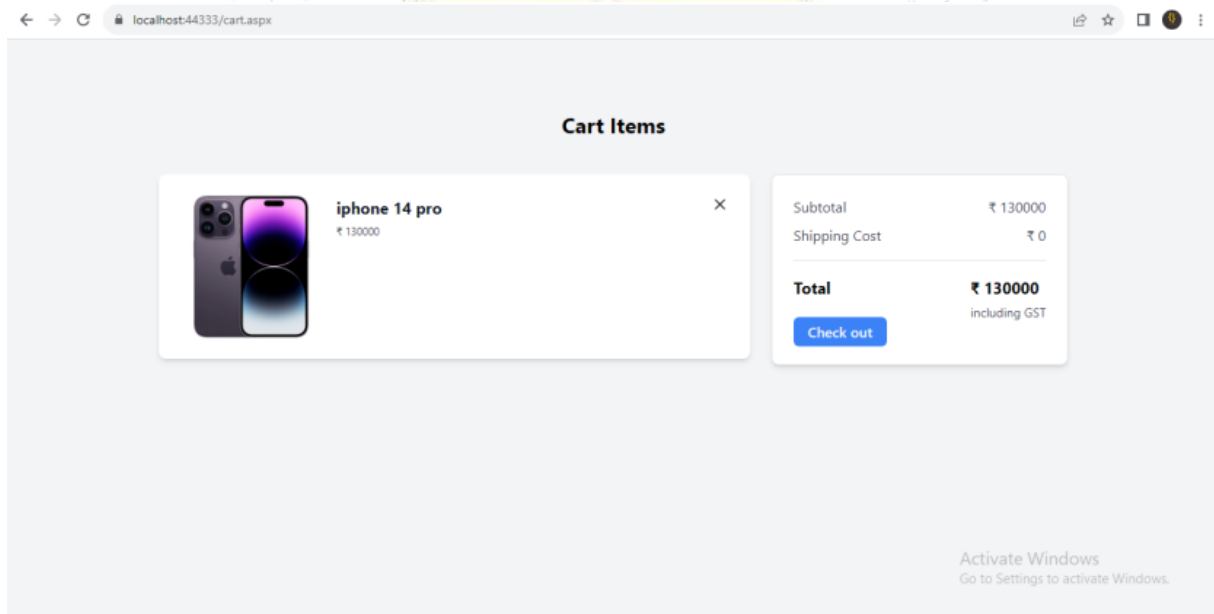
**Description :-** This product page screenshot combines price, description, image, and category for a seamless shopping experience.



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**Page Name :-** Checkout Page

**Description :-** The product list with associated costs and a prominent checkout button in the screenshot simplifies the shopping experience.



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**Page Name :-** Payment Page

**Description :-** The payment page screenshot showcases the Stripe interface, where users confidently input their payment details, leveraging the secure and widely trusted Stripe platform for a seamless and safe online transaction experience.

The screenshot displays a Stripe payment interface for an e-commerce application. The browser address bar shows the URL: `checkout.stripe.com/c/pay/cs_test_a12zpl7iXlbdzV9ganE7zXU61zU98L9cgjT7zJ3co2kk3wxUN2tOufgly#fidkdWxOYHwnPyd1blpxYHZxWjA0S3dnNUJWVGZgTkdeamxZ...`. The page is titled "E COMMERCE TEST MODE" and shows an invoice for ₹10.00. The payment method is "Pay with card". The contact information includes an email address and a phone number. The card information section shows a card number, expiration date (MM / YY), and CVC. The name on the card is also displayed. The billing address is set to Germany. A "Pay" button is visible at the bottom right. The footer includes "Powered by stripe" and "Terms Privacy". A watermark for "गीतांजली कोलेज" is visible in the background.

← → ↻ `checkout.stripe.com/c/pay/cs_test_a12zpl7iXlbdzV9ganE7zXU61zU98L9cgjT7zJ3co2kk3wxUN2tOufgly#fidkdWxOYHwnPyd1blpxYHZxWjA0S3dnNUJWVGZgTkdeamxZ...` ☆ □ 🔍

**E COMMERCE TEST MODE**

e commerce  
**₹10.00**  
your e commerce invoice




**Pay with card**


Contact information

email@example.com

01512 3456789

Card information

1234 1234 1234 1234   

MM / YY CVC 

Name on card

Billing address

Germany

Address

Enter address manually

Pay

Activate Windows  
Go to Settings to activate Windows.

