

**DESIGN AND DEVELOPMENT OF AN ONLINE SHOPPING AND CUSTOMER
RELATIONSHIP MANAGEMENT SYSTEM**

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This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Masters of Science in Computer Science and Engineering

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APPROVAL

This Project/internship titled “**Design and Development of an Online Shopping and Customer Relationship Management System**”, submitted by Mohammad Zahidur Rahman to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of M.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 9th July 2020

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I, hereby declare that, this project has been done by us under the supervision of **Sheikh Abujar, Senior Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

The rapid development of Internet utilization has made it easy, and advanced online purchasing within the international market; as a result, the range of online customers is increasing extra than the variety of traditional clients. Customer participations are the basis of each commercial enterprise's success, due to the fact without the consumer, no enterprise can live to tell the tale or adapt with a trade that has been added by way of new technology. E-Commerce allows clients to shop for products or services from a seller via Internet with the use of e-commerce platform. Customers are the principle driving force; hence, the sellers want to manage their customers. Evidently, Customer Relationship Management (CRM) is a revolving manner in the course of which agencies have interaction with their customers and their buying activities. This project “Design and Development of an Online Shopping and Customer Relationship Management System” offers detailed facts about various merchandise in different classes and deals with the customer by way of making an agreement. This device turned into designed through the use of Hypertext Markup Language (HTML), Cascading Style Sheet (CSS), JQuery, and JavaScript; and its miles developed by using PHP, MySQL. This application system gives the benefits which include saving the time, facilitating to purchahse a product via online. Comparing the product on the basis of the rate as well as making sure the security bridge for the client. The authority or administrator can update their products via dashboard and hold a relationship with customers by sending data approximately new merchandise and different kinds of gives through electronic mail at any time.

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LIST OF ABBREVIATIONS AND ACRONYMS

ABBREVIATION	FULL FORM
SDLC	System Development Life Cycle
SRS	Software Requirement Specification
DDS	Design Document Specification
UAT	User Acceptance Testing
PSP	Personal Software Process
TSP	Team Software Process
COTS	Commercial off-the-shelf
AOSD	Aspect-Oriented Software Development
AOP	Aspect-Oriented Programming
IPT	Integrated Product Team
DFD	Data Flow Diagram
SA	Structured Analysis
SADT	Structured Analysis and Design Technique
HTML	Hypertext Markup Language
CSS	Cascading Style Sheet
RDBMS	Relational Database Management System
SQL	Structured Query Language

PHP	PHP: Hypertext Preprocessor
GUI	Graphical User Interface
CBA	Cost Benefit Analysis
BCA	Benefit Cost Analysis

CHAPTER 1

INTRODUCTION

Online purchasing is that the procedure of purchases item and some services from traders who promote on the web. With the uprising of the internet services, traders have investigated to the sold item to fogeys that froth the internet. Customers can visit webshops from their houses and save as they sit conveniently within the onward of the digital gadgets. Customers purchase different products from different online shops. People should buy nearly something from businesses that arrange their items online. Books, clothing, household appliances, toys, hardware, software, and insurance are just a variety of the masses of items customers should purchase from an online store.

1.1 Objectives of the Project

With rising retail casual condo and another running cost, with falling sales and monetary restraint, retailers do not have any option however urgently want to get another to increasing income. Online stores are often one of the interesting solutions. [1]Overpopulated nations like Bangladesh where a visitor's jam may be a commonplace figure and extraordinary product houses are located in exceptional areas; thus, its miles hard for personalities to shop for groceries physically. This is why it's greater time consuming and cause of physical and intellectual obstacle. Therefore, malleable purchasing for clients is necessary. Developers feel to form purchasing digital within which they have now not go physically which is a smaller amount of time-consuming. they need made purchasing a social manner to avoid wasting from all around the world the employment of the web, which is mentioned as online shopping. [1]A fruitful device continues its consumer satisfaction with the help of pleasant its clients' needs. The main objectives of the task are to:

- Ensure elaborate information on numerous items in an extraordinary group.
- trade with the shoppers through stipulation of various merchandise

- Monitor the whole specification of the merchandise together with numerous pictures and clients can also write their reviews/opinions based on their experience.

1.2 Introduction

The Internet has found you a significant useful arrangement in current business; therefore, Online Shopping has obtained importance not only from the marketers however additionally from the client factor of the scene. For entrepreneurs, This Shopping system produced recent commercial enterprise convenience, and for the client, it commits a correlative shopping possible. This shopping system is an automatic web-primarily founded application system. There is no have to put in the application. The prerequisite of this system is a website, a site call and variety to feature the web site. During this Online system, consumers purchase services or products by sending an invitation to the server with manufacturing facts and merchandise orders from the application. The admin of the system can add, delete, or update records via the dashboard system. Consumers experiencing the facts on the products and must be login to the web site for purchase products. [1]

1.3 Scope of the Work

World industries are fast spread. For that reason economy is growing, people are hunting different methods to shop for products with a decent deal ease and till now it hold cost-effectiveness. The seller has to buy and stock the products so on promotion to end-users. The manual approach of buying merchandise is popping into old procedures. Products could also be ordered through online and payment done except visiting the merchandise seller. Therefore, there is a massive class of exposure and permitting direct order, also processing and surrendering of merchandise via an application. For this application, it could also be a gadget manager who may have the correct to required features, delete, as a choice of update merchandise. Online buying and purchaser management device may

be a system as relies on the online application and operates via the Internet. [2] E-shop on a branch; like sty and accessories, electric items, and books, is rising everywhere the globe. Retail achievement isn't all toward fully stores. It can be clear the reason is, the rise in dealers now supplying online shop links for customers. With the expansion of e-shop, arrive a property of the latest market step insurance chance. [2] There are ample online businesses upon the web surface. People have numerous taste to shop via online. Presently, people are so unavailable that they need no time to travel to any shopping malls and buy accessories they need. Everyone appreciate online shopping. This is why the consideration of online shopping is rising with the passage of your time and one cannot negate this reality. As well as, an online shop provides a lot of commission which will not be established in regional stores. Besides, start numerous e-shops not only give large commission on various item but at a similar time, they supply gratis shipping also. e-shopping is ready to allow the advantage of comparing the identical item at different e-shops together, start which can't be tired of a supermarket. It not only balance the standard of an item but item prices yet. Anyone can order anything from any a portion of the planet and therefore the item is supplied to their home. Normally, the local shop-owners cannot deny consumer responses about any item substantially but in the e-shop, admin of the e-shop can read consumer responses about any item. All Customers' responses may be helpful to new consumers. Usually, adolescents are more inquisitive about the e-shop, the reason is the adolescents pass longer ahead of their computer surfing the internet^[2]

1.4 Organization of the Project

The first chapter introduces the Objectives of the Project, Introduction, Scope of the Work, and Organization of the Project.

The second chapter describes the System Study, Literature Review, Review on Existing Systems, Features of Existing Systems, and Challenges of Existing Systems.

The third chapter describes the Introduction, Use Case Diagram, gives Overview of Database System, Entity-Relationship Model, and Entity Relationship Diagram, shows

Features of the Proposed System, Advantages of the Proposed System, and Issues Considered for Designing the Proposed System.

The fourth chapter describes the System Development Life Cycle, Methodology, and Project Specifications. The fifth chapter describes the Introduction, Model Selection from Different Software Process Models, Model Selection from Different E-commerce Models, and Development of the System.

The sixth chapter describes the Introduction and Comparative Study on Existing Systems and Proposed System.

The seventh chapter describes the Goal, Summary of Findings, Suggestions for Future Work, and Conclusion.

CHAPTER 2

BACKGROUND STUDY

This chapter takes measures sufficient heritage for the reader to completely recognize the process of the work. to create any modern system, it necessitates an evaluation of preceding work, on which the work.

2.1 System Study

System examination is that the path of gathering and interpreting details, realizing troubles, and therefore the use of the statistics to hunt advice from improvements on the device. System has a look at or evaluation may be a problem-solving hobby that setting up contacts among the machine customers and therefore the device developers. [3]

System evaluation or examination may be a crucial period of any system improvement process. The gadget is observed as a full, the inputs are classified and therefore the system is subjected to shut examine to perceive the trouble areas. The possible solutions notion. The concept is reconsidered on user request and compatible modifications are formed. This loop finished as quickly because the user is glad with the concept. [4]

2.2 Literature Review

This section describes what was need to study for constructing this system such as different methods, models, parameters, and so on. They are described in the following subsections.

2.2.1 Nature of WebApps

In the previous days of the World Wide Web, websites composed of petty more than a set of connected hypertext files that given report using text and limited graphics. As time passed, Today, WebApps has resulted in effective computing tools that not only bargain a separate function to the end-user(customer) but also compact with collective databases

and business applications. The following characteristic is obstructed in the spacious majority of application ^[5]

2.2.1.1 Intensive Network

Online based web application is living in a community and ought to serve the wishes of various denomination of clients. Network may allow worldwide to get admission to and communication like the Internet or extra restricted get entry to and communication like a company Intranet. ^[5]

2.2.1.2 Concurrency

A massive range of users may get right of entry to the WebApp at only for one time. In numerous cases, the styles of conduct amongst end-customers will change Generally. ^[5]

2.2.1.3 Arbitrary Load

The variety of online users of the application might also vary by orders of extension from the everyday. Three hundred users can also display up on Sunday; 30,000 might also conduct the online system on Saturday. ^[5]

2.2.1.4 Availability

If a WebApp user needs to wait too long like for server-facet transform, for access, for client-aspect formatting and display.she or he may determine to go somewhere. ^[5]

2.2.1.5 Data-Driven

The number one attribute of numerous WebApps is to conduct hypermedia to provide text, graphics, audio, and video content and many more to the end-user. Besides, WebApps are commonly used to entrance facts that exist on the databases that aren't completed a portion of the Web-primarily risen environment like e-commerce or monetary applications. ^[5]

2.2.1.6 Sensitive Content

The first-rate and inventive substance of glad stays a crucial definitive of the agreeable of a WebApp. ^[5]

2.2.1.7 Continuous Evolution

dissimilar accepted application software program that originates upon a chain of design, historically distribute relief, Web applications originate constantly. It is not abnormal for some WebApps more specifically, their main content to be updated on time to time table or for main content to be separately calculated for every request. ^[5]

2.2.1.8 Concurrence

Albeit simultaneity, the constraining want to turn the software to the industry rapidly, is a feature of numerous services of reign, WebApps regularly showcase a time-to-industry that can be a be counted of a small number of days or weeks. ^[5]

2.2.1.9 Security/ surveillance

Despite WebApps are accessible through the internet to get admission to, its difficult, if no longer futile, to border the traffic all of the end-users who may also get admission to the utility. apropos of protecting impressionable content material and offer a stable manner of data despatch, strong protection measures ought to be completely totally the infrastructure that helps a WebApp and in the utility as such. ^[5]

2.2.1.10 Theory of art

A certain component of the petition of a WebApp is its attention and feel. When a system(Application) has been planned to promote or encash merchandise or ideas, philosophy of art can even have as lots to try and do successfully as technical design ^[5]

2.2.2 Categories of E-commerce Model

Electronic Commerce (e-commerce) is a method of modern-day business, which directed the want of enterprise institutions, sellers, and clients to assuage fees and enhance the great of goods and services at the same time as growing the rate of delivery. E-commerce enterprise models can be divided into the subsequent group.

1. **Business - to - Business (B2B)**
2. **Business - to - Consumer (B2C)**
3. **Consumer - to - Consumer (C2C)**
4. **Consumer - to - Business (C2B)**
5. **Business - to - Government (B2G)**
6. **Government - to - Business (G2B)**
7. **Government - to - Citizen (G2C)^[6]**

2.2.2.1 Business - to - Business (B2B)

An internet site consequent to the B2B commercial enterprise model encash its merchandise to an interim customer who after that sells the item to the end purchaser. For example, peddler location an order from a company's internet site and after receiving the order manager encash the end-item to the very last client who arrives to purses the item at one among its casual inlet. ^[6]

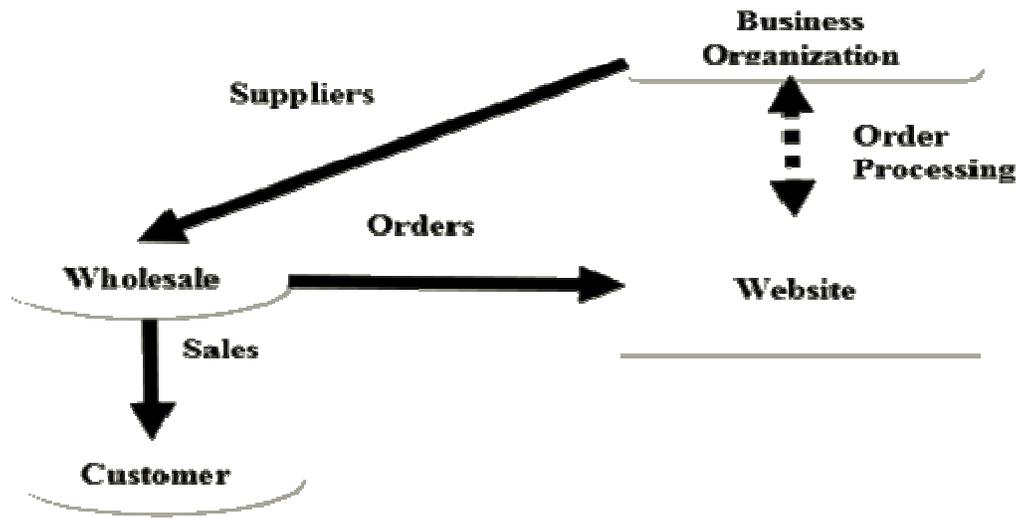


Figure 2.1: Business-to-Business Model

2.2.2.2 Business - to - Consumer (B2C)

A website consequent to the B2C enterprise version encash its products at once to a purchaser. A purchaser can be showing the item proven on the website. A patron can select a item, and also order the equivalent. The internet site will then ship a notice to the commercial enterprise organisation via electronic mail and the business enterprise will express the items to the purchaser. ^[6]

