## **Database Management System**

Mini Project Report

On

# **Online Shopping System**

Submitted by

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# SRINIVAS INSTITUTE OF TECHNOLOGY (NAAC ACCREDITED)

MANGALURU -574143 – KARNATAKA

# DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING SRINIVAS GROUP

# **CERTIFICATE**

This is to certify that the project entitled "Online Shopping System", is an authentic record of the work carried out by

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as prescribed by Visvesvaraya Technological University, Belagavi, for V Semester B.E. in Computer Science & Engineering during the year 2023-2024.

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Project Guide	Head of the Department	Principal

Name of the Examiners Signature with Date

1.

2

#### **ABSTRACT**

Online shopping management system project aims at create an online shopping system which can be used to buy articles. Traditional commerce is carried out physically with effort of a person to go and get products, ecommerce has made it easier for human to reduce physical work and save time. The administrator will setup the categories of the items. A category is a logical subdivision of category of similar products such as watches, t-shirts, shoes. The users of the system can cart the product they want and then chose the items they need and can buy it. If they don't need any item or article which is in cart, they can delete that product and can buy the rest articles/items.

The main objective of this Online Shopping System project is to make an internet based online shopping store system which provide vendors to make an online shop through which a customer can buy any product. The aim of designing this type of system is to manage the product in any shop and to provide an effective way to sell product by helping the customers to purchase it without having them in the store. This Online Shopping System can be used by anyone, a small store or a multinational company and as the system is online based it can be used from remote locations

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Priya M

Sharadhi S Shetty

# TABLE OF CONTENTS

CHAPTER N	<b>Vo</b>	TITLE	PAGE No
1		INTRODUCTION	1
1.1		Problem Statement	1
1.2		Scope Of the Project	1
2		REQUIREMENT SPECIFICATION	2-4
2.1		Functional Requirements	2
2.2		Non-Functional Requirements	2
2.3		Hardware Requirements	2
2.4		Software Requirements	3
2.5		Software Tools Used	3
	2.5.1	Front End Tool	3
	2.5.2	Backend Database Used	4
3		SYSTEM DESIGN	5-13
3.1		Flowchart	5
3.2		Database Table Design	6-7
3.3		Schema Diagram	8
3.4		E-R Diagram	9
3.5		Use-Case Diagram	10
3.6		Normalization	11-13
4		IMPLEMENTATION	14-16
4.1		Creating Database Using XAMPP	14-15
4.2		Stored Procedure	16

4.3	Triggers	16
5	SCREEN SHOTS	17-19
6	CONCLUSION AND SCOPE FOR FUTURE WORK	20
	BIBLIOGRAPHY	21

# LIST OF FIGURES

FIG	URE No	TITLE	PAGE No
	3.1	Flowchart	5
	3.2	Database Table Design	6-7
	3.3	Schema Diagram	8
	3.4	E-R Diagram	9
	3.5	User case Diagram	10
	3.6	Normalization	11-13
	5.1	Home Screen	17
	5.2	Categories Table	17
	5.3	Electronics Items	18
	5.4	Electronics Gagets	18
	5.5	Home Application	18
	5.6	Check-out page	19
	5.7	Cart Page	19

## LIST OF TABLES

Table No		TITLE	PAGE No
4.1	User Table		14
4.2	Orders Table		14
4.3	Products Table		15
4.4	Category Table		15
4.5	Cart Table		15

## INTRODUCTION

Online Shopping System is an application used to help the people to buy the items (books, crafts work, electronics accessories, the accessories too Online shopping is a form of electronic commerce which allows consumers to directly buy goods or services from a seller over the Internet using a web browser or a mobile app. Consumers find a product of interest by visiting the website of the retailer directly or by searching among alternative vendors using a shopping search

#### 1.1 Problem Statement

Online Shopping Portal System is a computerized, online solution to the various problems faced by the Product buyer and seller wishing to outsource their software development work to a Provider at an economical cost, thus achieving high performance, accuracy, reliability and high speed of data retrieval.

