

Design and Implementation of E-Commerce Site for Online Shopping

1



Graduate Project

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3

ABSTRACT

In today's fast-changing business environment, it's extremely important to be able to respond to client needs in the most effective and timely manner. If your customers wish to see your business online and have instant access to your products or services.

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 MERN, programming language (such as javascript) and relational databases. 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.

ACKNOWLEDGEMENTS

In completing this graduate project I have been fortunate to have help, support and encouragement from many people. I would like to acknowledge them for their cooperation.

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TABLE OF CONTENTS

ABSTRACT.....	
ACKNOWLEDGEMENT	
LIST OF FIGURES.....	
1.0 INTRODUCTION.....	
 OVERALL DESCRIPTION.....	
 DESCRIPTION.....	
 USING THE CODE.....	
 MASTER PAGE DETAILS.....	
 WEB PAGES DETAILS.....	
 PROJECT DETAILS.....	
 SYSTEM REQUIREMENT	
 USE-CASE DIAGRAM.....	
 ONLINE SHOPPING APPLICATION.....	
 HOME PAGE	
 PRODUCT	
 ORDER US PAGE	
 CONTACT US PAGE	
 ABOUT US PAGE	
 PRODUCTS DETAILS.....	
 RESTAURANT WEBSITE.....	
 DANCE WEBSITE.....	
 SUDOKU SOLVER.....	
 PORTFOLIO WEBSITE.....	
 MINI PRODUCT SELLING WEBSITE.....	
 CHAT APPLICATION.....	
 INSTAGRAM CRAWLER.....	
 DECISION REVIEW SYSTEM.....	
CONCLUSION.....	19
REFERENCE.....	21

Design and Implementation of E-Commerce Site for Online Shopping

7

1.0 INTRODUCTION:

E-commerce is fast gaining ground as an accepted and used business paradigm. More and more business houses are implementing web sites providing functionality for performing commercial transactions over the web.

The objective of this project is to develop a general purpose e-commerce store where product like software products can be bought from the comfort of home through the Internet. However user can take the product and can modify according to the need

An online store is a virtual store on the Internet where customers can browse the catalog and select products of interest. At checkout time, the items in the shopping cart will be presented as an order. At that time, more information will be needed to complete the transaction. Usually, the customer will be asked to fill or select a billing address, a shipping address, a shipping option, and payment information such as credit card number. An e-mail notification is sent to the customer as soon as the order is placed.

2.0 OVERALL DESCRIPTION:

2.1 Description:

- Any member can register and view available products.
- Only registered member can purchase multiple products regardless of quantity.
- ContactUs page is available to contact Admin for queries.
- There are three roles available: Visitor, User and Admin.
 - Visitor can view available products.
 - User can view and purchase products.
 - An Admin has some extra privilege including all privilege of visitor and user.
 - ✓ Admin can add products, edit product information and add/remove product.
 - ✓ Admin can add user, edit user information and can remove user.
 - ✓ Admin can ship order to user based on order placed by sending confirmation mail.