Powered by stripe | Terms Privacy

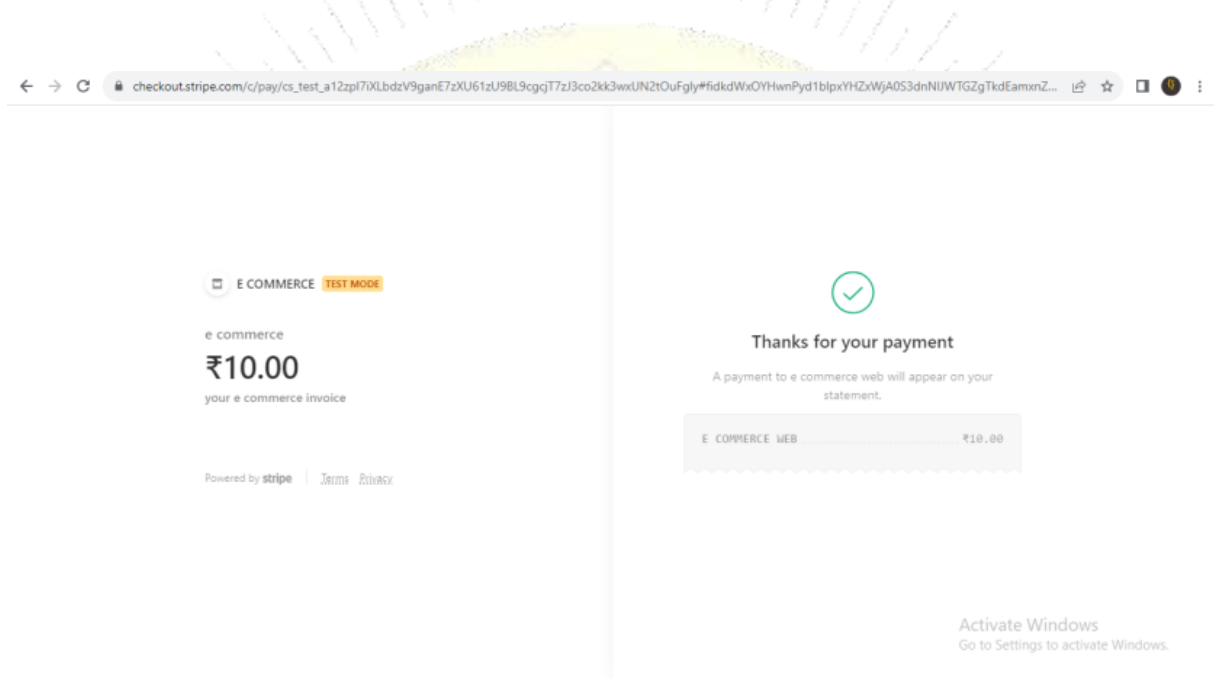
य ज त  
गीतांजली कोलेज



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**Page Name :-** Payment Confirmation Page

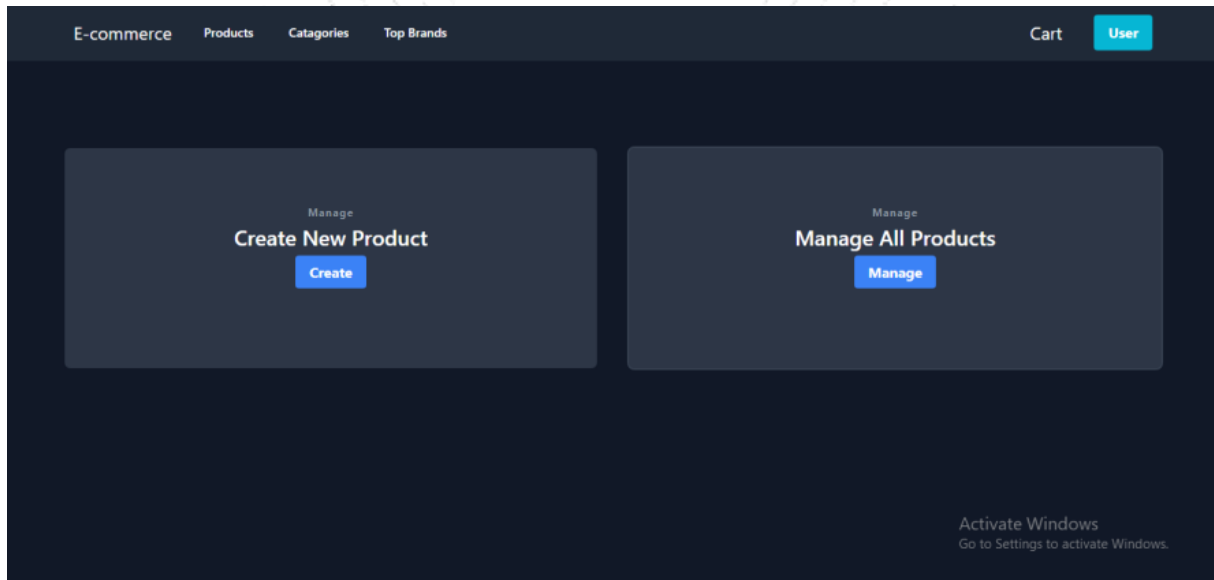
**Description :-** The Payment Confirmation Page screenshot serves as a reassuring endpoint in the purchasing journey, providing users with a visual confirmation of their successful payment, ensuring peace of mind as they finalize their transaction.