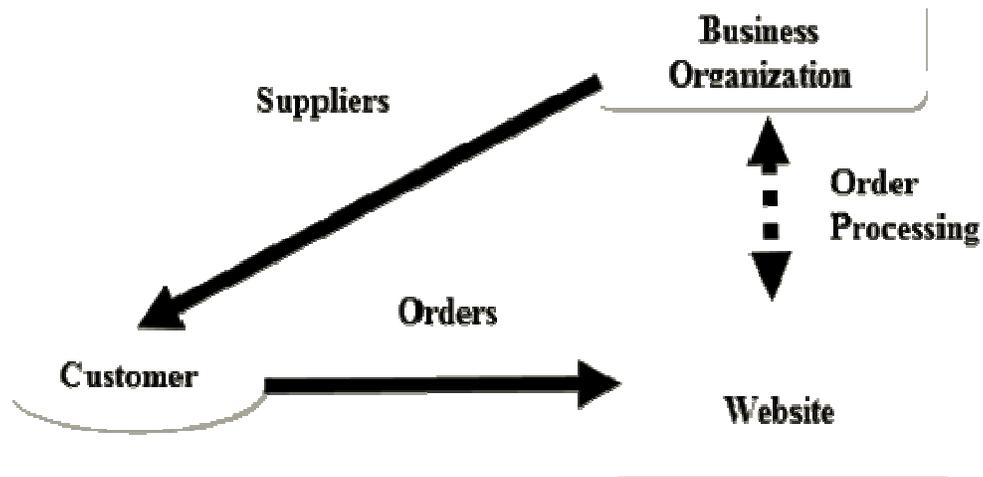


Figure 2.2: Business-to-Consumer Model

2.2.2.3 Consumer - to - Consumer (C2C)

A website consequent to the C2C enterprise version helps purchasers to promote their capital for example cars, motorbikes, and residential property. As a choice is to lease a room by using revealing their facts on the website. This site may or might not rate the customer for its business. Besides, a patron might also select to shop for the made of the first purchaser by showing the ad for publicity on the internet site. ^[6]

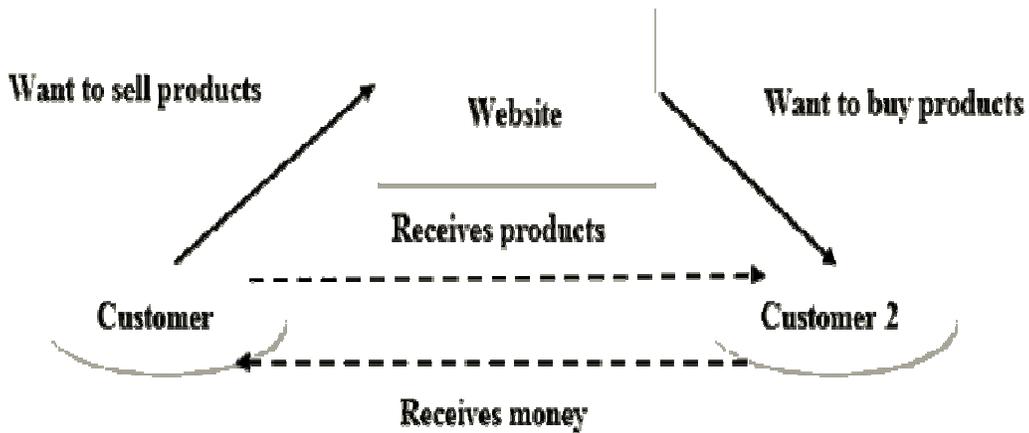


Figure 2.3: Consumer-to-Consumer Model

2.2.2.4 Consumer - to - Business (C2B)

In the C2B model, a purchaser method a website viewing many business corporations for a selected service. The purchaser locations a guess of the quantity he/she deficiency to expend for a specific business. For understanding, this concept just has a look at an example like the contrast of hobby rates of private vehicle loan furnished by diverse banks through websites. A business company that satisfied the purchaser necessity among the exact budget, techniques the purchaser and gives their services. ^[6]

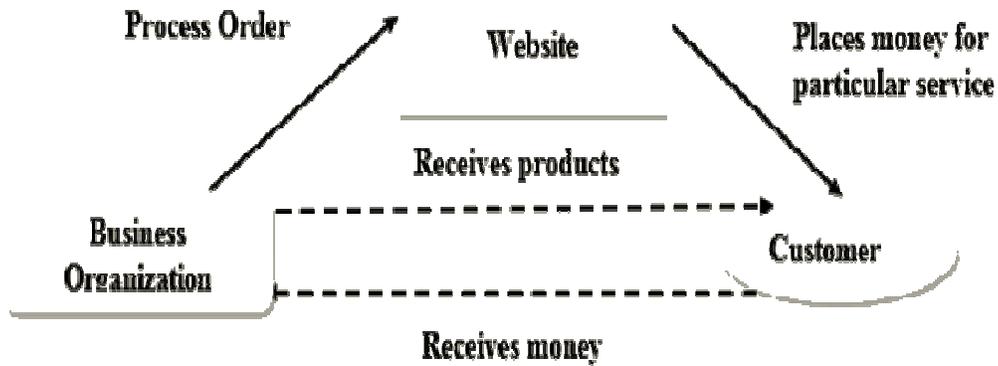


Figure 2.4: Consumer-to-Business Model

2.2.2.5 Business - to - Government (B2G)

B2G version is a variation of the B2B version. Certain web sites are utilized by the governments to exchange, also exchange data with diverse business institutions. Certain websites are axiomatic with the aid of the authorities and bargain average to groups to put up application bureaucracy to the government ^[6]



Figure 2.5: Business-to-Government Model

2.2.2.6 Government - to - Business (G2B)

This model used by only the government. web sites to method business institution. Certain web sites aid chaffer, proposal, and application bowing all the characteristics. ^[6]



Figure 2.6: Government-to-Business Model

2.2.2.7 Government - to - Citizen (G2C)

G2C model used by only the governments. web sites to method citizens in common. Certain websites aid chaffer of vehicles, those devices, or other material. Certain website also offers many facilities. Such as marriage or demise certificates and registration of birth. The considerable purpose of G2C websites is to assuage the common time for satisfying citizen's application for numerous authorities' facilities. [6]



Figure 2.7: Government-to-Citizen Model

2.2.3 Prescriptive Software Process Models

Prescriptive system fashions had been in the beginning proposed to remove the confusion of software development. History has said that such conventional models have added a particular quantity of beneficial structure to software engineering work and have furnished a moderately operative avenue map for software teams.

Following are the major and famous models ensued in the industry;

- The Waterfall Model

- The V-Model
- Incremental Process Model
- Evolutionary Process Models
- Component-Based Development Model
- The Formal Methods Model
- Aspect-Oriented Software Development Model
- Personal Software Process (PSP)
- Team Software Process (TSP)^[5]

2.2.3.1 The Waterfall Model

There are lots of Process Model. But this model is mentioned as the first process model. It is the quick SDLC tools that used in Software Engineering for software development. It is also mentioned as a linear-sequential lifestyle cycle version that means this software development model method based on linear sequential flow.

The waterfall model is so simple and easy to understand. This model finished with various steps. Those steps are own lifecycle that means there is no overlap in those step. If one step is complete then the next step will start. So in this model, steps do not overlap^[5].

Waterfall Model – Design:

This model is the quick SDLC tool used in Software Engineering for software development and the waterfall model broadly used Software Engineering to assure the success of any project or software. In the "The Waterfall" method, the entire method of software development is separated into some steps. In this model, typically, the result of one step acts because the enter for the next step sequentially.

Figure 2.8 is a representation of the specific step of this model.

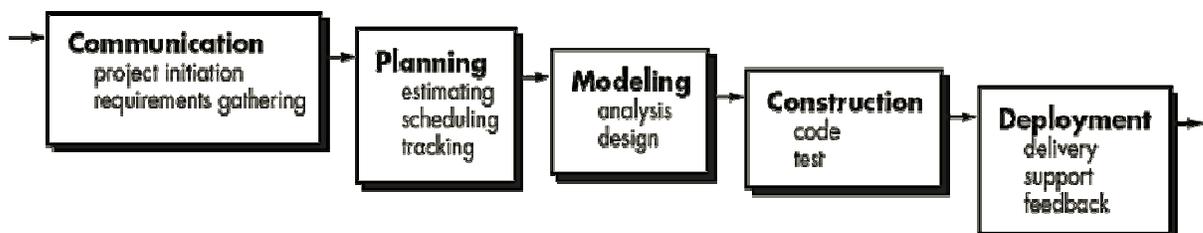


Figure 2.8: The Waterfall Model

Those steps are easily understandable. The first step is communication. In the communication step, two things like project initiation and requirements gathering are completed. Project initiation means to communicate with clients and all the requirements are collected then the project would be initialized. The next step of this model is planning. In the planning section, estimating, scheduling, and tracking are completed. The next step of this model is modeling. In this modeling section, the analysis and design part will be completed. The next step of this model is Construction. The construction section is the most important because in this coding and testing part will be done. The next step and final step is Deployment. In this step project or software deliver to the client and received client feedback. ^[5]

2.2.3.2 The V Model

The extension of the waterfall model is called the v-model and it is established totally on the organization of a testing section for every similar improvement phase. This model approach says that for each unmarried section in the improvement cycle, there is an instantly related testing segment. It is a highly-disciplined version and the next section starts most effective after the final touch of the previous section. ^[5]

V-Model - Design

In this model, the similar testing section of the improvement segment is deliberate in collateral. So, on one view of the 'V', there are the Verification section and Validation stages at another view. The Coding section joins the two aspects of this model. A various modification of the waterfall version is referred to as the V-version, represented in Figure.2.9.

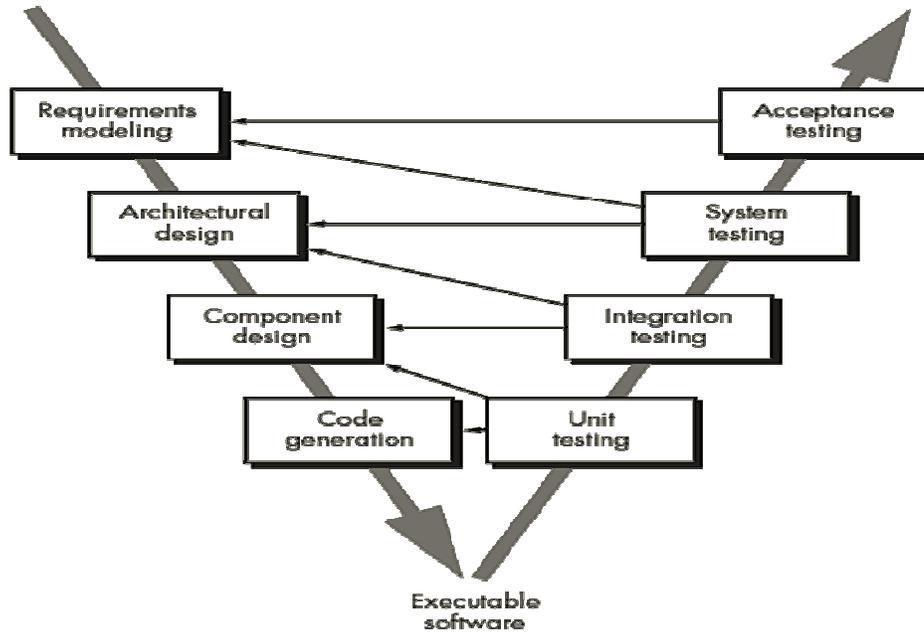


Figure 2.9: The V-Model

This model delimitate the relationship of nice guarantee actions to the actions related to communication, beginning production operations. It is a V shape software model. So in this model there are two parts. One is left side of V and another is the right side of V. A project or software starts with the left side of V all the necessities delicate into continuous grater targeted and all the technical representation and all of the representative solution done here. The representative solution means the coding part. When code has been generated, it moves the right side. On the right side, perform a chain of tests that means pleasant guarantee movements. A reality of the V model is there's no basic variance among the classic lifestyles cycle.

Although the waterfall model is the first model in software engineering. But this model offers a manner of visualizing how authentication and confirmation actions are used to in advance engineering work ^[5]

2.2.3.3 Incremental Process Model

This is the version that connects elements of linear and parallel conduct flows. The incremental process model covers to linear development in an exceedingly reel style as daily time improvement. Every linear development can be pulled out “increments” of the

software in an exceedingly manner that's very uniform to the increments involved through a mutative technique flow. [5]

Figure 2.10 is a representation of the Increment process model.

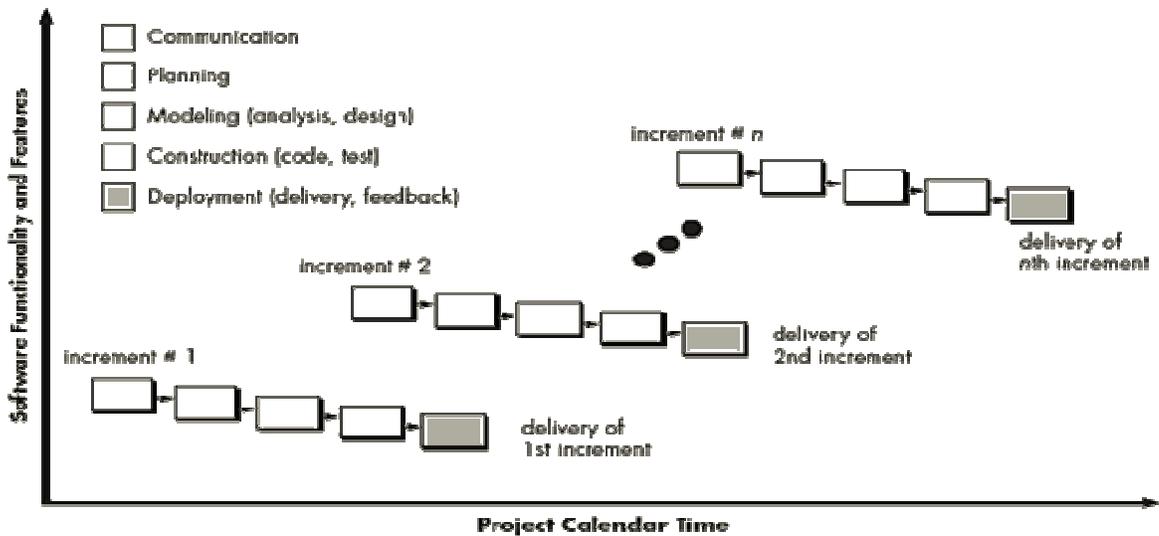


Figure 2.10: Incremental Process Model

2.2.3.4 Evolutionary Process Models

Now, time to talk about some iterative model. The Evolutionary process models are iterative.

Evolutionary process models represent a way that permits the developer to develop progressively more finished versions of any software.

Prototyping, often, a client established a set of fashionable goals for software but it does not discover elaborated necessities for every feature or every function. In different cases, developers can be uncertain of the ability of an algorithm, the flexibility of a working system. In these and plenty of different situations, a prototyping paradigm may provide a better method. [5]

Figure 2.11 representations of prototyping paradigm.