2.2 Using the code:

1. Attach the database in your "MONGODB".
2. Run the application .
3. Locate the database.

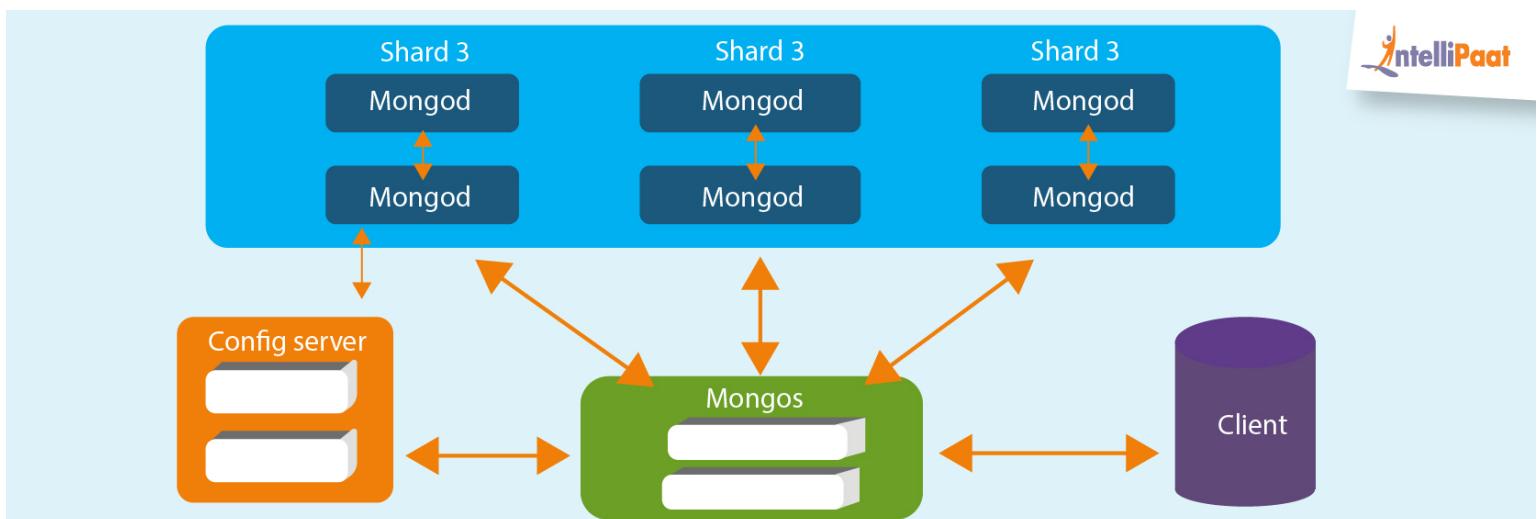
2.3 MasterPage details:

