TRIBHUVAN UNIVERSITY

FACULTY OF HUMANITIES AND SOCIAL SCIENCE

A Project Proposal

On

"An Online Grocery Store"

Submitted to

Department of Computer Application

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In partial fulfillement of the requriments for Bachelor Degree in Computer

Application

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1   Introduction

Commerce is defined as the trading of goods and services with the goal of earning profits. When the commerce shifts from physical to digital dimensions, it becomes electronic commerce or in short, E-Commerce. Thus, electronic commerce is the process of buying and selling of goods and services that takes place over a digital platform and the internet [1]. This platform is a hub for every retailer, customer or business to buy or sell their goods. E-commerce exists in many forms such as an online clothing store, online electronics store, online services etc.

One of the popular form is online grocery store where customers or retailers buy grocery products from the website and receives delivery of those goods right at their doorstep, saving time and effort. The transaction for those goods takes place through digital payment gateway. Online grocery store follows business to business and business to consumer model.

2   Problem statement

Due to price fluctuation and competitive market, a consumer might have to hop from one shop to another in search of any product for a reasonable price. Sometimes shortage of a product in the local store might force a consumer to travel long distances. This can be time consuming and costly due to travel expenses. Also, consumers might not be able to shop as much as they desired due to heavy weight of the product that they have to carry around from one place to another which can be stressful and tiring. Consumers may also face situations where they want to buy a product but are restricted due to shortage of cash.

3   Objectives

The main objective of an online grocery store is

- To provide consumers with a faster and easier way to shop from any location with digital currency.

4 Methodology

4.1 Requirement Identification

Requirement identification is the gathering of relevant requirement that will be used to develop a system. There are different methods to gather requirement which includes studying of existing system, interviews, questionnaires etc.

4.1.1 Study of existing system

The existing system follows a procedure where a customer must be physically available at the store to make orders and buy it. The customer has to walk to the store and carry items in a bag. If the customer doesn't find the item he/she is looking for or is not satisfied with the pricing, he/she will have to walk to another shop and this can continue for a long time unless the customer meets what he/she desires. This can be both time and energy consuming. In current situation, where we are facing corona pandemic, this can be fatal.

4.1.2 Literature Review

Now a days, e-commerce sector plays a significant role both in developed and developing countries. With the growth of the internet, the e-commerce sector has been booming with every generation attracted towards the features, branding, and easiness to buy products more than ever. Traditional ways of commerce required customers to be physically present at the store to buy products. This allowed customers to travel distances, get to know the shopkeeper, bargain for low prices and so on. However, e-commerce revolutionized the traditional ways by allowing potential customers to inspect, select, buy and pay from any location without having to be present physically.

Most businesses in developing countries are small or medium scaled. Advancement in Information superhighway allows developing countries to reach out of their domain and have global reach. This means, ecommerce can allow a business to grow in foreign countries as well. Popular ecommerce platforms such as amazon.com, daraz.com, ebay.com etc. are able to win trust of consumers due to motivating factors [2] such as:

Trust and loyalty

Being able to win the trust of consumers and staying loyalty to those consumers is one of the motivating factor.

Ensuring online security

The ecommerce site should protect the critical information of the user such as credit card details, address, phone number etc.

Cash back guarantee

The ecommerce business must guarantee the customers to provide full cash back on any item that they want to return without any damage.

Discount and great offers

Discounts and offers are great way to attract customers into the business.

These ecommerce sites can provide advantages [2] over traditional commerce such as:

Comfort: If we need any household commodities or even anything, we can get it by sitting at home on the click of our finger on the internet.

Time-saving: By using e-commerce sites, there is not a chance of waste of time and with the help of online order, our necessary product will be delivered to our address.

Options, options, and options: Without visiting outside from one store to another, the consumer can simply compare goods products or commodity. We can see who offer low price for standard & branded goods and can have more option to choose from the websites.

Easy to compare: When the marketers place their products to the website, they make a lucrative description of these products to compare them with other products, to let the consumers know that they have the best option and come back for more.

Coupons and deals: Some online business company makes offers that we can't refuse. Some major sites sometimes offer up to 80% of discount.