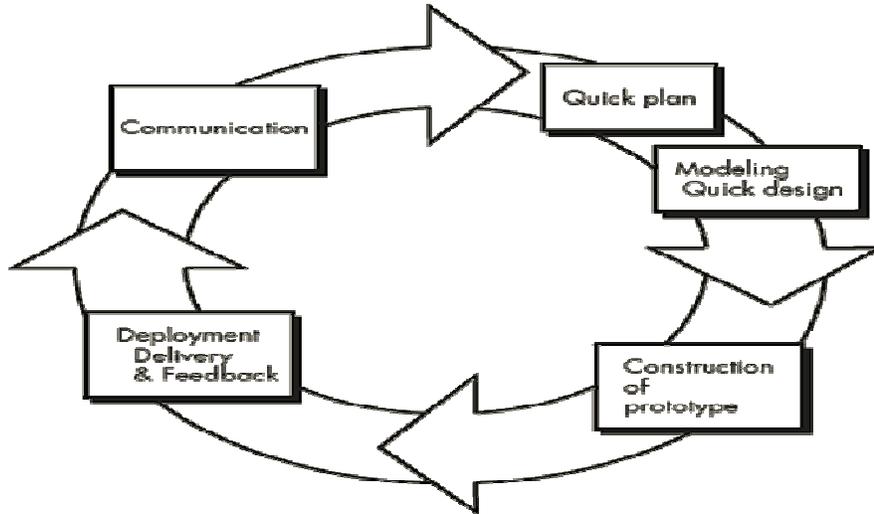


Figure 2.11: The Prototyping Paradigm

2.2.3.4 Spiral Model.

The waterfall model, increment process model are discussed in the previous section. This time introduced a model called the spiral model which is a combined version of the iterative model with the regular and controlled component of the waterfall model. This model could be a sequence of an iterative improvement procedure model and an Eolithic linear advanced version such as The waterfall version with a completely high insistence on chance analysis. The spiral model permits incremental relief of the merchandise or incremental revision over every iteration across the spiral. [5]

Figure.2.12 representation of the spiral model.

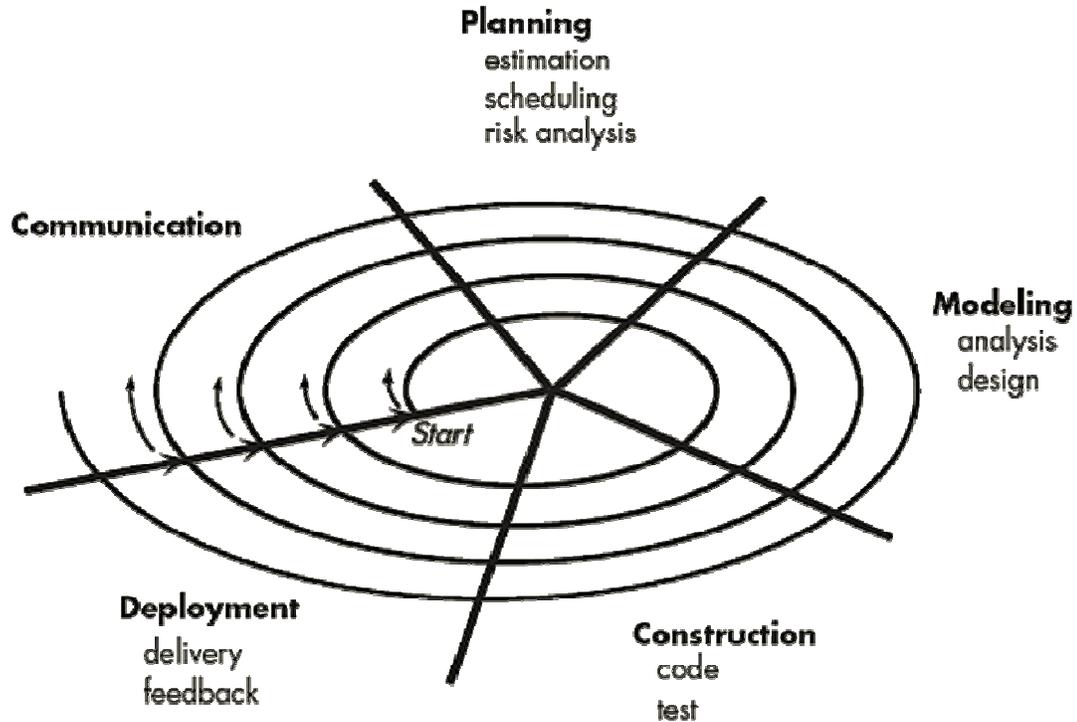


Figure 2.12: The Spiral Model

2.2.3.5 Component-Based Development

This model created with the aid of the supplier who offers them as item, all offer specific operation with well-described interfaces that allow the factor to be comprehensive into the software program this is to be constructed.

The factor-based improvement model incorporates the following steps:

- All receivable component-primarily established items are investigated.
- appreciated the application area in question.
- Component incorporates problems are review.
- A software program framework is planned to adjust the components.
- Components are incorporated into the framework.
- Comprehensive trying out is carried out to provide correct functionality.^[5]

2.2.3.6 The Formal Methods Model

This technique version surrounds a fixed of operations that result in a proper mathematical identification of a computer software program. These techniques permit a developer to individualize, spread, and proved a laptop-based gadget with the aid of applying a rebarbative, mathematical notation. This approach referred to as white room software program engineering, which is presently applied by way of a few software development organizations.

Although no longer a mainstream approach, the version of the formal approach offers the commitment of faultless software. Still now, idea approximately its application in a commercial enterprise surroundings has been expressed. But the implementation of the formal model is so much time consuming and costly. The reason is, some software developers have an important background to implement a formal method and broad training is also required. This method is complicated to use the fashions as a verbal exchange mechanism for theoretically naive customers.^[5]

2.2.3.7 Aspect-Oriented Software Development

When issues cut throughout multiple machine responsibilities, characteristics, and, evidence, they're often called transaction issues. All of the necessities determine the ones cross-cutting issues that affect the software architecture. Aspect-orientated software program development (AOSD), usually said as aspect-orientated programming (AOP), is a quite recent software engineering model that offers a system and systematic method for defining, indicating, designing, and building.^[5]

2.2.3.8 Personal Software Process (PSP)

- This process highlights the private dimension of the work manufacture this is generated and the consequence excellent of the work manufacture. Besides, PSP makes the professional accountable for venture planning for example, calculating and planning and entitles the professional to manipulate the exceptional of all software program paintings products which can be made.

The PSP model determine with five action:

- **Planning:** This hobby separates necessities and evolves size and guesses useful resource. Besides, an illness estimate that means the variety of faults of a project for the work is done. Total measures are store on worksheets or templates. Lastly, improvement duties are determined and an undertaking time table is generated.

- **High-level design:** outer specs for every element to be built are prepared and the component layout is made. Originals are built whilst ambiguity exists. Total troubles are tracked and reported.
- **High-level design review:** Proper Confirmation techniques are implemented to expose errors within the design. Measure are retained for all vital responsibilities and paintings results.
- **Development:** In this section, component-level design is sublet and revised. That means, first all of the code is generated, then the developer will review the code, after that developer compiled the code, and finally the developer will test those codes. Measure are retained for all critical tasks and paintings results.
- **Postmortem:** through the measure are gathered (that is a huge amount of records that should be examined statistically), the performance of the manner is calculated. Measures are ought to offer steerage for enhancing the manner to improve its effectiveness. ^[5]

2.2.3.9 Team Software Process (TSP)

- TSP aims to construct an “autonomous” challenge team that arranges self to generate first-rate software. Humphrey [Hum98] tells the subsequent goal for TSP:
- Construct autonomous teams that perfect plan and adjust their work, determine goals, and very grant their techniques and blueprint. These may be pure software groups or it included item teams of 3 to around 20 engineers.
- Team managers show how to train and how to encourage their teams and team manager also show that how to help them maintain height achievement.
- faster software process progress with the aid of making CMM23 Level five conduct regular and awaited.
- assist college coaching of industrial-grade group expertise. ^[5]

2.3 Review on Existing Systems

In everyday life, people want to shop for one of a kind services or products from special shops. So, purchasing turns into an efficient part of the day by day life.

Traditionally, they want to go, physically, to buy those services or products. But whilst people buy these services or products via the Internet the usage of a web browser from a vendor, is referred to as online purchasing. In online shopping clients want no longer physically go to the safe; so, online purchasing is also known as digital shopping. The online buying management system permits the customers to directly purchase facilities or products from a supplier over the Internet. Different names are e-store, e-shop, Internet save, web-keep, web-shop, online shop, and so on.

There are masses of demanding situations that came in advance to develop the net purchasing management machine along with product availability, emblem availability, transaction process, keep statistics properly, user-pleasant interface, etc. A customer can search over the internet to get records about a product through the use of the proposed online shopping management system. They can chat with the income supervisor to get more information or help to shop for products. They can select and pick out one or multiple products that they're interested to purchase. It is very easy and handy to inquiry about a product and able to examine the price and nice of the identical product of various brands the usage of this device without going to the excellent save or market.^[17]

2.4 Features of Existing Systems

Features supplied by Existing Online Shopping Systems are as follows:

- Numerous products and their categories.
- To offer the looking facilities based on different factors inclusive of various kinds of products to the customer.
- To manipulate the information of customers.
- Show the statistics and outline of the various type of products to the customer.
- To allow Full-size products picture through previewing display.
- Allow Products picture zoom option to viewing with bigger the scale of merchandise.

- Products Comparisons.
- To replace of shopping cart i.e. capability to add/edit/delete item.
- Gets Email notifications.
- To cope with tracking the facts and transactions of payments.
- At present, there have a few web-based Online Shopping Systems such as:
- Chaldal.com (<https://chaldal.com/>), which is shown in Figure 2.13
- AjkerDeal.com (<https://ajkerdeal.com/>), which is shown in Figure 2.14
- Shadmart.com (<http://www.shadmart.com/>), which is shown in Figure 2.15
- Flipkart.com (<https://www.flipkart.com/>), which is shown in Figure 2.16
- eBay.com (<http://www.ebay.com>), which is shown in Figure 2.17

Chaldal.com

Chaldal.Com is an online grocery store in Bangladesh. They believe the time is adored to fellow location-wise citizens, and they should not have to lose hours in traffic, courageous corrupt climate. Besides they should not wait in line just to buy basic requirements like salt, milk! For that reason, Chaldal delivers entirely a philanthropist need proprietary at his door-step and it does not need any additional cost. [18]

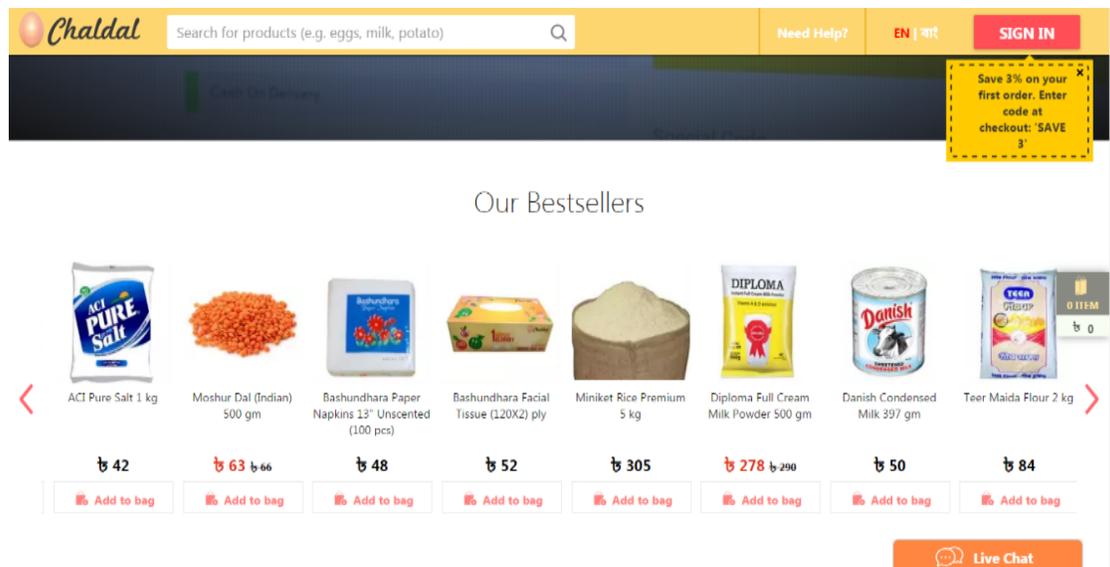


Figure 2.13: Chaldal.com

AjkerDeal.com

Bangladeshi consumer buy the Best Products Online from AjkerDeal.com. [19]

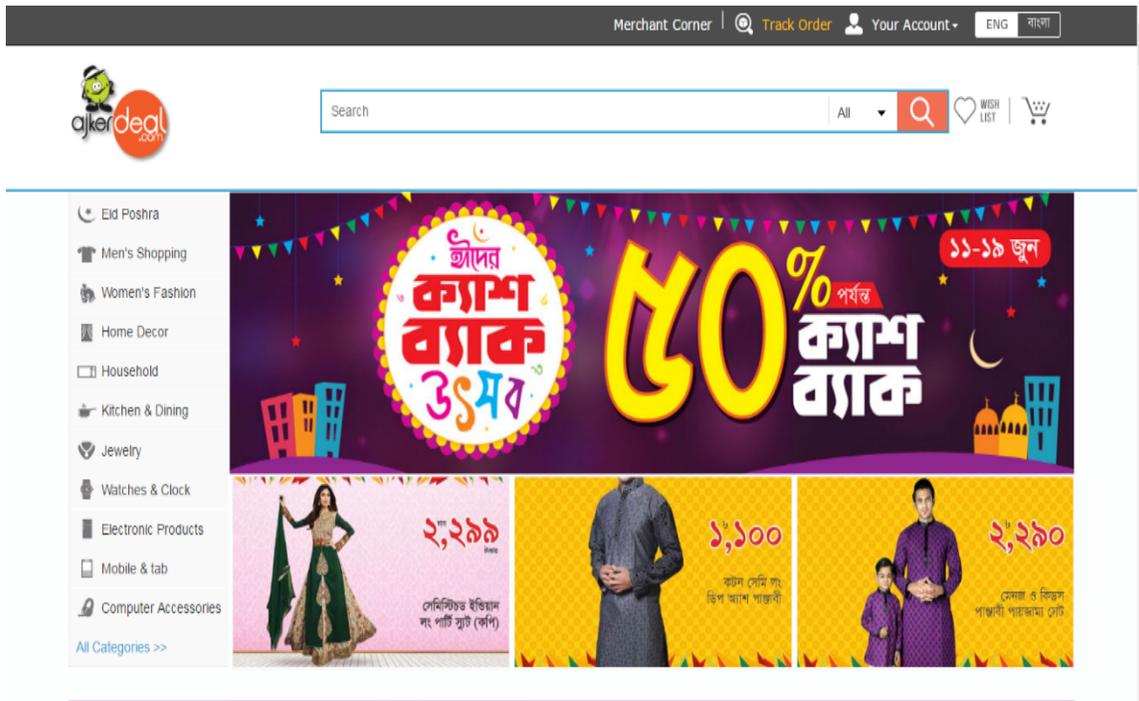


Figure 2.14: AjkerDeal.com

Shadmart.com

Shadmart™ functions 80+ million products with all at high-quality prices. They provide shoppers with a hassle-unfastened and worry-loose worldwide shopping. [20]