In this system, there is a registration process each for the Product buyer and by the provider after his registration and if satisfied, assigns him a user name and password.

## 1.2 Scope of the Project

The scope of Online Shopping System includes:

- Identify the responsible user for a new system
- Clarify the user request
- Identify deficiencies in the current system
- Establish goals and objectives for the new system
- Determine the feasibility for the new system
- Prepare a project charter that will be used to guide the remainder of the Project

## REQUIREMENT SPECIFICATION

## 2.1 Functional Requirements

A functional specification (functional specifications document (FSD), functional requirements specification) in systems engineering and software development is a document that specifies the functions that a system or component must perform. A functional specification is the more technical response to a matching requirements document.

A functional specification does not define the inner workings of the proposed system; it does not include the specification of how the system function will be implemented. Instead, it focuses on what various outside agents (people using the program, computer peripherals, or other computers, for example) might "observe" when interacting with the system.

Functional requirement for OSS includes:

<u>Input</u> – User id and password

**Process** After entering user id and password by user process of validation occur to identify whether user id and password is available in database or not.

**Output** – Registered user can access website and can use the services.

#### 2.2 Non-Functional Requirements

In systems engineering and requirements engineering, a non-functional requirement (NFR) is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors. The performance of the product mainly depends on the speed of Internet connection. If the user wants hard real time response, then this is definitely not the product to go for.

## 2.3 Hardware Requirements

The minimum/recommended hardware configuration required for developing the proposed software is given below:

- 4GB RAM or more
- 1.60GHz Processor
- Windows 7/8/10

## 2.4 Software Requirements

- Front End
  - O Visual Studio 2022/19
  - Programming language: HTML, PHP, CSS
  - o XAMPP server
- Back End
  - XAMPP and start Apache and MySQL services

#### 2.5 Software Tools Used

Online Shopping System is designed using visual studio 2022 as front end user interface design tool and XAMPP server at backend for creating tables and storing related information.

#### 2.5.1 Front End Tool

Microsoft Visual Studio is an integrated development environment (IDE) from Microsoft. It is used to develop computer programs, as well as websites, web apps, web services and mobile apps. Visual Studio uses Microsoft software development platforms such as Windows API, Windows Forms, Windows Presentation Foundation, Windows Store and Microsoft Silverlight. It can produce both native code and managed code.

Visual Studio includes a code editor supporting IntelliSense (the code completion component) as well as code refactoring. The integrated debugger works both as a source-level debugger and a machine-level debugger. Other built-in tools include a code profiler, forms designer for building GUI applications, web designer, class designer, and database schema designer. It accepts plug-ins that enhance the functionality at almost every level—including adding support for source control systems (like Subversion and Git) and adding new toolsets like editors and visual designers for domain-specific languages or toolsets for other aspects of the software development lifecycle (like the Team Foundation Server client: Team Explorer).

Visual Studio supports 36 different programming languages and allows the code editor and debugger to support (to varying degrees) nearly any programming language, provided a language-specific service exists. Built-in languages include C, C++, C++/CLI, Visual Basic .NET, C#, F#, JavaScript, TypeScript, XML, XSLT, HTML, and CSS. Support for other

languages such as Python, Ruby, Node.js, and M among others is available via plug-ins. Java (and J#) were supported in the past.

The most basic edition of Visual Studio, the Community edition, is available free of charge. The currently supported Visual Studio version is 2022.

#### 2.5.2 Back End Database

XAMPP is one of the widely used cross-platform web servers, which helps developers to create and test their programs on a local webserver. It was developed by the Apache Friends, and its native source code can be revised or modified by the audience. 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. PHP It is the backend scripting language primarily used for web development. PHP allows users to create dynamic websites and applications. It can be installed on every platform and supports a variety of database management systems. It was implemented using C language. PHP stands for Hypertext Processor

## **SYSTEM DESIGN**

The most creative and challenging phase of System Development Life Cycle (SDLC) is Software Design. SDS is systematic documentation of design.".