Quality: Quality is a big fact on e-commerce, sometimes the product which is ordered from online website will not be similar in quality. So the consumer should not touch the product or make instant transaction until they delivered the product in door.

Thus, in the near future E-Commerce will be the leader with popularity and prosperity in e-trade sector. From above discussion we can come to a conclusion that e-Commerce has

changed the business strategy and making life easier for the people of both developing and developed countries.

4.1.3 Requirements Analysis

Requirements will be collected through interviews, Google searches, website visits and friendly suggestions.

4.1.3.1 Functional Requirement

- This system should allow users to register and login
- This system should allow users to add products to the shopping cart or buy it through online payment gateway.
- This system should allow users to receive notifications about new updates.

4.1.3.2 Non-functional Requirement

Availability

The system will be available for all the users from any geographical location.

Reliability

The system will be reliable as it uses encryption to protect user data.

User Interaction

Users will get an attractive and easy interface to interact with the system.

4.2 Feasibility Study

It is the study of how well the system will function under the given constraints. It studies about how easy is it to build a system under given constraints. The constraints include operational feasibility, economic feasibility, and technical feasibility.

4.2.1 Technical Feasibility

The system can be built using web development technologies such as HTML, CSS, JAVASCRIPT, LARAVEL framework. Thus, it is technically feasible.

4.2.2 Operational Feasibility

Since the proposed system can be accessed using a web browser which is available in both desktop computers as well as mobile devices, thus, it is operationally feasible.

4.2.3 Economic Feasibility

The system will be built using the tools that are freely available on the internet as well as royalty free images, so, this system is economically feasible.
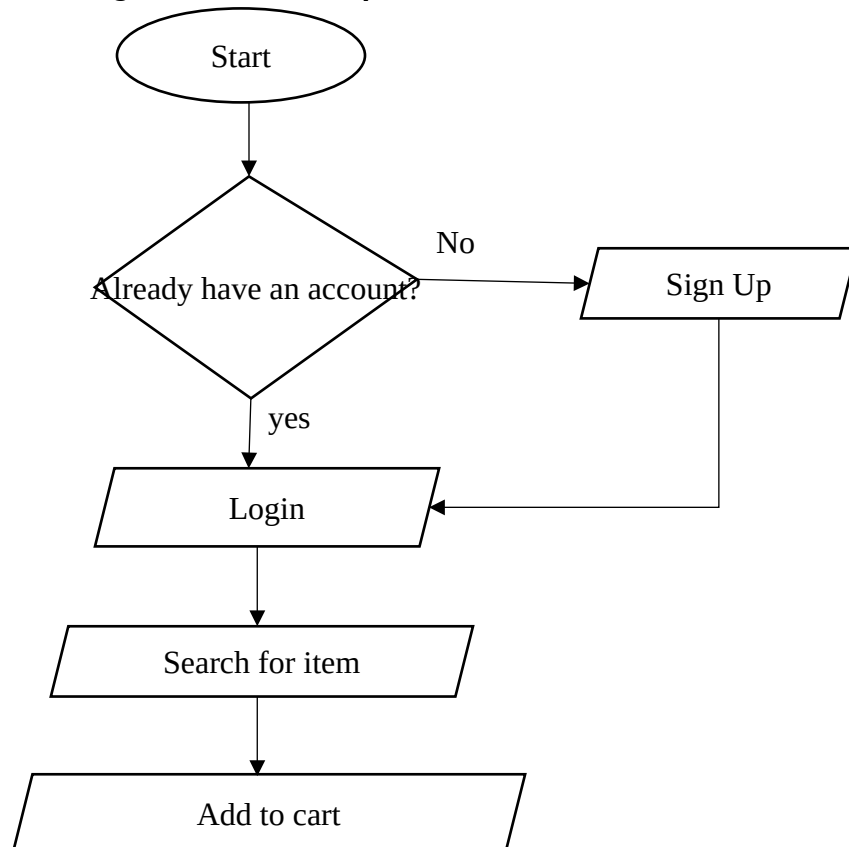
4.3 High Level Design of System

This shows the high level or abstract design of how the system will behave and how the users can interact with it.