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**Page Name :-** Admin Page

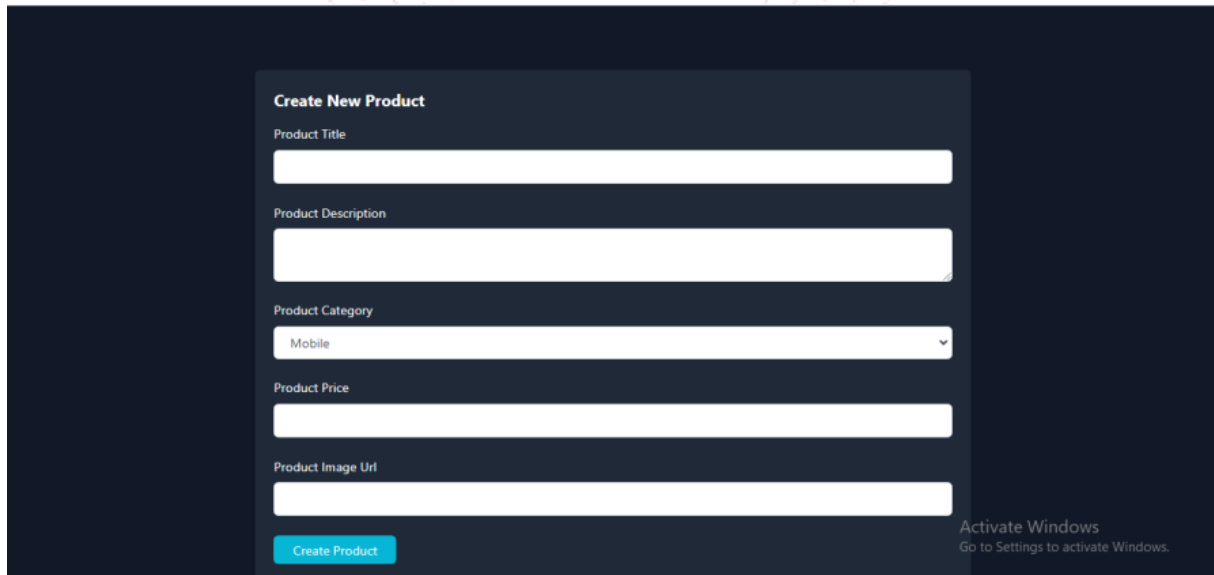
**Description :-** The admin page screenshot offers a behind-the-scenes look at the control center of our website, empowering administrators with tools and features to manage



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**Page Name :-** Create Product Page

**Description :-** The "Create Product" page screenshot illustrates the user-friendly interface where sellers or administrators can effortlessly add new products to our platform



**Create New Product**

Product Title

Product Description

Product Category

Mobile

Product Price

Product Image Url

Create Product

Activate Windows  
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**Page Name :-** Manage Product Page

**Description :-** The "Manage Products" page screenshot serves as the control hub for overseeing and maintaining our product catalog.



PRODUCT NAME	CATEGORY	PRICE	ACTION
iphone 14 pro	Mobile	130000	<a href="#">Edit</a> <a href="#">Delete</a>
Samsung Galaxy S23	Mobile	124900	<a href="#">Edit</a> <a href="#">Delete</a>
iphone 13	Mobile	60000	<a href="#">Edit</a> <a href="#">Delete</a>
Google Pixel 7a 5G	Mobile	41490	<a href="#">Edit</a> <a href="#">Delete</a>
Apple 2023 MacBook Air	Mobile	126990	<a href="#">Edit</a> <a href="#">Delete</a>
Samsung gaaxy book 3 pro	Laptop	165990	<a href="#">Edit</a> <a href="#">Delete</a>
HP ZBook Studio	Laptop	233990	<a href="#">Edit</a> <a href="#">Delete</a>
MSI Titan GT77 HX	Laptop	580990	<a href="#">Edit</a> <a href="#">Delete</a>

Activate Windows  
Go to Settings to activate Windows.