## 3.1 Flow Chart:

Flowchart is a generic tool that can be adapted for a wide variety of purposes, and can be used to describe various processes, such as a manufacturing process, or a project plan.

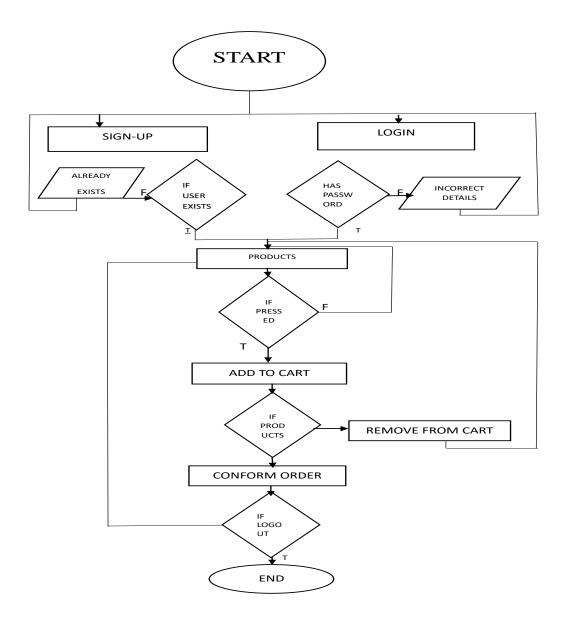


Fig 3.1: Flowchart of OSS

## 3.2 Database Table Design

This is of the latter type, intended to present an abstract, theoretical view of the major entities and relationships needed for management of electronic resources. It may assist the database design process for an e-resource management system, but does not identify every table that would be necessary for an electronic resource management database.

Name	Data Type	Constraints
user_id	Integer	Primary Key
first name	Varchar	Not Null
Last name	Varchar	Not Null
email	Varchar	
password	Varchar	
mobile	Varchar	
addresss1	Varchar	
address2	Varchar	

Table 3.2.1: User Table

Name	Data Type	Constraints
Order-id	Integer	Primary Key
User_id	Integer	Not Null
Product_id	Integer	Not Null
Qty	Integer	
Trx_id	Varchar	
P_Status	Varchar	

Table 3.2.2: Order Table

Name	Data Type	Constraints
Product_id	Integer	Primary key
Product_cart	Integer	Not Null
Product_brand	Integer	Not Null

Varchar	
Integer	
Varchar	
Varchar	
Varchar	
	Integer Varchar Varchar

Table 3.2.3: Product Table

Name	Data Type Constraints	
Cat _id	Integer	Primary key
Cat _title	Integer	

Table 3.2.4: Categories Table

Name	Data Type	Constraints
Id	Integer	Primary key
P_id	Integer	Not Null
Ip add	Varchar	Not Null
User-id	Integer	
qty	Integer	

Table 3.2.5 Carts Table

## 3.3 Schema Diagram

A schema is the structure behind data organization. It is a visual representation of how different table relationships enable the schema's underlying mission business rules for which the database is created. In a schema diagram, all database tables are designated with unique columns and special features, e.g., primary/foreign keys or not null, etc. Formats and symbols for expression are universally understood, eliminating the possibility of confusion. The table relationships also are expressed via a parent table's primary key lines when joined with the child table's corresponding foreign keys. Schema diagrams have an important function because they force database developers to transpose ideas to paper.