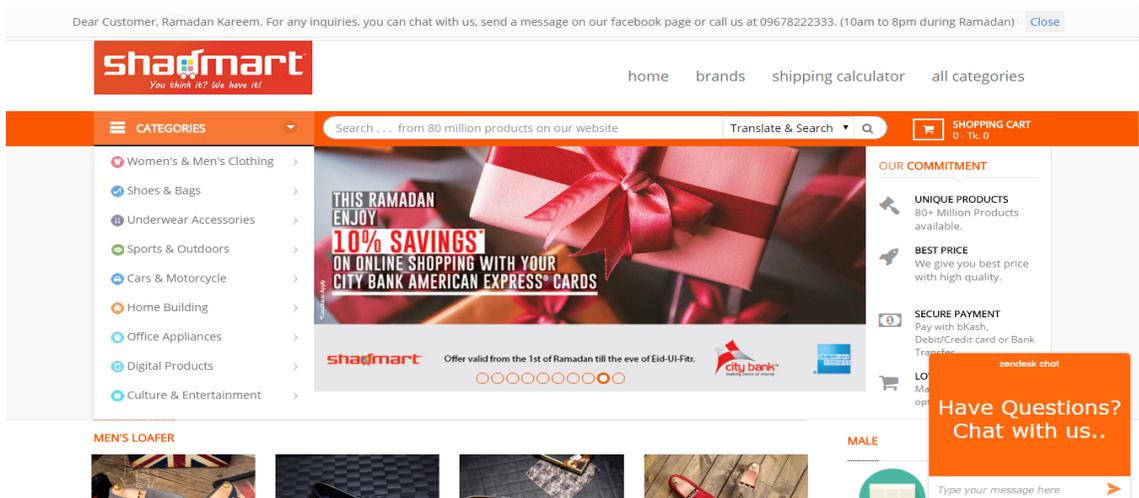


Figure 2.15: Shadmart.com

Flipkart.com

Flipkart.com is India's largest online store. People buy Mobiles, clothes, shoes Electronics, Books, Jewelry, Beauty & personal and many more from online using Flipkart.com^[21]

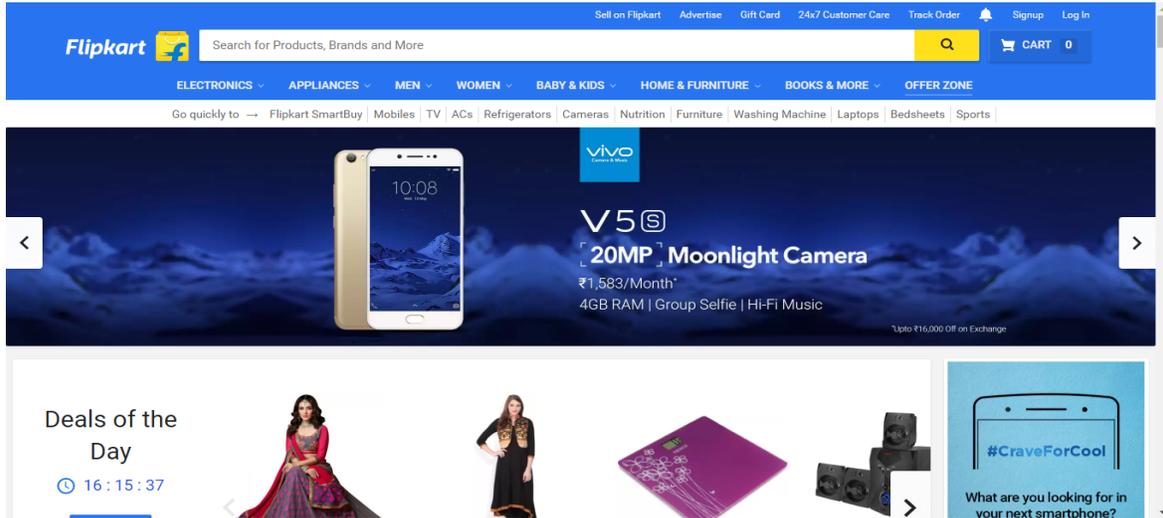


Figure 2.16: Flipkart.com

eBay.com

This is a multinational e-commerce corporation, it is built on online purchaser-to-patron and business-to-patron sales.^[22]

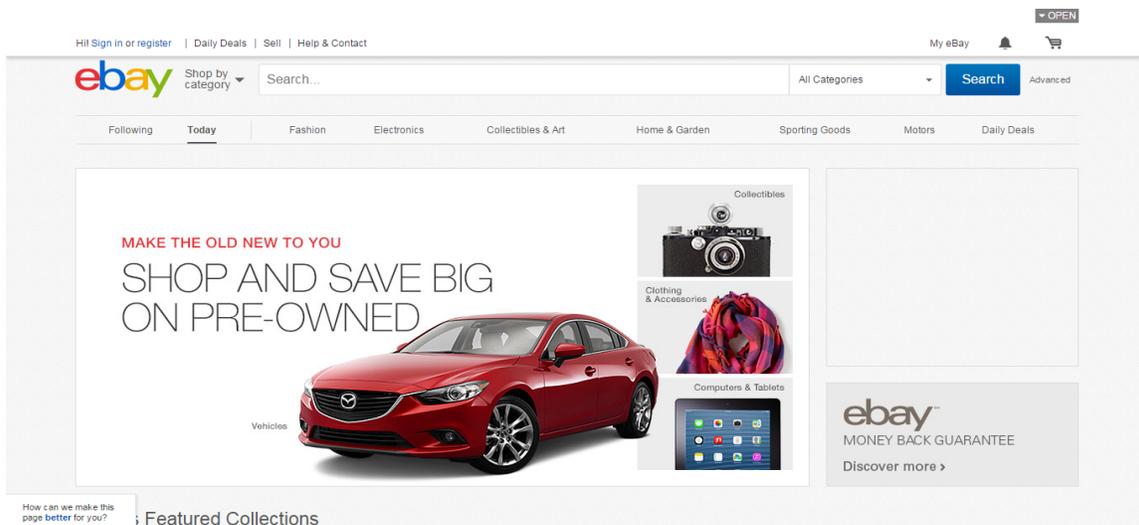


Figure 2.17: eBay.com

2.5 Challenges of the Existing Systems

A greater range of hazards exist with the use of the existing online buying system. The craze of online shopping has selected pretty considerably within the closing years. Besides online sellers are await to enhance their percentage of buying for years to come. There is not any suspect that humans can seek excellent offers on-line and such a lot of different manufacturers that might not be even to be had in ordinary stores, even purchasing malls. ^[23] If the client has never shopped online or maybe if they're an ordinary on-line shopper, they ought to recognize that although all the categories, there are sure hazards of present online shopping. No SMS system to speak with consumers.

- A small number of systems has no similarity chart to match the products.
- Customers are not able to give a response for the item or services.
- Cost of different shipping charges
- Item returning goods
- Sales Tax

CHAPTER 3

PROPOSED SYSTEM

The purpose of this proposed system is to provide a platform for users to get the products interactively. In our proposed system, we provide a dynamic website where customers show any item with full specifications, the picture of the item, and users can compare merchandise. Our proposed system help customer to peer the product records interactively and item comparison enables the users to offer a clear notion of an item so that the consumer can purchase the goods at an affordable price.

3.1 Introduction

This system “Design and Development of an Online Shopping and Customer Relationship Management System” is completely followed dynamic web-primarily based rule. In this system, some internet programming languages, server-facet programming language for developing the back end are used.

3.2 Use Case Diagram

Use case essentially a scenario that describes a “thread of usage” for a system. An essential concept of use case designing is that it helps us design the whole system from the end user's point of view. The most important parts of a use case are actor and user. Actors represent a role people or devices play as the system functions. And the user can play some different rules for a given scenario.

3.2.1 Use Case Diagram of Admin

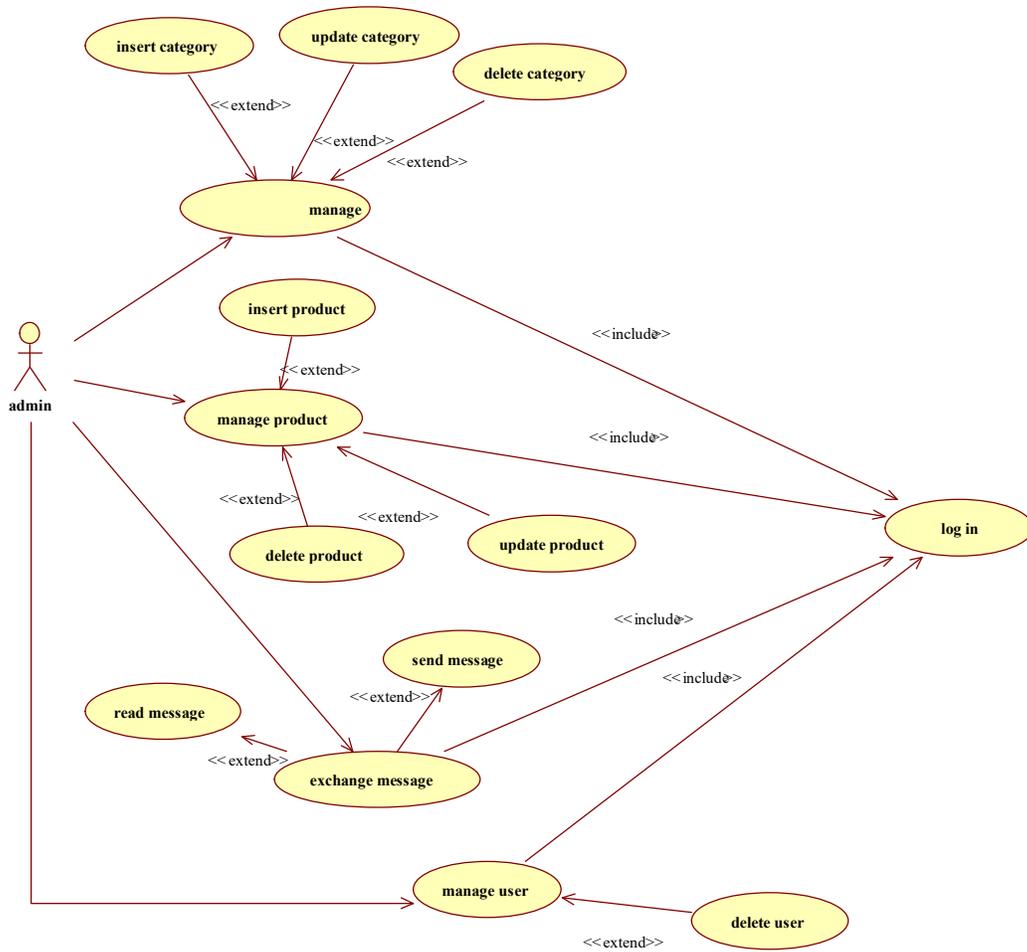


Figure 3.1: Admin Use Case Diagram

Figure 3.1 shows the use case for admin. In this diagram describes one actor that is Admin. This admin can do numerous works. Those works are including Product, delete Product, edit Product, add Category, delete Category, Edit Category, Update Rules, Control User. But for pleasing those venture Admins have to finish greater subtask. Such as in item Admin can do upload item, delete item, and edit item. In Category, Admin can do upload a category, Delete Category, and edit Category, in Control User admin can do delete the user. But for entire, this undertaking admin must have to log in, without login admin can't entire any task. [1]

3.2.2 Use Case Diagram of User

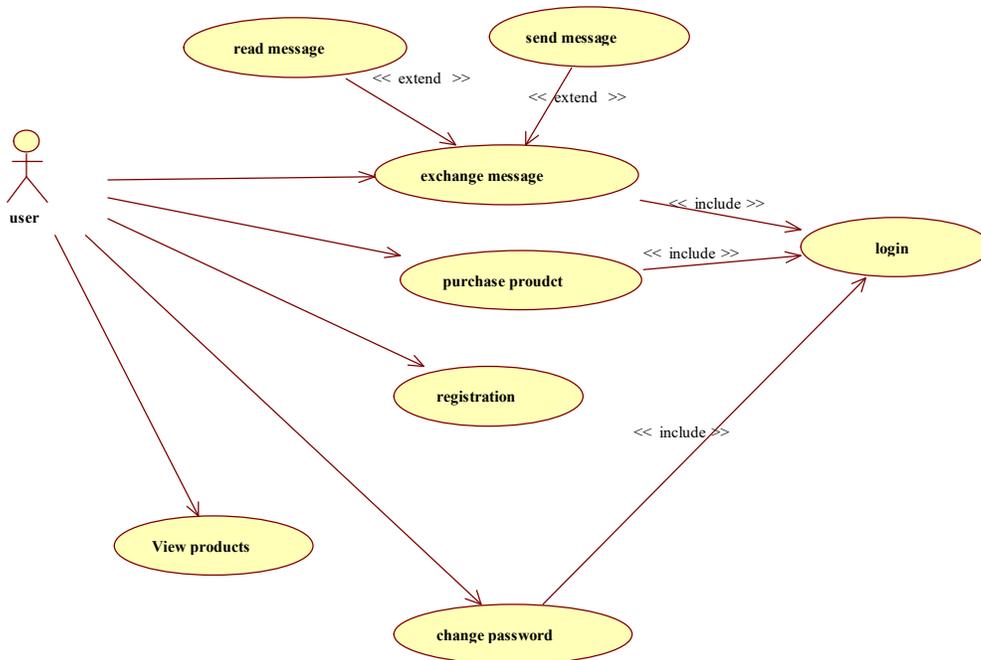


Figure 3.2: User Use Case Diagram

In this use case diagram, any other actor that is User is likewise described. The works of a person are View Product, Purchase Product, Registration, Change Password, Recover Forget Password, and Exchange Message. In Exchange, message Users can do Send Message, Delete Message and Receive a message, in Purchase product users need to log in to his account and then visit pay alternatives for buying products. The thrilling rely is that some venture consumers can whole without login together with View product, Add Product into his cart but can't purchase those products from the cart. ^[1]

3.3 Overview of Database System

The database is a set of reality or records this is saved in a pc system so that a pc program or person the usage of a question language can seek advice from it to reply queries. The pc program used to manipulate and query a database is called a database management gadget (DBMS). Databases are utilized in many applications in one-of-a-kind ways. In this project admin wishes to store loads of statistics. For that reason, MySQL is used for developing a database for this task and preserving different records approximately products. ^[1]

Now, the following discern shows how multiple programs share their information using the Database Management System (DBMS) in Figure 3.3.



Figure 3,3: Sharing data between multiple users

3.4 Entity-Relationship Model

This model is founded totally on a notion of a real-world that includes of a collection of fundamental objects, known as entities and its relationships amongst each object. That is a dating is an affiliation among several entities.