- OnlineShopping Master Page (Similar MasterPage for Visitor, User and Admin)

2.4 Web Pages details:

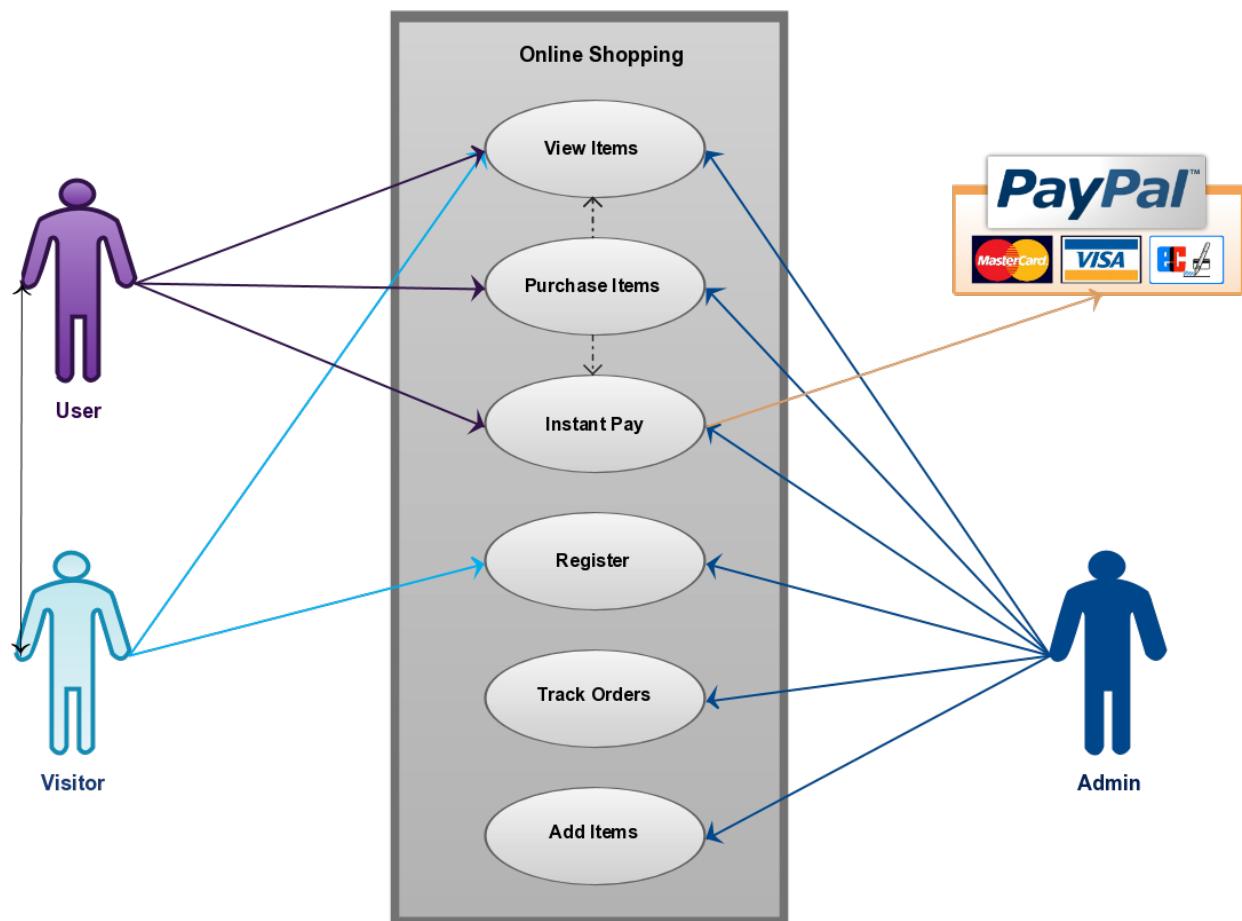
- Home Page
- AboutUs Page
- Product Page
- OrderUs Page
- ContactUs Page
- Admin Page
-
-
-