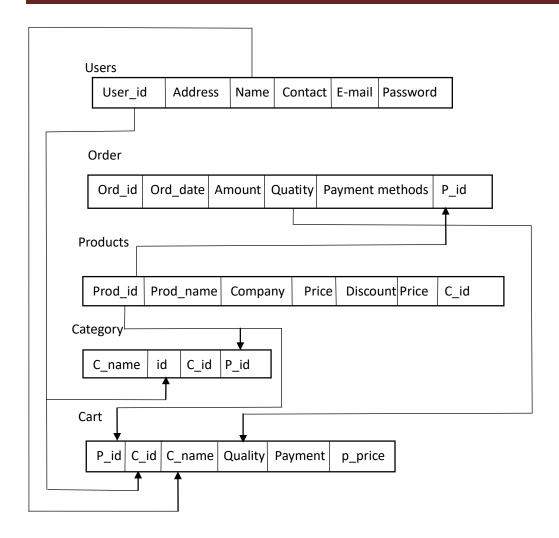


Fig 3.3 Schema Diagram of OSS

## 3.4 ER Diagram

An entity relationship diagram (ERD) shows the relationships of entity sets stored in a database. An entity in this context is an object, a component of data. An entity set is a collection of similar entities. These entities can have attributes that define its properties. By defining the entities, their attributes, and showing the relationships between them, an ER diagram illustrates the logical structure of databases. ER diagrams are used to sketch out the design of a database. Figure 3.3 depicts the ER diagram of OSS. It shows various entities, their attributes, relationships with other entities, cardinality ratios between entities and participation constraints used in designing data.

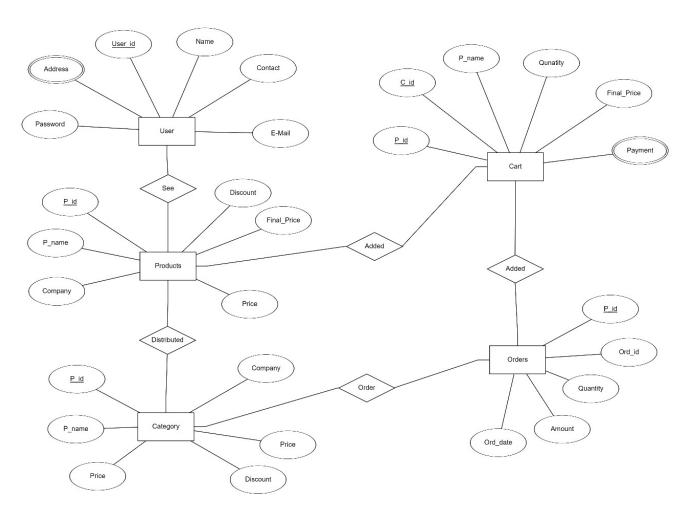


Fig 3.4: ER diagram of OSS

## 3.5 Use case Diagram

A use case diagram at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved. A use case diagram can identify the different types of users of a system and the different use cases and will often be accompanied by other types of diagrams as well. The use cases are represented by either circles or ellipses. Users interacting with application are shown outside with stickman symbol.