There are 3 simple notations that E-R statistics fashions employ:

- **Entity sets:** a thing or object in the enterprise that is distinguishable from other objects that means all entity sets are unique.
- **Relations set:** An association among several entities.
- **Attributes:** The properties of an attribute are known as attributes. ^[33]

3.5 Entity Relationship Diagram

In this topic introduce the concepts of E-R modeling. An E-R diagram gives graphical representations of the overall logical structure of the database.^[1] Figure 3.4 shows the E-R diagram of the whole system.

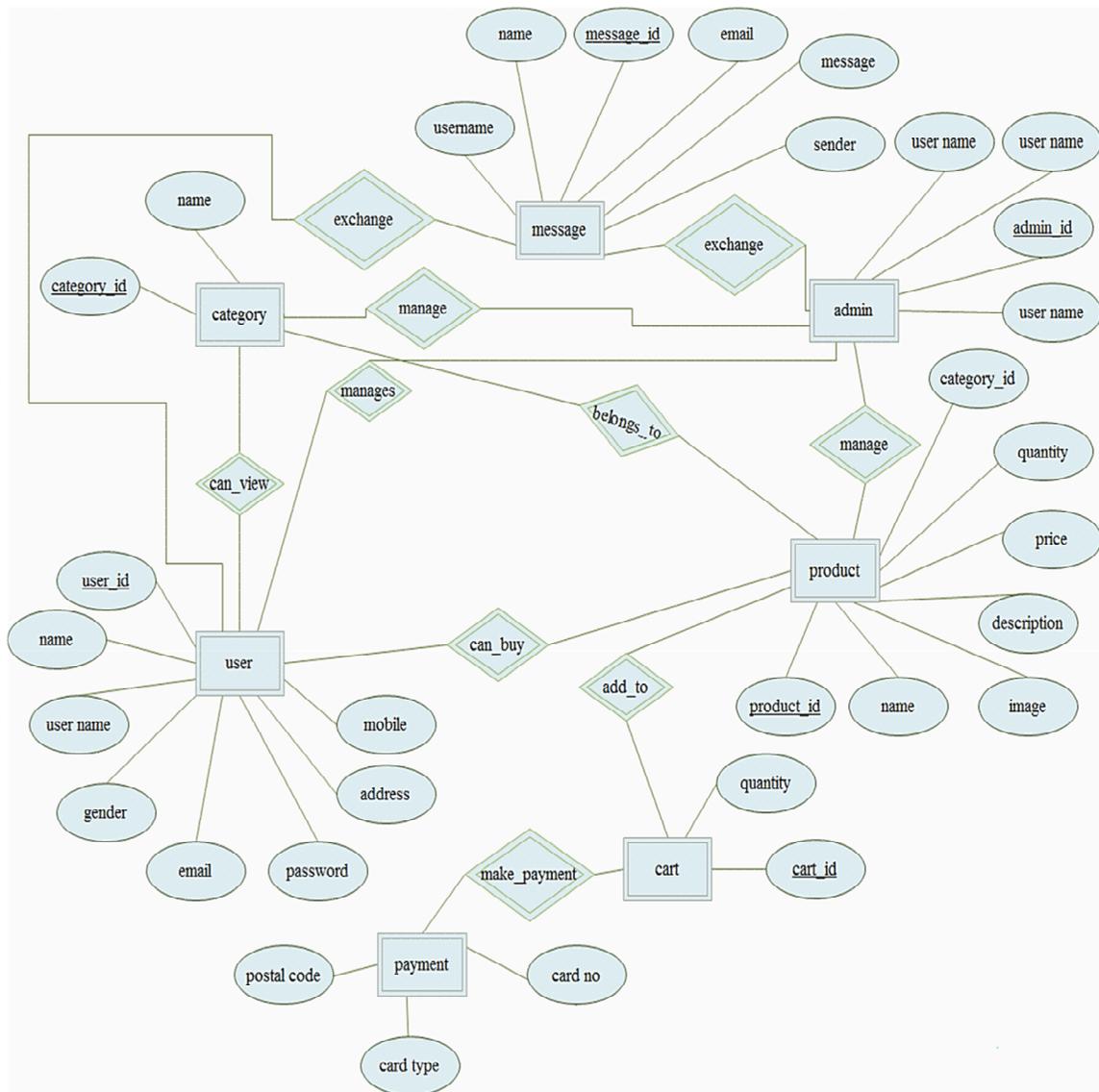


Figure 3.4: E-R Diagram

3.6 Features of the Proposed System

All features of the proposed system are described in the following sub-sections:

3.6.1 Product Display Features:

That approach product-specific view web page features, how user going to display the product to consumers. However, wrapping and displaying is an awful lot more important

in the e-commerce sector. If admin packs a squandering into a clean field and show off properly, that too without problems consume in a brief time.

- Product picture zooming functionality
- More product image
- Product Description
- Technical specifications
- guarantee details

3.6.2 Review & Rating System:

Reviewing and Rating system is the most important factor for any online shop. Because Pricing is the most critical factor of the conversion process. Another important thing is how clients trust an e-commerce or online shopping site. For that reason review and rating system concepts are coming. Positive review and greater rating means product quality is better. Otherwise product quality is bad!. So, this system Showing a few bad evaluate additionally construct good belief with any product.

3.6.3 Wishlist:

If, the system there was not any wish list feature. How clients can able to add a few merchandises for their destiny buying. They easily ignore this device. So, it is an essential feature. On the other hand, this feature not only for the user. This is also important for marketing purposes.

3.6.4 Product Comparison:

A comparison with some products give a better idea of any products. For that reason, This feature is a crucial one because it is a simple approach to compare 2 merchandise in a single window. Then it can capable to get selection without problems.

3.6.5 Guest Checkout and log in with Social Accounts:

No consumer has a few times to sign up in each buying portal. The reason is, they will encounter with n number shop portal. In every site, they cannot able to sign up and get

the right of entry to the account. The majority e-commerce site supports social accounts or google for sign Up. The same time would not pressure the purchaser to signal in before going to test out. The reason is, most humans loved visitor checkout characteristics with an e-commerce portal.

3.6.6 Promotional Offers:

Promotional offers are crucial for an e-commerce portal. Once making one sale with the customer with promotional gives. It allows us to build a higher relationship with the customer. Sending gives at a pageant time or on their unique occasion.

3.6.7 Related Product & Upsell Products:

This feature is more important. The reason is, it gives the best way to convert clients with This is the best manner to convert clients with numerous sales. This feature Showing to a client what product they had checked recently with this device which provides extra attention. And can without difficulty convert into sales.

3.6.8 Social Shares & Blogs:

This feature is an essential segment for e-trade marketing. The way of creating correct content connected to items also progressed items sales.

3.6.9 Order Management:

Order control is applied in both the admin and the front stop for customers. For admin need to agree with the orders into shipping with an easy system. For the front give up, the consumer needs to review their order and its repute cleanly.

3.6.10 Multiple Payment Gateways:

It's the most critical segment in e-commerce shops having more than one charge gateways. If any machine has no longer multiple price gateways, it's going to lose a wide variety of valuable clients. The reason is, many customer consumers choose to use PayPal, stripe, or Pioneer primarily located on their wish.

3.6.11 Shipment Tracking

Using this feature we can show gadgets that can provide clients with an easy manner to music their cargo. When a client adding details to an order, this feature tracked all the orders and send it to the user email. For the quality effect, upload tracking data simply before ‘completing’ an order.

3.6.12 PDF Invoice and Shipping List

It gives way of developing PDF invoices and transport list documents for orders speedy. It generated invoices automatically using a random number. The generated invoice send using the client email.

The main functions are:

- Create PDF invoices and shipping list documents.
- Create shipping list documents
- Customizable invoice number.
- Autoincrement invoice number.
- Automatically created invoice documents.
- crate invoices automatically depending on client order status.
- Generated PDF invoice as an attachment to the email sent to the consumer.
- Customizable invoice template.
- Customizable shipping list template.
- Support to the consumer to download their invoices.

3.6.13 Product Bundles

Bundles are the first-class way to offer offers and unmissable blend of products to customers. Set how many items bundle must have and pick out the unmarried merchandise: they will be showed really in the bundle detail web page and customers may be free to understand the combos have created.

3.6.14 Adding a Shopping Cart

It giving a shopping cart button in the navigation bar. In the cart, customers can:

- View the item they've added to their cart
- Client review the amount of every product

- show the total amount
- provide checkout facilities

3.7 Advantages of Proposed System

Online purchasing, also referred to as e-buying, is shopping that consists of the usage of a computer, modem, browser, and the Internet to locate, examine, select, and pay for products. Numerous agencies promote clients to store online as it keeps worker time, therefore lowering staffing desires and saving money for the company. Such as, some major bus services offer special discounts buying their tickets over the Internet.^[34]

For the customer, Proposed Online Shopping provides numerous different benefits over present Online Shopping methods. All blessings are given below:

- **More product information:** At several online shops, clients can locate elaborated data approximately a wide kind of products, bonuses are not available in regular stores.
- **Ease of comparison shopping:** Online-shopping lets in fast to find corresponding products at equal shop and find the best pleased with the lowest price and with the best item.
- **Convenience:** With online-shopping clients can show products and make orders anytime they want from the privacy and luxury of their home or anywhere.
- **Greater selection:** The reason is, they are not constrained by to be had mantel space, online shops can offer the consumer a nearly unlimited quantity of products.^[35]
- **Availability of all brands at one place:** Online shopping has changed the scenario. One should purchase a world-famed branded gadget using the internet from online shops by way of sitting at his home. Thus, branded objects have come to the human beings in remote regions or underdeveloped towns.
- **Availability of all sizes and models:** In general, branded showrooms are not to be had in small towns and towns. In case if shops are promoting them, they don't have a stock of all the sizes, designs, and fashions that the customer wants to

purchase. But, in the Proposed Online Shopping website humans can access all of the sizes, colorings, and models in keeping with their requirement. ^[36]

3.8 Issues Considered for Designing the Proposed System

A good system is organized and functional. It must load in a brief time and have to be flexible to use. During construction of this gadget most time is spent on planning and designing. While designing the gadget, some troubles get up in mind. The issues are given below:

- Is the product information reliable and error-free?
- Does the product information store correctly?
- Is the application user friendly and fast?
- Does the user get or enter information in the easiest way? ^[1]

CHAPTER 4

SYSTEM DEVELOPMENT TOOLS

Computer systems are complicated and often connect with many common structures potentially furnished by special software retailers. To overcome this type of complexity numerous SDLC models have been created, for example the statistics flow model, waterfall model, spiral model, agile software development, fast prototyping model, incremental model. So, SDLC gives lots of support for any software retailers and it also helps in mission management.

4.1 System Development Life Cycle (SDLC)

Inside a software organization, SDLC is a technique accompanied by a software program project. It includes an in-depth plan that explains the way to develop software, maintain software, how to update software and regulate or decorate unique software. SDLC life cycle shows how to improve the fine of software program and it gives a technique for the general development procedure.^[7]

Figure4.1 shows all the steps of typical SDLC.



Figure 4.1: System Development Life Cycle

A standard SDLC include of the following stages:

1. **Planning and Requirement determination**
2. **identifying Requirements**
3. **system Architecture Design**
4. **Implementation of system**
5. **Testing the system**
6. **Deployment in the Market and modification of system**^[7]

4.1.1 Planning and Requirement determination

Determine the Requirement of a system is the most important and fundamental level in SDLC. All of the requirements a system is achieved with many techniques. For example, literature review and producer and forms, on-site observation, and interviews and questionnaires.^[7]

Planning for the excellent guarantee requirements and identification of the dangers related to the assignment is also done within the degree of the making plans. A better of a system gives a better view of risk. Planning gives a technical feasibility for that reason system analysis give risk analysis and benefit analysis opportunity^[7]

4.1.2 identifying Requirements

In this stage, necessity analysis is completed, For that reason, it determines the next step and record the client's necessities and achieved them accredited from the client or the marketplace analysts. It can be done by an SRS (Software Requirement Specification) file that responds to all the merchandise essential to be intended and it developed within the course of the mission lifestyle cycle. [7]

4.1.3 system Architecture Design

In this stage, SRS architects to pop out with the first-class architecture for the system to be developed. Usually, a couple of layout technique for the item structure is proposed and documented in a DDS - Design Document Specification^[7]

A layout technique virtually shows all the architectural modules of the system alongside its conversation and records go with the flow illustration with the external and third birthday party modules. ^[7]

4.1.4 Implementation of system

In this section, the actual improvement begins and the system is made. All of the programming code is created as in line with DDS in the course of this level. If the design is carried out in a detailed and prepared manner, all created code can be executed without a good deal hassle. ^[7]

Developers should observe the coding pointers defined via their company and programming tools like compilers, interpreters, debuggers, etc. High-level programming languages like C, C++, Java, and Python are used for coding. And language is chosen with an appreciation for the sort of software program being developed. ^[7]

4.1.5 Testing the system

The testing section, consisting of two parts. The first part is the test strategy and the second part is the test plan. The first part provides information about the various levels, methods, tools, and techniques used for testing the system. The second part provides a plan for testing the system and it verifies that the system under testing fulfills all the design.^[7]

4.1.6 Deployment in the Market and modification of system

Once the product is examined and equipped to be deployed it's far launched formally in the best market. Sometimes product deployment happens in degrees as according to the business strategy of that organization. The product may additionally first be released in a limited segment and tested in the real enterprise environment (UAT- User attractiveness testing).

Then based totally on the feedback, the product can be launched as it is or with recommended enhancements within the focused-on market section. After the product is launched inside the market, its protection is achieved for the present client base. ^[7]

4.2 Methodology

Online purchasing and consumer dating management gadget undertaking is done over the following measure:

First of all, it investigates the exiting system of e-shopping processes then it identifies the problem and limitation. The next step is Requirements analysis of the new system and based on the requirement, designing a database schema.

The gadget evaluation is a detailed take a look at the numerous operations carried out by using the existing machine and their relationships within and outside of the machine. One thing of the analysis is defining the bounds of the system and determining whether or no longer a candidate machine ought to don't forget other associated systems. ^[8]

Here the key question is, do all issues exist within the present machine? What has to be done to resolve the problem? The analysis starts evolved when a consumer or a manager starts a take a look at the program the usage of the existing system. Within analysis, facts collection of the numerous files, selection points, and transactions dealt with by way of the present system. The typically used tools in the system are Data Flow Diagram (DFD), interviews, etc.