2.5 Project Detail:



3.0 SYSTEM REQUIREMENTS:

3.1 USE-CASE DIAGRAM:



4.0 ONLINE SHOPPING APPLICATION:

Anyone can view Online Shopping portal and available products, but every user must login by his/her Username and password in order to purchase or order products. Unregistered members can register by navigating to registration page. Only Admin will have access to modify roles, by default developer can only be an 'Admin'. Once user register site, his default role will be 'User'.

4.1 HOMEPAGE: The Home Screen will consist of screen were one can browse through the products which we have on our website



Online Shopping (Graduate Final Project) – Governors State University

- Online Shopping is a lifestyle e-commerce web application, which retails various fashion and lifestyle products (Currently Men's Wear). This project allows viewing various products available enables registered users to purchase desired products instantly using PayPal payment processor (Instant Pay) and also can place order by using Cash on Delivery (Pay Later) option. This project provides an easy access to Administrators and Managers to view orders placed using Pay Later and Instant Pay options. In this project I use C#.Net, SQL Server 2008 and various components of ASP.NET.



- Electronic commerce is generally considered to be the sales aspect of e-business. It also consists of the exchange of data to facilitate the financing and payment aspects of business transactions. This is an effective and efficient way of communicating within an organization and one of the most effective and useful ways of conducting business. It is a market entry strategy where the company may or may not have a physical presence.



- This is a visual search system specifically targeted for apparel. It aims at assisting users buying clothing and accessories. The

Figure1: Home Page

Design and Implementation of E-Commerce Site for Online Shopping

11

4.2. CLOTHING PAGE (PRODUCTS): This page consists of product details. This page appears same for both visitors and users.

The screenshot displays the homepage of the 'codigo' e-commerce platform. At the top, there's a navigation bar with a menu icon (three horizontal lines), the 'codigo' logo in yellow, and a shopping cart icon with a '0' notification. Below the header, there are four main product categories arranged in a row:

- Restaurant Website** (INR 1099): An image of two plates of food (one with noodles, one with a salad) on a bamboo mat.
- Portfolio Website** (INR 1299): An image of a hand holding a pencil, writing the word "CREATE" on a white surface.
- Space Hunter** (INR 1299): An image of a red pixelated alien from the Space Invaders game on a yellow brick wall.
- Dance Website** (INR 2299): An image of a woman with long hair dancing and wearing headphones while holding a smartphone.

Below this row, there are four more product categories arranged in a second row:

- Chat Application** (INR 999): An image of a white speech bubble icon on a pink background.
- Decision Review System** (INR 2999): An image of a cricket player in action, swinging a bat at a ball.
- Voice Assistant** (INR 1500): An image of a white humanoid robot with large eyes and a screen on its chest.
- Crawler** (INR 1200): An image of a close-up view of a green printed circuit board (PCB).