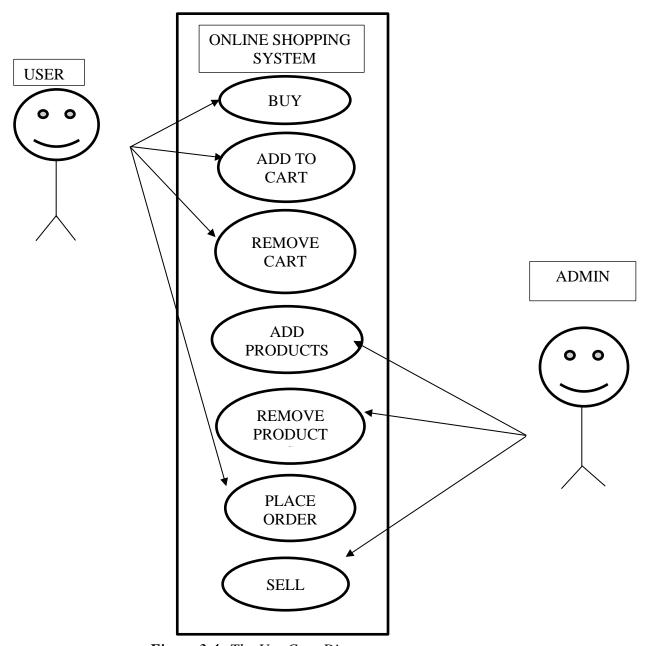


Figure 3.4: The Use Case Diagram

#### 3.6 Normalization

Database normalization is the process of structuring a relational database [clarification needed] in accordance with a series of so-called normal forms in order to reduce data redundancy and improve data integrity. It was first proposed by Edgar F. Codd as part of his relational model. Normalization entails organizing the columns (attributes) and tables (relations) of a database to ensure that their dependencies are properly enforced by database integrity constraints. It is accomplished by applying some formal rules either by a process of synthesis (creating a new database design) or decomposition (improving an existing database design).

#### First normal form (1NF):

First normal form (1NF) is a property of a relation in a relational database. A relation is in first normal form if and only if the domain of each attribute contains only atomic (indivisible) values, and the value of each attribute contains only a single value from that domain.

All relations in online shopping system have only atomic values, so they are in 1NF.

#### 1. User Table

User_id	First_name	Last_name	email	password	mobile	Address1	Address2
---------	------------	-----------	-------	----------	--------	----------	----------

#### 2.Order Table

Order_id	User_id	Product_id	Qty	Trx_id	P_Status

#### 3.Product Table

Prod_id Prod_cart	Prod_brand	Prod_title	Prod_price	Prod_desc	Prod_image

#### 4.Cart Table

Id	P_id	Ip_add	User_id	Qty

## **Second normal form (2NF):**

A relation is said to be in second normal form if it is already in first normal form and it has no partial dependency.

#### 1.User Table

	User-id	First_name	last_name	Email	password	mobile	Address1	Address2
,	Table 2:							
	User_id		password					

#### 2.Order Table

Order_id	User_id	Product_id	Qty	Trx_id	P_Status
----------	---------	------------	-----	--------	----------

#### Table 2

Trx_id	P-status
--------	----------

#### 3.Product Table

Prod_io	Prod_cart	Prod_brand	Prod_title	Prod_price	Prod_desc	Prod_image
---------	-----------	------------	------------	------------	-----------	------------

#### Table 2

Product_id	Product_cart	Product_brand

#### 4.Cart Table

Id	P_id	Qty

#### Table 2

P_id	Ip_add	User_id

## Third normal form (3NF):

It is a normal form that is used in normalizing a database design to reduce the duplication of data and ensure referential integrity by ensuring that:

- The entity is in second normal form.
- No non-prime (non-key) attribute is transitively dependent on any key i.e. no non-prime attribute depends on other non-prime attributes. All the non-prime attributes must depend only on the candidate keys.

#### 1.User Table

User-id	First_name	last_naı	me	Email	password	mobile	Address1	Address2
Γable 2								
User_id	Addr	ess1 A	Addre	ess2				

## Table 3

User_id	password
---------	----------

#### 2.Order Table

Order_id	User_id	Product_id	Qty	Trx_id	P_Status

## Table 2

Trx_id	P-status
--------	----------

#### Table 3

Order_id	P-status
İ	

#### 3.Product Table

Prod_id	Prod_cart	Prod_brand	Prod_title	Prod_price	Prod_desc	Prod_image			
Table 2									
Brand_id	Brand_id Brand_name								
Table 3									
Product_id									
4 Cart Table									
Id	d P_id		Qty						
Table 2									
P_id Ip_a			add						
Table 3									
User_id	User_id								

## **IMPLEMENTATION**

System implementation is the important stage of project when the theoretical design is tuned into practical system.