4.3.1 Methodology of the proposed system

The proposed system will be made using waterfall software development lifecycle model [3]. In this model, first the requirement is gathered from various sources, then the requirements are analyzed, a design is developed, then the coding process starts. Finally, the developed system is tested through various test cases. If all the test cases are fulfilled and passed, the final system is set up for implementation.

4.3.2 System Flowchart
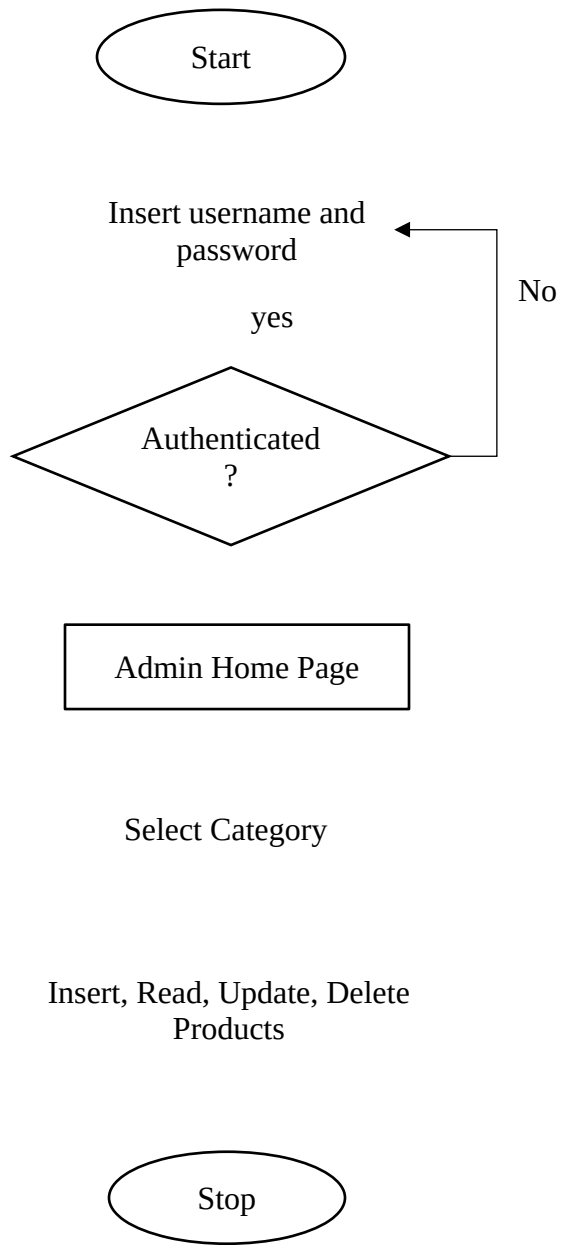
Figure 1: Flowchart for users

Start

Insert username and
password

yes

No

Authenticated
?