In this gadget, the records of approximately products are taken from different sources. The goal of gathering input data is to make facts entry as easy, logical, and loose from mistakes as viable and these records are user-originated inputs to a computer-primarily based format. Computer output is the most critical and direct supply of statistics to the consumer. Efficient and intelligible output design need to enhance the gadget

relationships with the person and help in selection making. All the information is stored within the database. The facts like person name, password, address, email, etc. Taken from the person and stored within the database. The admin stores the product name, price, quantity, etc. ^[8]

The proposed gadget should be examined completely according to their needs. System evaluation may be classified into five sections:

- 1. System planning and initial investigation**
- 2. Information gathering**
- 3. Applying analysis tools for structured analysis**
- 4. Feasibility study**
- 5. Cost-benefit analysis ^[3]**

4.2.1 System Planning and Initial Investigation

This is the initial stage of the System Development Life Cycle (SDLC) and is referred to as the identification of want. It is the person's request to alternate, enhance, or beautify an existing gadget. The goal is to decide whether the request is legitimate or feasible. The consumer request identifies the need for exchange and authorizes the preliminary investigation. ^[4]

4.2.2 Information Gathering

A method should be developed by using the analyst to gather statistics. The approach includes finding data resources, developing a method of getting information from the identified sources, and the use of an information flow version of the agency. Information can be amassed via interviewing top-stage management, middle-degree management, and operational staff. On the other hand, interview organization discussions also help the analyst to gather records. It isn't always feasible to acquire all information in an unmarried interview, more than one interview is as a consequence required. ^[5]

4.2.3 Applying Analysis Tools for Structured Analysis

Structured Analysis and Design Technique (SADT) is used for describing structures as a hierarchy of functions, which helps people to explain and recognize structures and

represent entities and sports, and quite a few arrows to narrate bins. These packing containers and arrows have an associated informal semantics. SADT may be used as a functional analysis device of a given system, the usage of successive degrees in detail. [7]

4.2.4 Expediency Study

Expediency takes a glance at is an analysis of how aptly a venture is also completed, accounting for factors that affect it inclusive of economic, technological, felony, and scheduling factors. Project managers use feasibility studies to choose the potential fantastic and negative results of a challenge ahead of investing a substantial amount of your time and money into it [8] practically takes a glance at evaluates the undertaking's capability for success; therefore, perceived objectivity could be a vital consider the credibility of the examiner for capacity investors and lending institutions

4.2.5 Cost-Benefit Analysis

A cost-benefit analysis is a manner with the compensation of which business choices are evaluated. The grace of a given direction or business-related operations is summed, after which the charges related to taking that motion are subtracted. [9]

4.3 Project Specification

To complete the full mission, there wishes each the hardware as well as the software specifications. Those are explained in the following sections.

4.3.1 Hardware Specification

Computer hardware specs are technical descriptions of the computer's additives and capabilities. Processor velocity, model, and manufacturer. The processor pace is generally indicated in gigahertz (GHz). The better the number, the faster the laptop. Random Access Memory (RAM), is usually indicated in gigabytes (GB). The greater RAM in a pc the extra it can do simultaneously. Hard disk (sometimes called ROM) space. This is usually indicated in gigabytes (GB) and refers commonly to the amount of facts (like documents, track, and other data) the computer can hold.

4.3.1.1 Server Side:

On server side required processor is core i3 or above and required RAM is 2GB or above and Required hard disk is 20GB.

4.3.1.2 Client-Side:

On client-side required processor is Pentium-IV or above and required RAM is 512MB or above and required har disk is 80GB.

4.3.2 Software Specification

Software builds on the operating system(OS). It required any os such as WINDOWS 7 or higher. And required IDE is Adobe Dreamweaver CS6, Wamp Server. For designing part it required HTML5, CSS, JQuery, JavaScript. And MySQL for database. PHP used to connect the database and designing part.

4.3.2.1 HTML5

It is the 5th version of HTML. HTML is a Hypertext Markup Language. Tim Berners-Lee developed it in 1990. HTML is used as the structure and presentation for the WWW(World Wide Web) contents. More clearly HTML is used in front end of any kind of web content. It is used to build the basic structure of a web page. HTML5 was released in 2014. In this version `<meta charset="UTF-8">` is used for character encoding. In HTML5, as well as other versions, each statement starts with a starting tag and ends with a closing tag. Each tag has a basic format; `<tag_name>`. Only difference of starting tag and closing tag is a '/' character. The format of closing tag is `</tag_name>`. If the first line contains "`<!doctype html>`" it defines that the contents of the document of the page is written in HTML5. The `<html>` tag are the root of an page. And its also contains `<head>`, `<body>`, and `<title>`tags. The `<head>` tag is used for displaying all the links and metadata. The `<body>` tag are used for visible al the page content. Using the `<title>` tag , developer shows the page title. Though a missive change, in internet, has been observed for last

couple of decades, till now HTML is considered an essential language, specially when it comes the term of web development.

4.3.2.2 CSS

CSS means Cascading Style Sheet. It is used for formatting the layout of a webpage. More clearly it describes the presentation of web pages. CSS in 1994. At the same year its first version was released. It is mainly used for defining style of text, size of desk and many other factors of a web page. Web builders can create a uniform look for numerous pages of a web site using CSS. And they do not need to define the style for every desk and block of content. CSS is getting popular day by day. It's much easier to maintain and update. It has lightweight code. It also allows search engine optimization. With these features, it's much easier and comfortable to work with CSS. ^[25]

4.3.2.3 JavaScript

JavaScript is a lightweight dynamic programming language. It is used for web development. Initially it was named as LiveScript. But later its name was changed to JavaScript by Netscape. It was first introduced in 1995 as LiveScript. The most common form of the language is the client-side JavaScript. The main advantage of JavaScript is it does not interact much with server. Which means there is a less chance of server traffic. Besides it increases interaction between web page and user. Users can open a page just hovering the mouse cursor on a page link. It also allows other important features like drag and drop, slides etc. But there are some drawbacks of JavaScript. File reading and writing is restricted in client-side. It cannot be used in networking applications. Another important drawback is it does not allow multiprocessor capabilities.

4.3.2.4 jQuery

jQuery is a library of JavaScript which is used in web development. It is a lightweight Document Object Model library. Initial version of jQuery was released in 2006. It is an open source library. It allows to use methods in JavaScript which allows developers to use that segment of code multiple times just calling that method with a single line of code. It is also easy to debug a single function body instead of debugging the same portion of code multiple times. Using jQuery library, developers can use HTML manipulation,

CSS manipulation, effects and animations etc. Day by day it is becoming the most popular among other JavaScript libraries which are used for web development. Google, Microsoft, IBM, Netflix use jQuery in their websites. A study said that in February 2020, 74.4 of top 10 million websites uses jQuery which is really a huge amount.

4.3.2.5 MySQL

MySQL is a Relational Database Management System. It is an open source software. Structured Query Language is used in MySQL. It is written in C and C++. MySQL AB, a swedish company, created MySQL. The latest version of MySQL is 8.0 which was released in April 2018. It is popular for working with database. People can easily use this. And easy to understand. The security level in MySQL is high. So, while working with it, the sensitive data remains protected. It also gives a huge space for large data. Around 50 million rows can be handled with MySQL. And it is faster. Another interesting feature is, it allows roll-back. So, working with MySQL is easy and comfortable. ^[31]

4.3.2.6 PHP

PHP is a popular general purpose scripting language. In 1994, Rasmus Lerdorf first introduced PHP to the world. Currently in 2020, PHP version is being used which was released in November 2019. Initially PHP referred to Personal Home Page. But later it refers to Hypertext Preprocessor. To process PHP code, a web server is needed where php interpreter does the job. Though PHP is basically used in web development, it can also be used for command line scripting and client side graphical user interface application. PHP is suitable in many operating systems and platforms. A study said that in January 2013 developers used PHP in more than 240 million websites and PHP was found in around 2.1 million web servers. The popularity of PHP is increasing day by day. ^[32]

CHAPTER 5

DESIGN AND IMPLEMENTATION

Online shopping attempts to embellish get right of entry to worry and develop with the constancy and expertise of services. Noticing on the precise placing and locale, case admin is accountable for the diversity of requirements, ranging from connecting customers to services to supplying in-depth shopping and delivering services. This gadget also presents protection with the usage of user-id and Password, so any unauthenticated customers cannot use another clients' account. Only authenticated users will have proper access to buy for merchandise from the web site.

5.1 Introduction

In present-day society, e-shopping has arranged for the fast-paced lifestyle, making clients enjoy the opportunity of selecting and purchased their preferred item at home. This System is founded on CMS Platform and adopts PHP, MySQL, and other related technologies. In this system there are two parts such as foreground and background. The foreground part is responsible for some features such as user registration, user login, checking and purchases product, add a product to user cart, private order management, review on a product, and personal records management, etc. The other part that means background part are responsible for some feature such as the administrator login, product management, product class management, client order management, the news and records management, and so on. When published, this gadget might be dynamic and interactive and turn out to be an internet shopping gadget that is operated easily and has many features.^[37]

5.2 Model Selection from Different Software Process Models

There are numerous software technique models to increase or put into effect of any device. From all the system, Incremental Process Model is used to put in force this software

5.2.1 Incremental Process Model

This is the version that connects elements of linear and parallel conduct flows. The incremental process model covers to linear development in an exceedingly reel style as daily time improvement. Every linear development can be pulled out “increments” of the software in an exceedingly manner that's very uniform to the increments involved through a mutative technique flow.^[38]

5.2.2 Advantages of Incremental Process Model

Some advantages of this model are the given below:

- The number of working functionality can be developed quickly.
- More flexible- its support changing requirements
- Less costly to change the requirement
- Easier to manage risk- major-risk part can be done in the first iteration
- Each iteration, functional product would be delivered.^[38]

5.3 Model Selection from Different E-commerce Models

There are several e-commerce models to increase or put into effect of any gadget. From all the fashions, the B2B and B2C fashions are utilized in this system.

Using the B2B commercial enterprise version sells its merchandise to a median client who then supplies the item to the end consumers. For example, a dealer location an order from an e-commerce website, and after getting the order then it supplies the item to the very last patron who comes to purchase the item at one in all its end shop.

In this device, admin offers each the wholesaling system with the retailing purchasing gadget to the clients.

5.4 Development of the System

The goal of the interface layout is to provide a detailed view of the interface. First of all, a cartoon diagram of the overall process is prepared. Then, divide the entire paintings into different parts to make it simple and easy. After that, select the perfect platform consist of language and database servers. Finally, design and advanced the utility device.

People can view online buying portal and be had merchandise, however, each user has to log in via their Username and password if you want to buy or place an order products. Unregistered individuals can sign up through navigating to the sign-up page. The main function modules of the gadget are divided into two parts. The first part is the frontend desk characteristic module and the second part is the backend characteristic module: the first part is provided to the customers consisting of travelers and login customers with distinct permissions and the second part is operated via the gadget administrator.

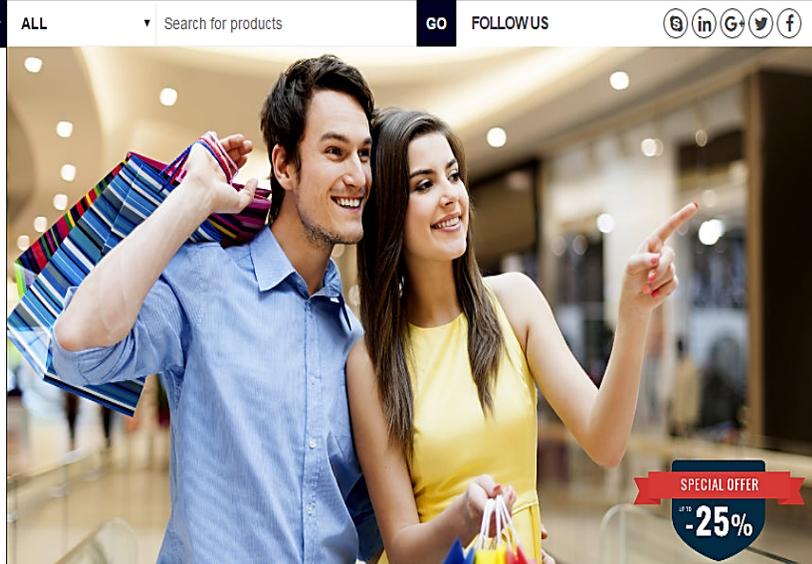
5.4.1 User Section

Online clients should have gotten the right of entry to the Internet and a proper technique of price to finish an operation. Usually, better levels of education and private income agree to better positive ideas of purchasing online. Greater publicity to era also rise the opportunity of growing friendly behavior in the direction of new shopping channels.^[1]

Homepage, this page consist of all product. If all products are not available to show, it shows all product categories.



- SHOP BY CATEGORY
- Men's Clothing
- Women's Clothing
- Kid's Clothing
- Men's Shoes
- Women's Shoes
- Jewelry
- Watches
- Lifestyle Accessories
- Handycrafts
- Electronics



Our Categories

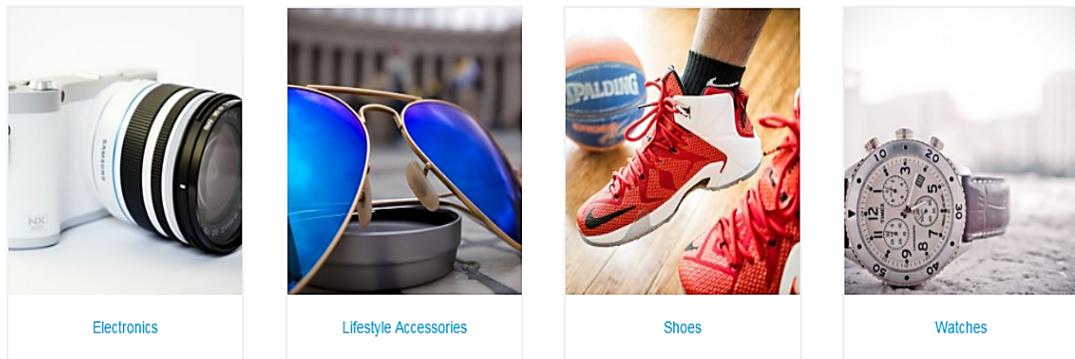


Figure 5.1: Homepage

User Login, using this a user will be authenticated. Users press the login button and give user id and password. If id and password will match then system marks as a valid user.

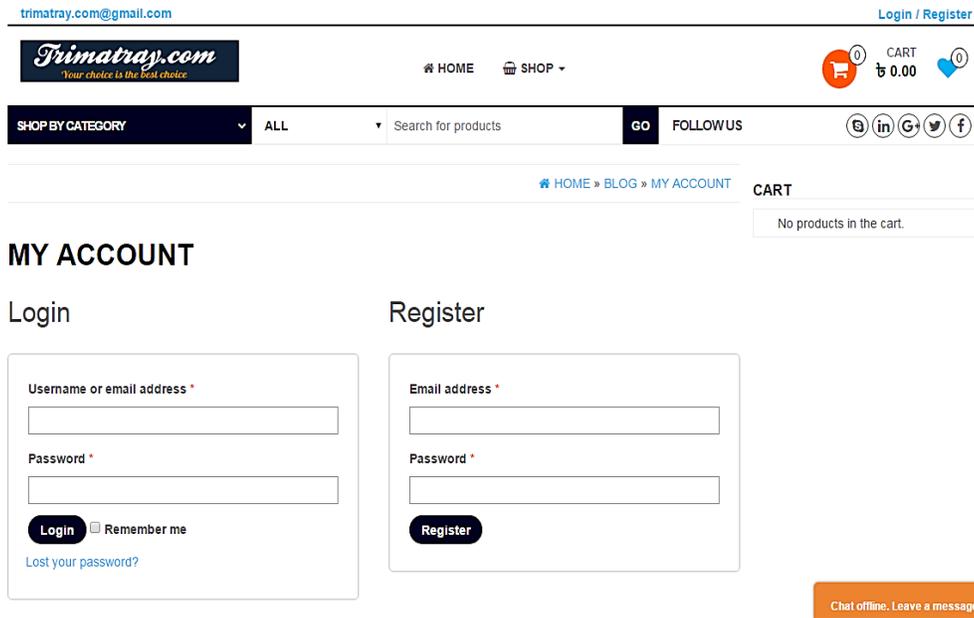


Figure 5.2: User Login

User Account Section, from the account dashboard the registered user can view their recent orders and edit all basic requirements.