4.4 Contact Us Page: Visitors and Registered users can contact website owners or administrators from here



Home
About
Services
Contact

Contact

Email

Subject

Enter your message

+33 9 07 45 12 65
e-mail@mail.io
codigos

Follow me on social networks

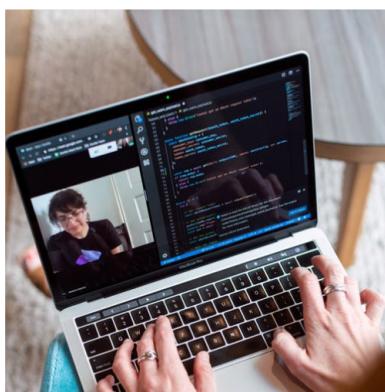
in Twitter Email

Send

Figure 4: Contact Us Page



Home
About
Services
Contact



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Figure 5: About us Page

Design and Implementation of E-Commerce Site for Online Shopping

The screenshot displays the homepage of the codigo website. At the top right, there is a shopping cart icon with a '0' indicating no items. The main navigation bar features the word 'codigo' in a large, yellow, lowercase font. On the far left, there is a vertical menu icon consisting of three horizontal bars.

The page is divided into two rows of four service offerings each. Each offering includes a small image, a title, and a price in INR.

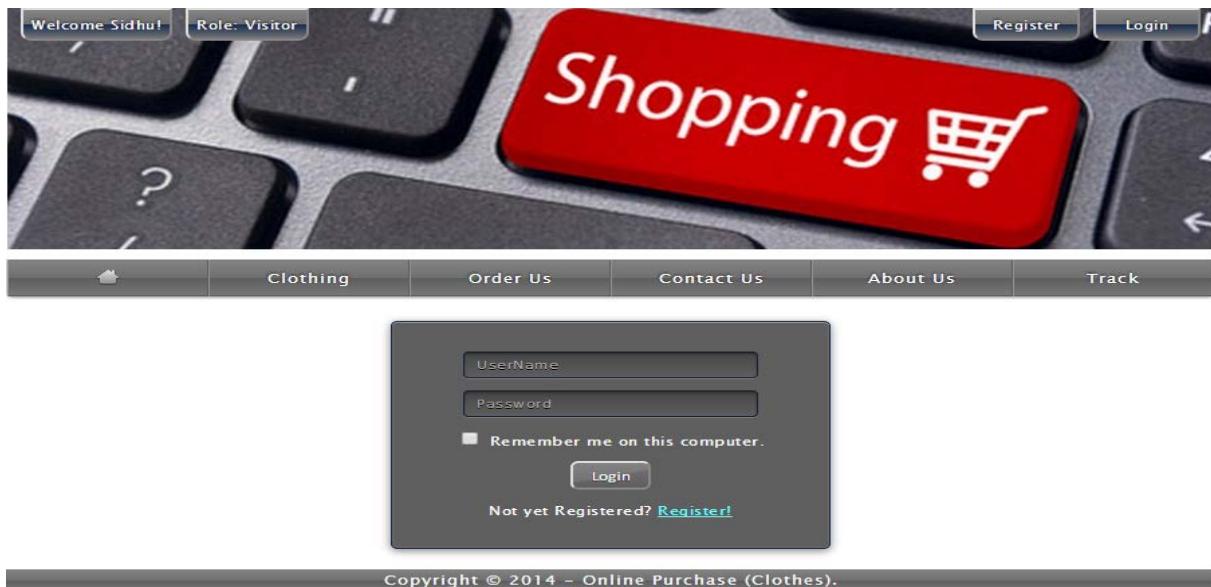
Offering	Description	Price (INR)
Restaurant Website	A plate of seafood salad.	1099
Portfolio Website	A hand writing the word 'CREATE' with a pencil.	1299
Space Hunter	A red pixelated alien on a brick wall.	1299
Dance Website	A woman dancing while listening to music on her phone.	2299
Chat Application	A white speech bubble icon on a pink background.	2000
Decision Review System	Two cricketers in action during a match.	2200
Voice Assistant	A white humanoid robot with blue glowing eyes.	1500
Crawler	A close-up view of a green printed circuit board (PCB).	1200

4.7 REGISTER PAGE: New users can register here



Figure 7: Register Page

4.8 LOGIN PAGE: Login page for both users and administrators.



4.9 Admin Page: Only difference you see in this page is Role: Admin. User and Admin role will be checked once the page was login and Session ["role"] will be either Admin or User. If credentials belong to Admin then role will be Admin and if credentials belong to User then role will be User.