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### **FUTURE REQUIREMENTS OF PROJECT**

1. **Mobile Application:** Develop a dedicated mobile app for iOS and Android platforms to reach a wider audience and offer a seamless mobile shopping experience.
2. **Personalization:** Implement machine learning algorithms to personalize product recommendations, email marketing, and content based on user behavior and preferences.
3. **Multi-language Support:** Expand the project's reach by adding support for multiple languages and currencies to cater to international customers.
4. **Advanced Search:** Enhance the search functionality with features like auto-suggestions, filters, and predictive search to help users find products quickly and easily.
5. **User Reviews and Ratings:** Allow customers to leave reviews and ratings for products, fostering trust and providing valuable feedback for both buyers and sellers.
6. **Inventory Management:** Integrate a robust inventory management system that provides real-time updates on product availability, restocking alerts, and back-order handling.
7. **Social Media Integration:** Enable social media login, sharing, and integration to leverage social platforms for marketing and user engagement.
8. **Subscription Models:** Implement subscription-based services or loyalty programs to retain customers and encourage repeat purchases.
9. **Multiple Payment Gateways:** Add support for various payment gateways to accommodate different customer preferences and global payment methods.
10. **Advanced Analytics:** Integrate analytics tools to gain insights into user behavior, sales trends, and site performance, helping in data-driven decision-making.

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- 11.Enhanced Security: Continuously update security measures to protect user data and payment information, and comply with evolving cybersecurity regulations.
- 12.Vendor Portal: If your platform involves multiple sellers, develop a vendor portal with features for them to manage their product listings, orders, and sales reports.
- 13.Chatbots and AI: Implement AI-driven chatbots for customer support, order tracking, and general inquiries, providing 24/7 assistance.
- 14.Shipping and Logistics Integration: Partner with shipping carriers and integrate their APIs to provide accurate shipping rates, real-time tracking, and delivery options.
- 15.Content Management: Invest in a robust content management system (CMS) to easily update and manage website content, including blogs, articles, and landing pages.
- 16.Performance Optimization: Continuously optimize the website or app for speed and performance, ensuring fast load times and a smooth user experience.
- 17.Regulatory Compliance: Stay up-to-date with e-commerce regulations and data protection laws in different regions and ensure compliance.
- 18.Customer Support and Feedback System: Implement a comprehensive customer support system with options for live chat, email support, and a feedback mechanism to gather customer suggestions and concerns.
- 19.AI Fraud Detection: Employ AI-based fraud detection systems to prevent fraudulent transactions and protect both buyers and sellers.
- 20.Expansion to New Markets: Plan for international expansion and adapt the platform to local regulations, currencies, and cultural preferences as needed.



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### **LIMITATION OF PROJECT**

1. **Limited Resources:** Constraints in terms of budget, manpower, and technology can limit the scope and scale of the project.
2. **Security Risks:** E-commerce platforms are prime targets for cyberattacks and data breaches. Ensuring robust security measures is crucial but can be challenging.
3. **Scalability:** Handling rapid growth in terms of website traffic, products, and user data can be challenging without proper infrastructure and planning.
4. **Maintenance and Updates:** E-commerce websites require regular maintenance, updates, and bug fixes. Neglecting this can lead to performance issues and security vulnerabilities.
5. **Competition:** The e-commerce market is highly competitive, and gaining a significant market share can be difficult, especially for new entrants.
6. **Payment Processing Challenges:** Dealing with payment processing, refunds, and chargebacks can be complex and time-consuming.
7. **Logistics and Shipping:** Coordinating shipping and logistics, especially for international orders, can be challenging and costly.
8. **Customer Trust:** Building and maintaining trust with customers is

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essential. Any negative experiences, such as security breaches or poor customer service, can be damaging.

9. Technical Issues: Technical glitches, downtime, and website performance issues can result in lost sales and frustrated customers.
10. Regulatory Compliance: Keeping up with evolving e-commerce regulations and data protection laws in different regions can be complex and costly.
11. User Experience: Ensuring a seamless and user-friendly experience across various devices and platforms can be challenging.
12. Inventory Management: Managing inventory, especially for businesses with a large number of products, can be complex and require efficient systems.
13. Marketing and Customer Acquisition: Attracting and retaining customers in a crowded market requires effective marketing strategies and can be costly.
14. Return and Refund Policies: Managing returns and refunds while maintaining customer satisfaction can be a challenge.
15. Payment Gateway Reliability: Reliance on third-party payment gateways can introduce risks if they experience downtime or issues.

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16. Mobile Responsiveness: Ensuring that the platform is responsive and functions well on various mobile devices can be a design and development challenge.
17. Cultural and Regional Differences: Adapting the platform to different cultures, languages, and regional preferences can be complex.
18. Product Quality Control: Maintaining product quality when working with multiple vendors or sellers can be challenging.
19. Data Privacy: Ensuring the privacy of user data and complying with data protection laws is an ongoing concern.
20. Customer Support: Providing excellent customer support can be resource-intensive, especially as the customer base grows.
21. These limitations can be addressed through careful planning, investment in technology and security, ongoing monitoring, and adaptation to changing market conditions. It's important to be aware of these challenges and have strategies in place to mitigate their impact on your e-commerce project.

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### **BIBLIOGRAPHY**

1. [Tailwind css](#)
2. [Google](#)
3. [YouTube](#)