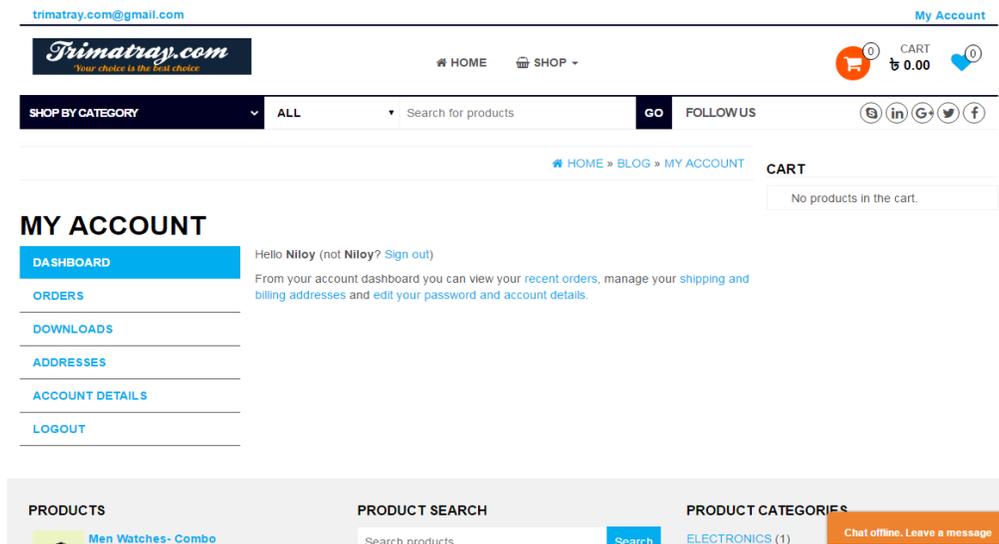


Figure 5.3: User Account Section

Product Page, this is a page, that the just the same for visitors and users.

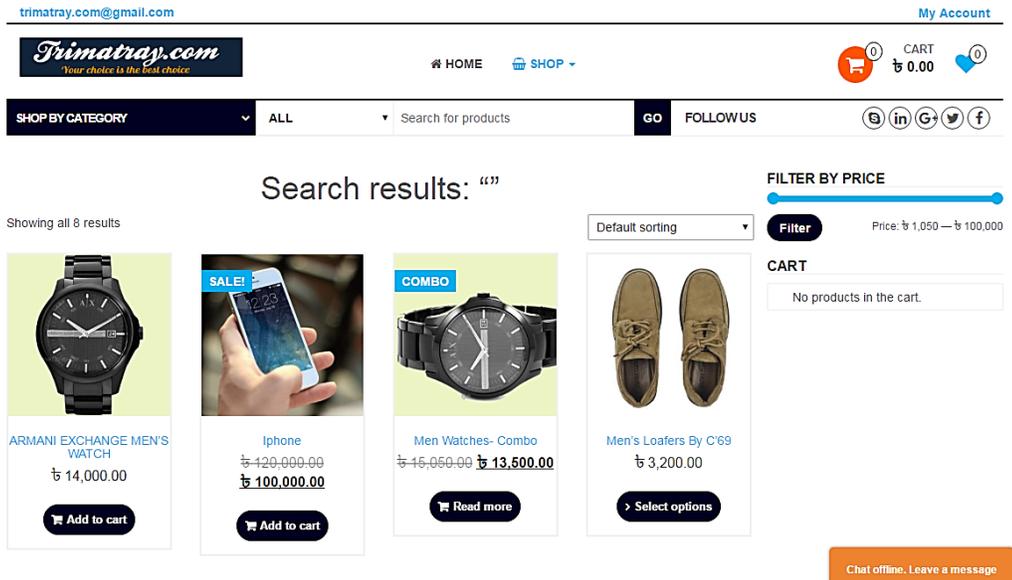


Figure 5.4: Product Page

Product Details Page, it includes all of the product details.



Figure 5.5: Product Details Page

Add to Cart, when a product choose by a user then the user will add this product using add to cart button.user also remove from cart (if required).

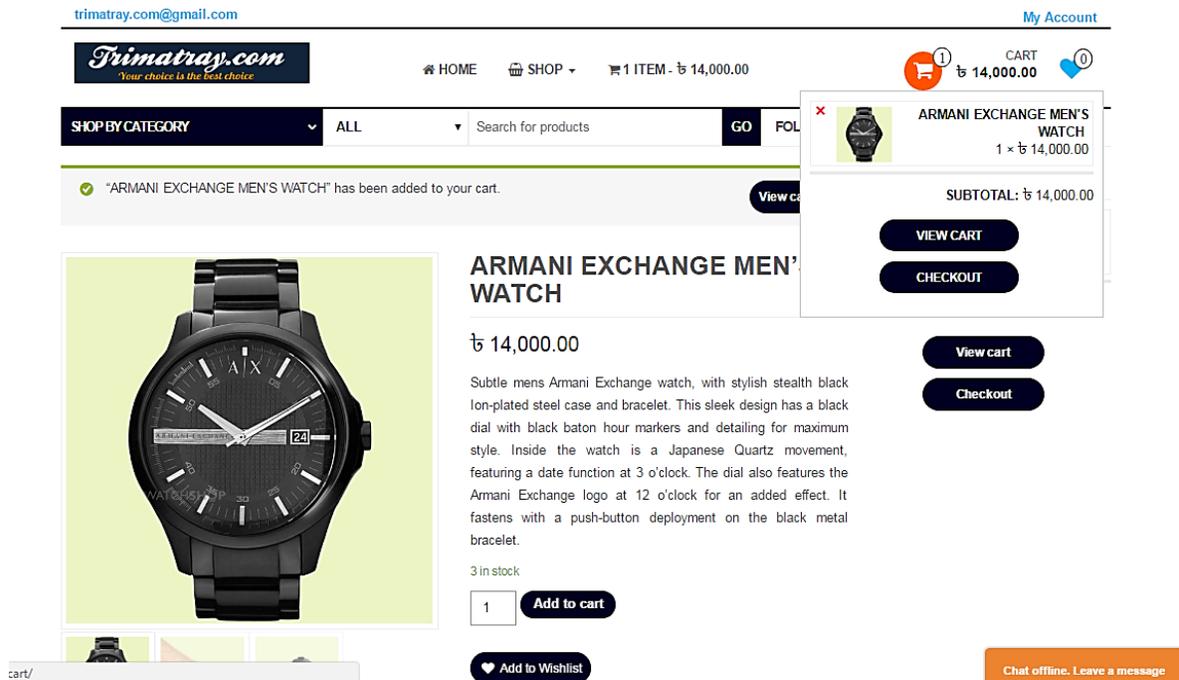


Figure 5.6: Add to Cart

View Cart, only the user can show the cart, moreover, the user could edit the cart.

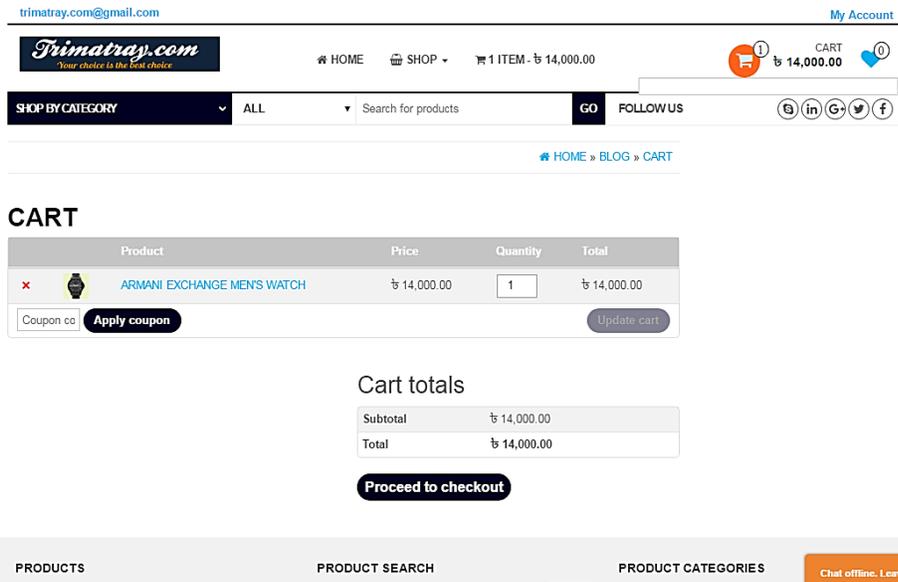


Figure 5.7: View Cart

Checkout, after confirming all of the necessary information on orders then user checkout that means the user cart will be empty.

trimatray.com@gmail.com My Account



Your choice is the best choice

[HOME](#) [SHOP](#) 1 ITEM - ₳ 14,000.00

 1 [CART](#)  0
₳ 14,000.00

[SHOP BY CATEGORY](#) ALL Search for products [GO](#) [FOLLOW US](#)



[HOME](#) » [BLOG](#) » [CHECKOUT](#)

CHECKOUT

Have a coupon? [Click here to enter your code](#)

Billing details

First name *

Last name *

Company name

Country *

Address *

Town / City *

District *

Postcode / ZIP

Phone *

Email address *

Additional information

Order notes

Notes about your order, e.g. special notes for delivery.

Chat offline. Leave a message

Your order

Product	Total
ARMANI EXCHANGE MEN'S WATCH × 1	₳ 14,000.00
Subtotal	₳ 14,000.00
Total	₳ 14,000.00

Figure 5.8: Checkout

Payment Gateway System is a client flexible service. Because the client done his payment in many ways such as direct bank transfer, cash on delivery, or bKash payment.

Your order

Product	Total
ARMANI EXCHANGE MEN'S WATCH × 1	₹ 14,000.00
Subtotal	₹ 14,000.00
Total	₹ 14,000.00

 Direct bank transfer

 Check payments

Cash on delivery

bKash Payment 

Send your payment directly to +8801723791149 via bKash. Please use your Order ID as the payment reference. Your order won't be shipped until the funds have cleared in our account.

Place order

Figure 5.9: Payment Gateway System

Invoice Gateway, A client order divided into many stages like On Hold, Processing or Completed and all of the stages can be chosen from the gateway settings panel. The selected order status will be applied to all orders processed via the invoice payment gateway and the corresponding status order emails will be sent after checkout.

CHECKOUT

Thank you. Your order has been received.

ORDER NUMBER: 384	DATE: June 19, 2017	TOTAL: ₳ 14,000.00	PAYMENT METHOD: bKash Payment
----------------------	------------------------	-----------------------	----------------------------------

Order details

Product	Total
ARMANI EXCHANGE MEN'S WATCH × 1	₳ 14,000.00
Subtotal:	₳ 14,000.00
Payment method:	bKash Payment
Total:	₳ 14,000.00

Transaction ID: *

Please enter your transaction ID from the bKash payment to confirm the order.

Confirm Payment

Customer details

Email:	me002.hub@gmail.com
Phone:	01677100091

Billing address

Niloy Saha
niloniloy.com
Dhaka, Bangladesh
Shymoli
Dhaka
1500

Print

Figure 5.10: Invoice Gateway

5.4.2 Administrator Section

The administrator is the main user of this System. The reason is, an administrator has all the information about all the users and all products.

Administrator Login, only the owner of the shop have access to this admin page.

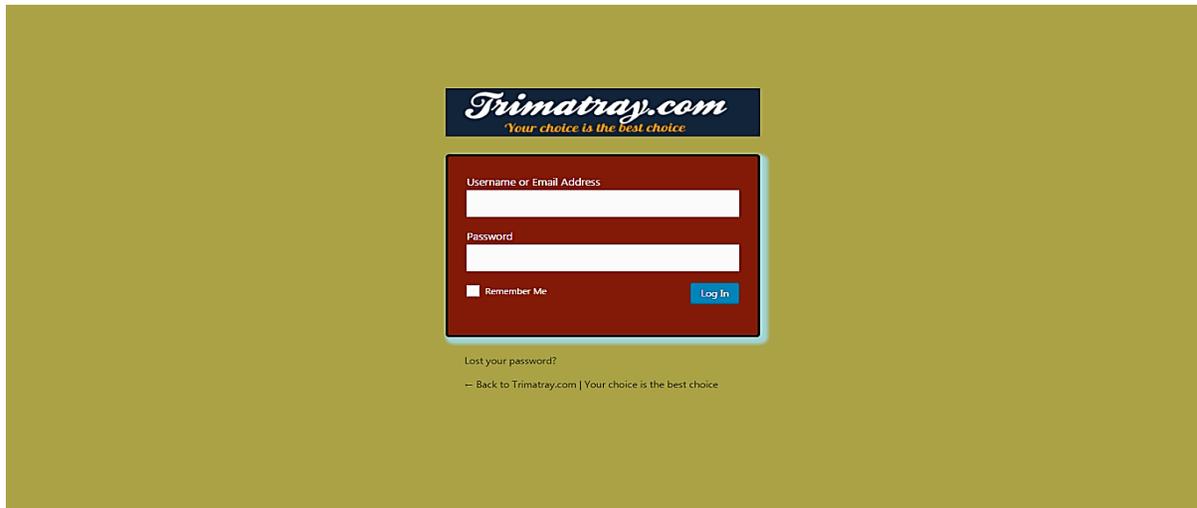


Figure 5.11: Administrator Login

Dashboard gives at-a-glance views of KPIs (key performance indicators)

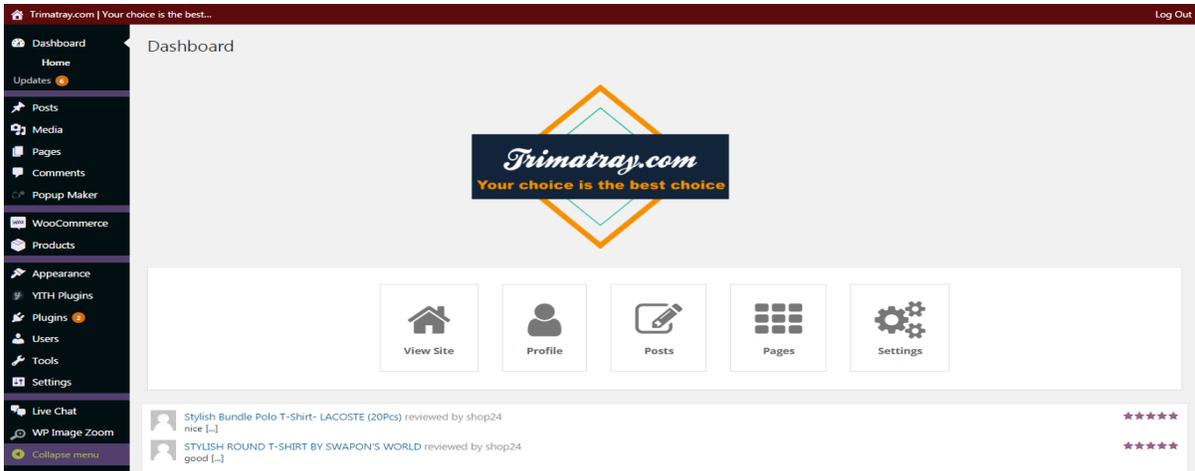


Figure 5.12: Dashboard

Add Products, Admin can add new items into the system. **Delete Products**, admin can delete the items **Update Products**, Admin can also update particular items.