## 4.1 Creating Database Using XAMPP

XAMPP used for creating database for different tables used in OSS are given

Table 4.1-User Table



Table 4.2-Order Table

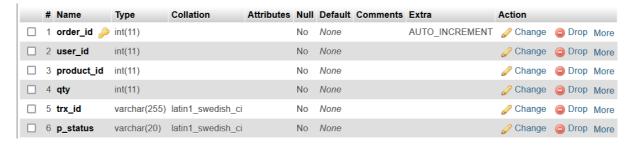


Table 4.2.1-Order\_info Table

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra	Action		
1	order_id 🔑	int(11)			No	None		AUTO_INCREMENT	Change	Drop	More
2	user_id	int(11)			No	None			Change	Drop	More
3	product_id	int(11)			No	None			Change	Drop	More
4	qty	int(11)			No	None			Change	Drop	More
5	trx_id	varchar(255)	latin1_swedish_ci		No	None			Change	Drop	More
6	p_status	varchar(20)	latin1_swedish_ci		No	None			Change	Drop	More

Table 4.3-Products Table

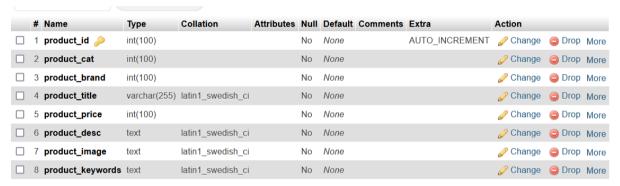


Table 4.4-Category Table

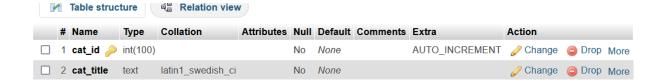
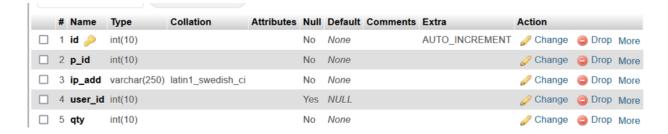


Table 4.5-Cart Table

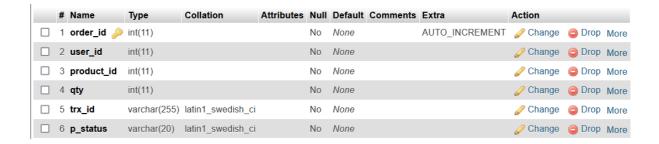


#### 4.2 Stored Procedure

Online Shopping System is developed using PHP, CSS, and JavaScript. The project is a useful project. This project contains the admin side and user side where a user can view shopping items details, sign up, and buy products online. While the admin can add items and users, products, manage them, and soon. Talking about the features of this system, the admin can manage the users, products, and check subscribers. While the user can shop for all the available

shopping items by signing in. And, in order to buy products online, he/she has to sign up/in through the system.

#### Stored procedure used in OSS for user table as follows:



## 4.3 Triggers

A trigger is a special type of stored procedure that automatically executes when an event occurs in the database server. DML triggers execute when a user tries to modify data through a data manipulation language (DML) event. DML events are INSERT, UPDATE, or DELETE statements on a table or view. These triggers fire when any valid event is fired, regardless of whether or not any table rows are affected.