Online Shopping (Graduate Final Project) – Governors State University

- Online Shopping is a lifestyle e-commerce web application which retails various fashion and lifestyle products.

Figure 9: Admin Page

Figure 4.12: Success URL

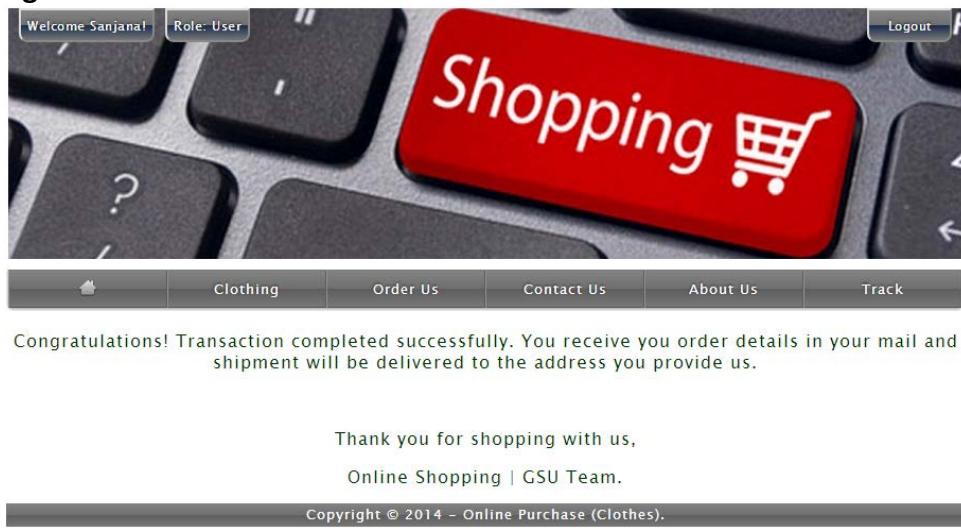


Figure 12: Success URL

FIGURE 4.12: Failed URL

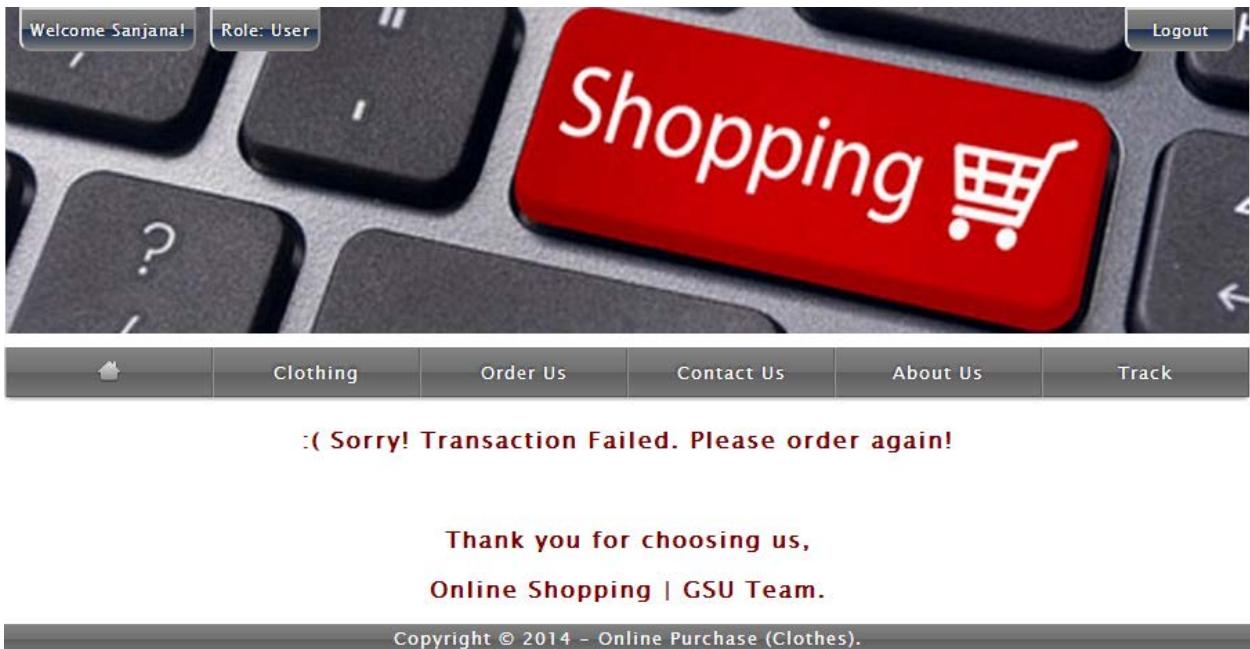


Figure 12: Failed URL

5.0 Data Management

5.1 Data Description

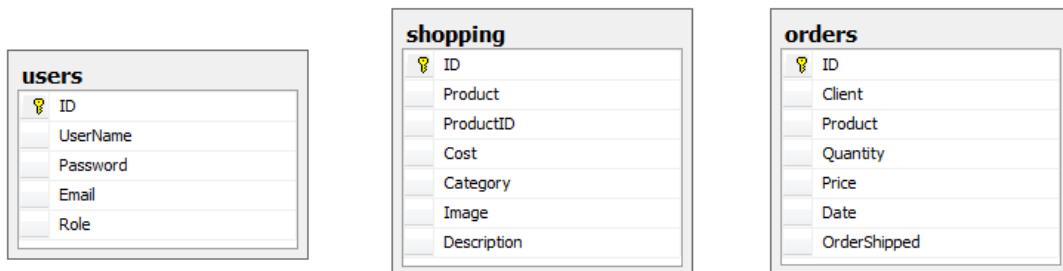
This database consists of

- Users: User and Admin information is added to database with Unique ID based on their roles.
- Shopping: Complete products information is stored in this table.
- Orders: Customer ordered products, status and delivery information is stored in this table.

5.2 Data Objects

- User: ID, UserName, Password, Email, Role
- Shopping: ID, Product, Product ID, Cost, Category, Image, Description
- Orders: ID, Client, Product, Quantity, Price, Date, OrderShipped