Admin Home Page

Select Category

Insert, Read, Update, Delete
Products

Stop

Figure 2: Flowchart for admin

4.3.3 Use Case Diagram

Figure 3: Use case diagram for users

Online Grocery Store

Create product

Display product

Update Product

Delete Product

Receive emails

Receive Orders

Create new categories
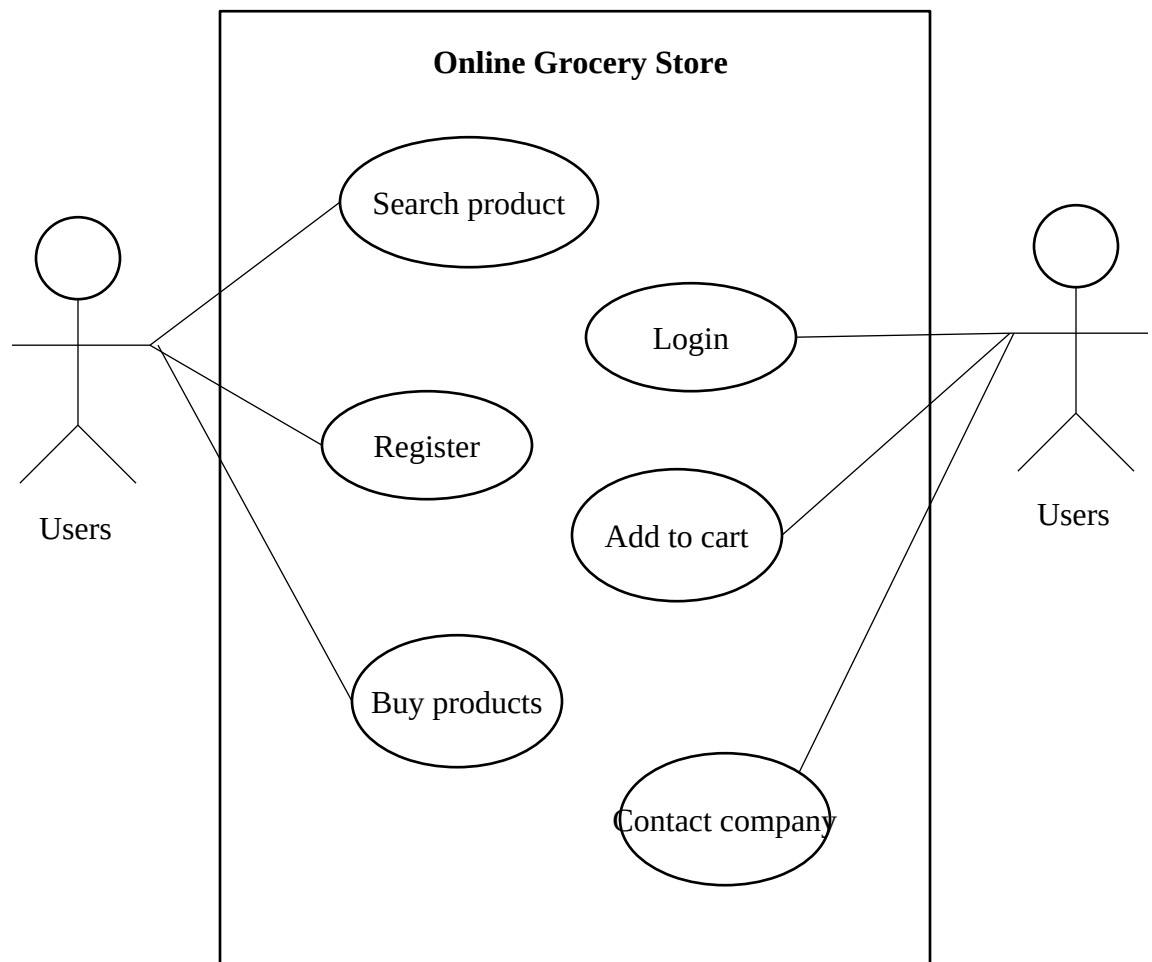
Admin

Admin

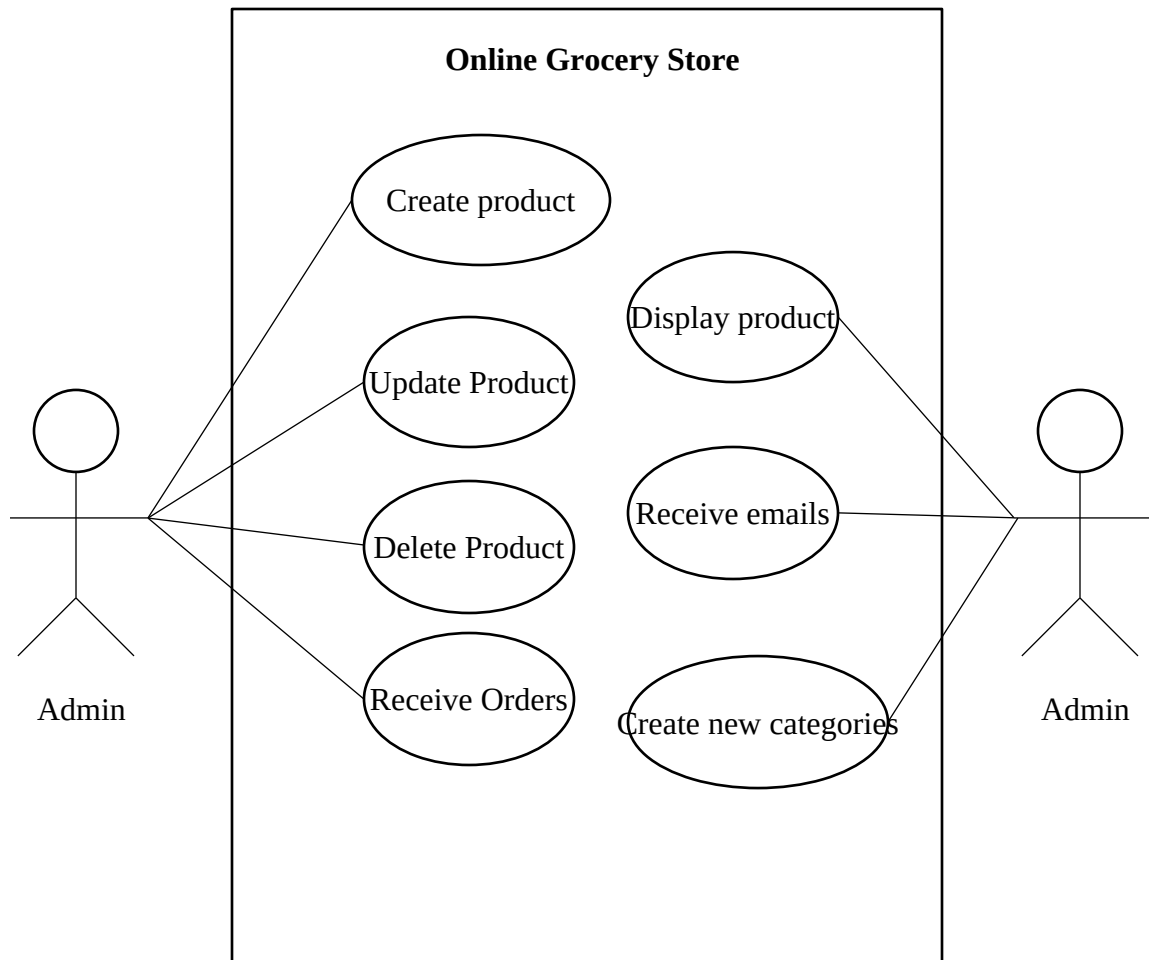*Figure 4: Use case diagram for admin*

4.3.4 Description of algorithms

The system will use basic algorithms to implement recommendation systems.

Content-Based Filtering

Content-based filtering uses item features to recommend other items similar to what the user likes, based on their previous actions or explicit feedback [4].

Working of Content-Based Filtering

Step 1: Start

Step 2: Create a cookie

Step 3: Record the interaction of user with the items such as tags, item brand, item ratings provided by the user, categories of items etc. and save it.

Step 4: Retrieve items that is similar in brand, tags, ratings, categories etc. that has been stored in the cookie.

Step 5: Stop

5   Gantt chart

Table 1: Gantt chart for online grocery store system

Process	No. of Weeks									
	1	2	3	4	5	6	7	8	9	10
Requirement Gathering	▓									
Planning		▓								
Designing			▓							
Coding				▓	▓	▓	▓	▓		
Testing and debugging									▓	
Implementation										▓

6   Expected outcome

The system is expected to provide an easy to use interface for users to buy items and search through the best deals for a best price.

7

7 References

[1] Wikipedia, "E-commerce," wikipedia, [Online]. Available: https://en.wikipedia.org/wiki/E-commerce. [Accessed 14 02 2022].

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[3] TutorialsPoint, "SDLC-Waterfall Model," TutorialsPoint, [Online]. Available: https://www.tutorialspoint.com/sdlc/sdlc_waterfall_model.htm. [Accessed 09 02 2022].

[4] Google, "Content-based filtering," google, [Online]. Available: https://developers.google.com/machine-learning/recommendation/content-based/basics. [Accessed 09 02 2022].