## **SCREEN SHOTS**

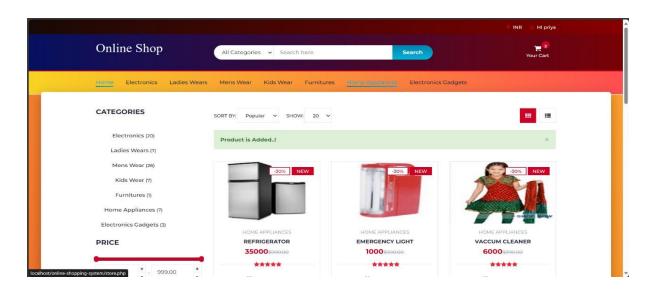


Fig 5.1: Home Screen

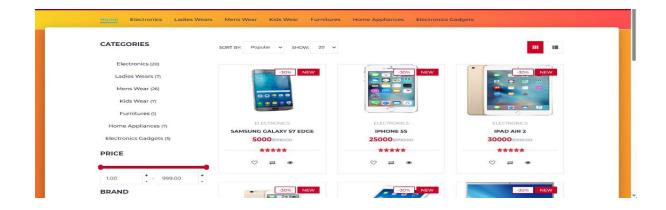


Fig5.2: Categories Table

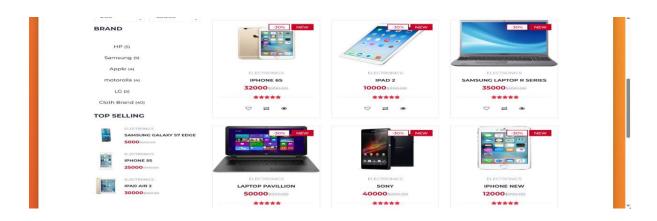


Fig 5.3 Electronics Items

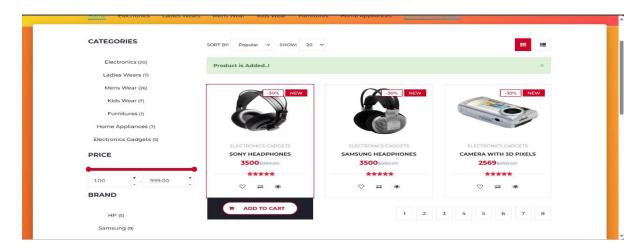


Fig 5.4 Electronics Gadgets

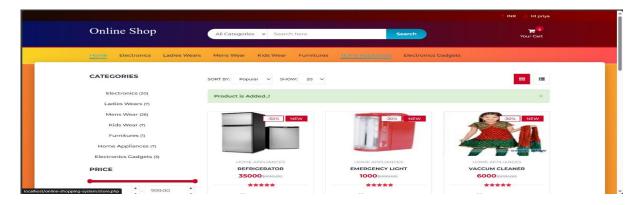


Fig 5.5 Home Applications

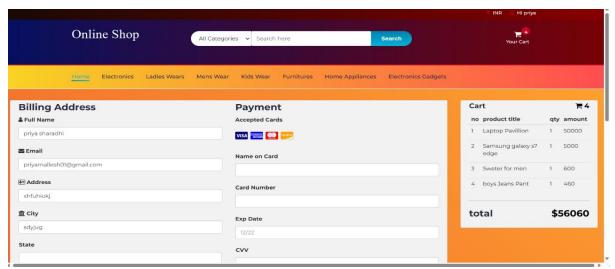


Figure 5.6 Check-out page

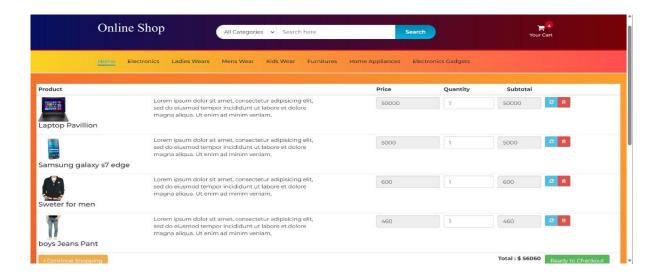


Figure 5.7 Cart page

## CONCLUSION AND SCOPE FOR FUTURE WORK

As we focus on the costs of online shopping, it seems that online shopping is really detrimental for the environment. Online shopping brings us great convenience, but it also encourages irresponsible consumption habits like exploiting the advantages of free returns and expedited shipping. These add on to the existing pool of environmental problems that we are dealing with – global warming, wastes and pollution. Therefore, we should change our attitude towards e-commerce – to be more responsible, less exploitative and more thoughtful for the environment. In conclusion, online shopping has revolutionized the way we shop, offering unparalleled convenience, a vast selection of products, competitive prices, and doorstep delivery. It has empowered consumers with information, simplified the shopping process, and provided access to a global marketplace. Embracing online shopping allows us to save time, make informed choices, and enjoy the convenience of shopping from anywhere, at any time.

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