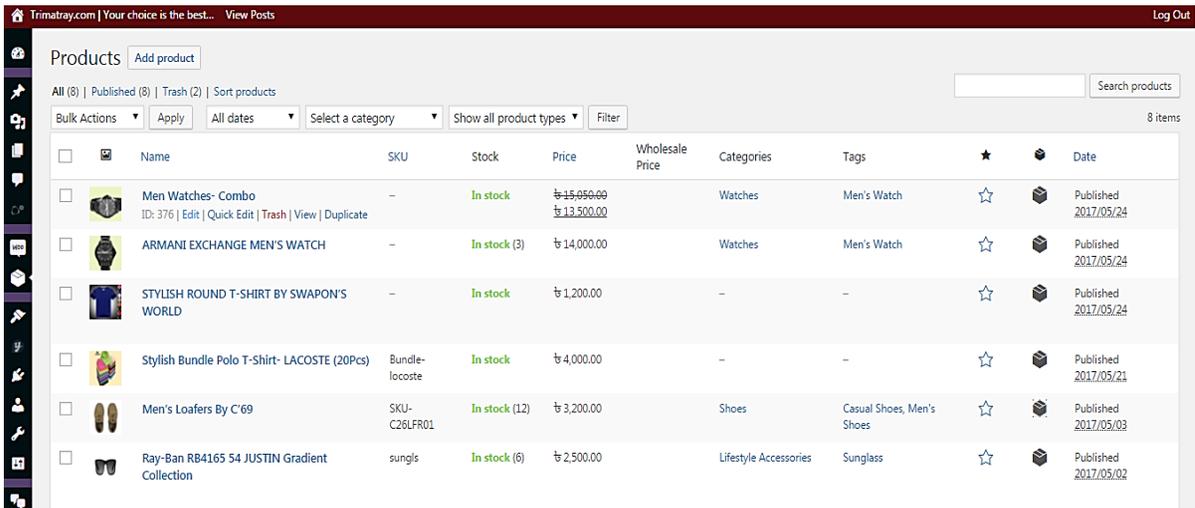


Figure 5.13: Add, Delete, Update Products

Product Categories for my store can be managed here.

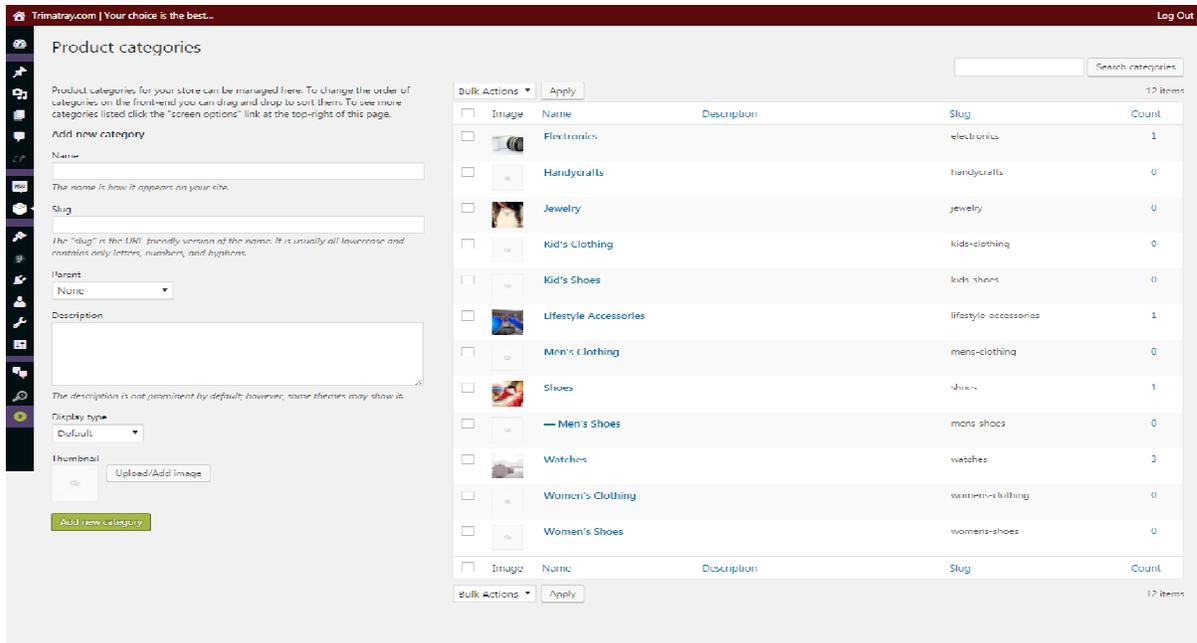


Figure 5.14: Product Categories

Product Order, it shows who will order the products and how many products will orders.

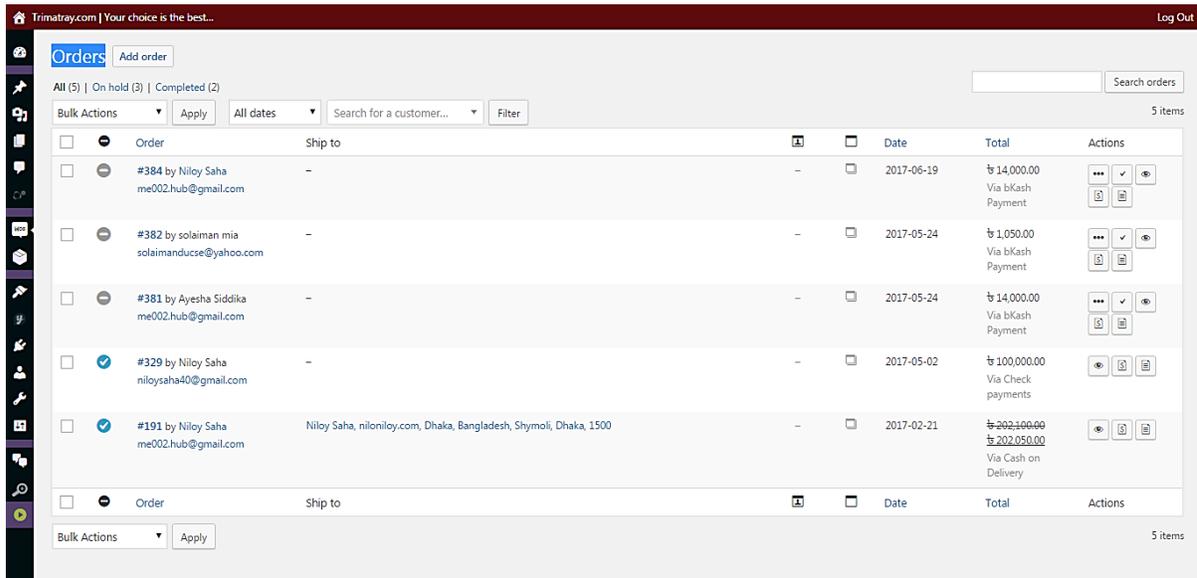


Figure 5.15: Product Orders

CHAPTER 6

COMPARATIVE STUDY

Project assessment is one major technique for assessing mission performance according to a given set of criteria/assessment problems and, thereby, for assessing venture management. ^[41]

From task evaluation, humans can acquire a comparative examination with the other systems.

6.1 Introduction

A clear division of roles and liability for undertaking reviews is a vital detail in ensuring the integrity of the assessment technique to make sure the best degree of independence and credibility of critiques. Although they'll now not be consulted for the duration of the process, the project supervisor nor any of the administrative or technical returned stoppers have to convey out internal and independent project evaluations. ^[39]

Evaluation is a regular and targeted measurement of an ongoing or finished mission, its design, implementation, and results. The main goal is, the achievement of objectives, capability, validity, effect, and stability. ^[40]

6.2 Comparative Study

This segment describes the differences between the present systems and the proposed device inclusive of follows:

- **Existing System 1 (www.chaldal.com):** Here people can buy almost every grocery product. Here human beings can get clean offers and discounts, mega deals, event-based deals/offers, coupons, and many other offers which will attract a customer to buying from Chaldal. The main drawback of Chaldal is that the service isn't on top of things in villages when as compared to the city areas. People from anywhere cannot purchase merchandise besides Dhaka, Bangladesh. ^[19]

- **Existing System 2** (www.ajkerdeal.com): Ajker Deal capabilities a day by day deal at an unbeatable charge on the satisfactory stuff to make the nice shopping decisions. This is a deal and discount internet site in which the buyer can discover all the appealing discount gives, unique deal of the united states of America in a single place.^[20]
- **Existing System 3** (www.shadmart.com): Shadmart is an e-trade corporation that capabilities millions of merchandise, i.E. Clothes, shoes, bags, electronic items, and lots more, with all at extremely good fees. It gives clients a hassle-unfastened and worry-unfastened global shopping enjoy from buying to transport.^[21]
- **Existing System 4** (www.flipkart.com) Using this e-shop, consumers can buy almost everything such as books, toys, baby care, belts, watches, television, cell phones to refrigerators, and so on. This shop gives |discounts, coupons, and many other offers to the consumer. A survey result shows that,66% of consumers prefer this e-shop. Otherwise, 60% of consumers people feel this e-shop is the best buying shop. A disadvantage of this e-shop is the service is not the same in villages when in comparison to the city areas.^[22]
- **Existing System 5**(www.ebay.com): This is a multinational e-commerce corporation, it is built on online purchaser-to-patron and business-to-patron sales. The corporation manages this e-shop an internet sale and purchasing website in which people and corporations purchase and sold a broad type of items and services worldwide.^[23]
- **Proposed System** (www.trimatray.com): This is an internet purchasing center. Now it's far supported simplest the apparel sector. Now the available collections are (T-shirt, Polos t-shirt, Saree, Panjabi). This device supported all garb products customize facilities without saree. If customers want any merchandise for customizing then they can contract inside 15 days, and their very own design sent in admins mail or Facebook message. This gadget ensures excellent quality. The product costs are reasonable charges. This machine ensures product shipping inside 72 Hours (3 days). The product delivery is only 80 to all regions in Bangladesh.^[42]

After analyzing the existing structures and proposed system, there are a few differences between them that have been clean with a tabular form based totally on some overall performance criteria. Table 6.1 shows the evaluation of the overall performance of existing systems and the proposed system.

Table 6.1: Comparative study on Existing Systems and Proposed System.

Systems Features	chaldal.com	ajkerdeal.com	shadmart.com	flipcart.com	ebay.com	trimatray.com
Product Display	Yes	Yes	Yes	Yes	Yes	Yes
Review & Rating	No	Yes	No	Yes	Yes	Yes
Wishlist	Yes	Yes	Yes	Yes	Yes	Yes
Product Comparison	No	No	No	No	No	Yes
Checkout	Yes	Yes	Yes	Yes	Yes	Yes
Offers	Yes	Yes	Yes	Yes	Yes	Yes
Social Shares	Yes	Yes	Yes	Yes	Yes	Yes
Order Management	Yes	Yes	Yes	Yes	Yes	Yes
Payment	Yes	Yes	Yes	Yes	Yes	Yes

Gateway						
Shipment Tracking	No	No	No	No	No	Yes
Invoice	Yes	Yes	Yes	Yes	Yes	Yes
Product Bundles	Yes	Yes	No	Yes	Yes	Yes
AddtoCart	Yes	Yes	Yes	Yes	Yes	Yes
Wholesale	No	No	No	No	No	Yes
Live Communication	No	No	Yes	No	No	Yes
E-mail Notifications	Yes	Yes	Yes	Yes	Yes	Yes
SMS Notifications	No	No	No	No	No	Yes

Table 6.1 Describes the comparisons most of the existing 5 structures and the proposed machine. The propose gadget pr sents all the capabilities of existing structures and extra Shipmenttrackingfeatures, SMS structures, and product evaluation capabilities. And it also gives sturdy security and high capability of data than others.

CHAPTER 7

CONCLUSION

Online buying, also referred to as e-shop or e-buying, is purchasing that required of a computer, modem, browser, and the Internet and pay for products. A lot of companies support purchasers to store online as it saves valuable time, hence lowering staffing needs and saving cash for the company.

7.1 Goal

The ambition of this task is to spice up Online Shopping and supply limited services. However, with the alleviate of doing this task, the results are very productive and got an amazing reaction from it. it's very sure that if this task can represent and transmit with the right channel, it can update the complete prevailing system during some months.

7.2 Summary of Findings

Firstly, there has some problems while improvement as the builders are very new in this platform. Secondly, launching the utility in a real environment isn't always carried out yet. So, the developers are best able to test the device in a confined small environment

7.3 Suggestions for Future Work

- The project developed to ensure the application could be valid in today's real demanding world.
- Shortly the system will be extended for many types of features so that efficiency can be improved.
- The features of the website can be changed according to the user demand.
- It can be possible to add some more features or remove some features which are not useful for the user.

7.4 Conclusion

To sum up, having access to online shopping via the net has precisely reformed and stimulated the community as a full. Variety, brief service, and shortened cost were several effective ways during which online shopping encouraged masses from everywhere the planet. Within the near future, the agencies can capable of adding more operations on the online sites and eliminate them from the web sites. The ambition is become to require this venture is to boost the infrastructure of the purchasing systems which include this gadget presents detailed records about diverse merchandise in unique grade. This device is additionally capable view merchandise' full blueprint alongside images and also the client can note their reviews or give feedback. This machine provides extra functionalities than existing structures together with cargo tracking, SMS notification, and reviewing products. this can be an altogether small step to impose the online purchasing management device but a desire so sooner or later this developed system is going to be the incredible opinion for all IT professionals who desired to contribute to the current online buying sector.

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