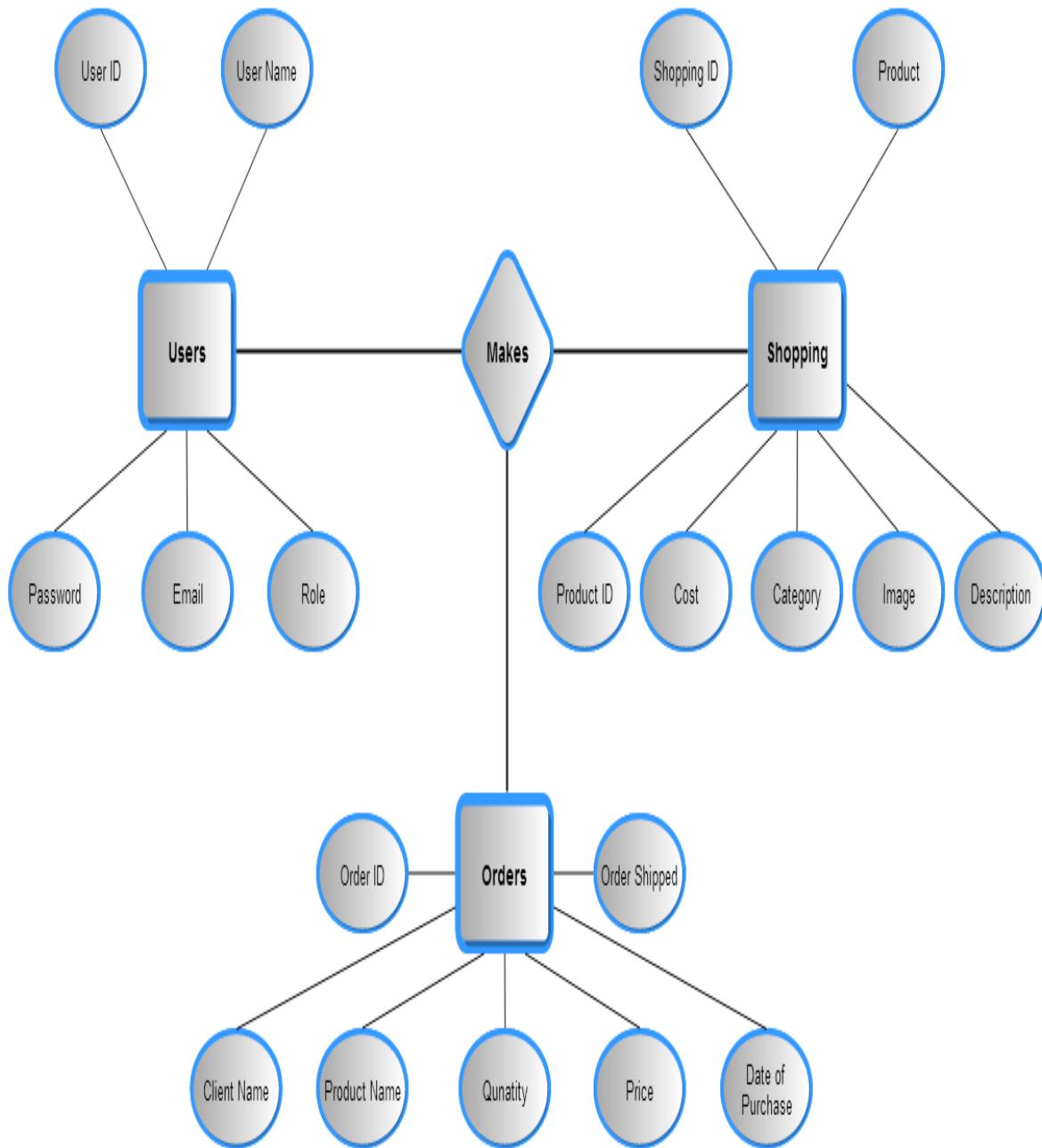
5.3 Database Table Diagram



Design and Implementation of E-Commerce Site for Online Shopping

18

5.4 Relationships:



6.0 Non-Functional / Operational Requirements

6.1 Security

- Pages of the website must be accessed in the way they were intended to be accessed.
Included files shall not be accessed outside of their parent file.
- Administrator can only perform administrative task on pages they are privileged to access. Customers will not be allowed to access the administrator pages.

6.2 Efficiency and Maintainability

- Page loads should be returned and formatted in a timely fashion depending on the request being made.
- Administrators will have the ability to edit the aspects of the order forms, product descriptions, prices and website directly

7.0 Conclusion:

The Internet has become a major resource in modern business, thus electronic shopping has gained significance not only from the entrepreneur's but also from the customer's point of view. For the entrepreneur, electronic shopping generates new business opportunities and for the customer, it makes comparative shopping possible.

As per a survey, most consumers of online stores are impulsive and usually make a decision to stay on a site within the first few seconds. "Website design is like a shop interior. If the shop looks poor or like hundreds of other shops the customer is most likely to skip to the other site. Hence we have designed the project to provide the user with easy navigation, retrieval of data and necessary feedback as much as possible. In this project, the user is provided with an e-commerce web site that can be used to buy books online. To implement this as a web application we used ASP.NET as the Technology. ASP.NET has several advantages such as enhanced performance, scalability, built-in security and simplicity.

Design and Implementation of E-Commerce Site for Online Shopping

20

To build any web application using ASP.NET we need a programming language such as C#, VB.NET, J# and so on. C# was the language used to build this application. For the client browser to connect to the ASP.NET engine we used Microsoft's Internet Information Services (IIS) as the Web Server. ASP.NET uses ADO.NET to interact with the database as it provides in-memory caching that eliminates the need to contact the database server frequently and it can easily deploy and maintain an ASP.NET application. SQL was used as back-end database since it is one of the most popular databases, and it provides fast data access, easy installation and simplicity.

A good shopping cart design must be accompanied with user-friendly shopping cart application logic. It should be convenient for the customer to view the contents of their cart and to be able to remove or add items to their cart. The shopping cart application described in this project provides a number of features that are designed to make the customer more comfortable.

This project helps in understanding the creation of an interactive web page and the technologies used to implement it. The design of the project which includes Data Model and Process Model illustrates how the database is built with different tables, how the data is accessed and processed from the tables. The building of the project has given me a precise knowledge about how ASP.NET is used to develop a website, how it connects to the database to access the data and how the data and web pages are modified to provide the user with a shopping cart application.

8.0 References:

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