Mobile Application for Cottage Industries Sales System

ABSTRACT

With the spread of COVID 19 pandemic, many jobs are lost and new others appeared. Cottage industry is an already existing business, which became very popular in the last year since it does not require high capital or rent expenses. These small investors face generally difficulties in marketing their products and use social media for this purpose. This project aims at helping the cottage industries in Oman to show their products and services for the customers and to collect their orders faster by a mobile application. It will also help them in communicating with their customers and viewing their feedback, opinion, and the rate of the business. A survey was shared with some customers and has demonstrated the important need for such project. In the light of the collected results, the design of the mobile application has been completed by drawing diagrams for the most important aspects of the project.

Introduction

Nowadays the world is facing a numerus changes in all aspects of life due to COVID-19 virus. One important impact of this virus on people is that they have started staying at home longer than ever, and lots of them has lost their jobs. Due to these circumstances, many people have started their own businesses from their houses which is also called (cottage industries) to be able to cover their life expenses in these special conditions.

The capital of cottage industries is low to medium, and the owners of cottage industries prefer to spend their capital on the everyday costs and in operation cost rather than spending it on the marketing or on designing application or software for their businesses.

The aim of the project

The project aims to help the cottage industries in Oman to show their products and services for the customers and to collect their orders faster by a mobile application and to help them in communicating with their customers and viewing their feedback, opinion, and the rate of the business.

Objectives

- ➢ Provide an integrated solution for marketing, payment and delivery for cottage industries.
- ➢ Save time and cost of order making.
- ➢ Enhance the reliability of information provided with cottage products and their quality through a unified evaluation and customer review.
- ➢ Enhance the customer satisfaction on cottage products by integrating intelligent content recommendation.

Literature review

Digital advertising is more reliable than those of traditional advertising methods. So, many businesses start putting more budget in digital ads on WhatsApp and Facebook. But these advertising methods require a lot of money and time. So, the project is related to advertising application for all type of business (Aizen 2010). This application provides businessman an opportunity to put advertisements and also provide a reliable and efficient ordering system. As, in COVID-19 cottage businesses need to advertise their projects this project will meet the requirements of the small to medium businesses. In this chapter a literature is given on the similar applications, a detailed literature review, feasibility analysis of the proposed method is done (Johnston 2013).

Effective advertisement system can be very beneficial in boosting the sales of retailer by reminding consumers and recommend them to purchase additional products that are not originally on customer' shopping lists. Existing advertisement systems are designed for identification and prediction of top selling items, also known as hot sellers, the customer's behavior and sales data can be predicted using various machine learning techniques. An

advertisement system is proposed by (Softky 2010), the framework identifies potential customers of unsought products customer's behavior using boosting-SVM. The system also provide prediction for future shopping for customers. Promising solution is showed by system to target the related advertisement for unsought products.

Another advertisement recommender system was proposed by (Johnston 2013) . The system can provide customers the best seller also the system predicts the customer's behavior and show the advertisement of their interest, two experimental studies are done in paper for developing the system. Naïve Bayes is used for predicting the customer's behavior. First study focus on short and long browsing history period for training of model and the results shows that longer history period used for training model didn't result in good prediction. In second experiment the web history is categorized for predicting user's interest and the result shows that classifier's results of classifier are more accurate if website categories are used instead of domain names.

On the topic of online advertisement systems, a study is done by (Armano and Vargiu 2010) . A machine learning hybrid method is proposed. Author used SVM and decision tree for referring the multiple keywords for a website This will help user in developing the online campaign for advertisement. Another framework is proposed by (Dao et al. 2012). The system provides targeted ads on other social networks. Our work is different from such previous research in that it focuses more on identifying potentially interested advertisement audiences by analyzing the similarities in their website access patterns in comparison to users who have previously visited the site before.

Methodology

RAD Model: is an incremental type of model and the abbreviation of RAD is rapid application development model. The RAD model is most commonly used for the mini or small projects. The functions and the components of RAD methodology are developing parallel which means equal functions and components has in RAD. According to different researches this model is also known as user friendly model because it provides a customer's feedback, delivery and purchasing behavior quickly and easily. The RAD model has five phases in the development process which are business modelling, data modelling, process modelling, generation of applications and the last phase or stage is testing and turnover (Rizwan and Iqbal 2018).
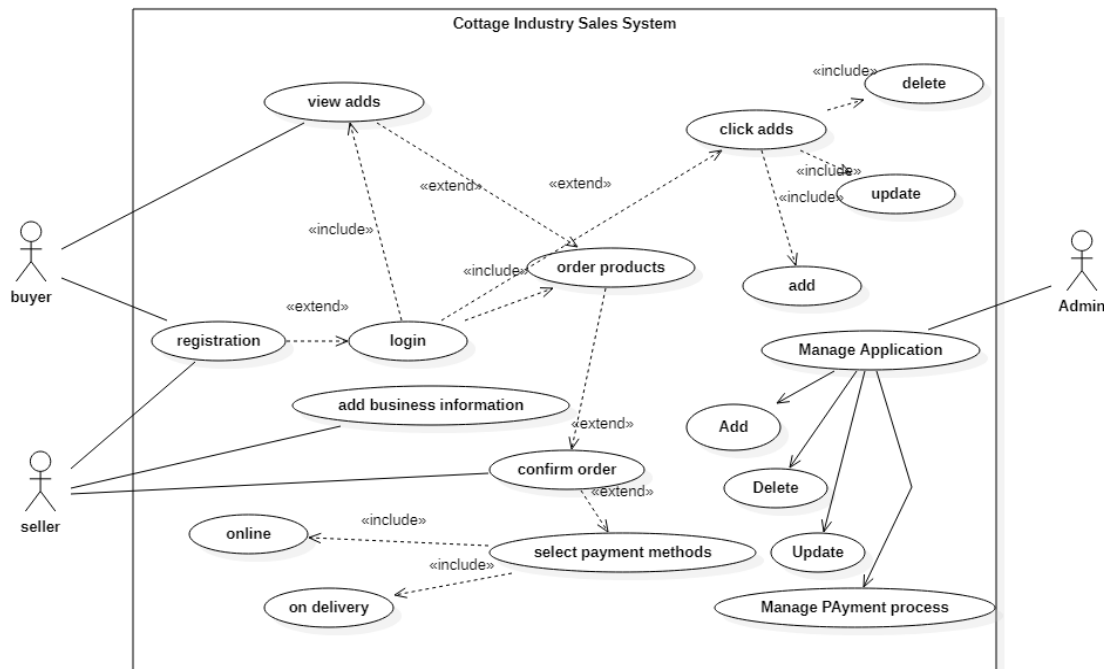
Design

Figure 1. Use case diagram

In software development engineering, class diagram is part of UML and it is type of diagram having static structure which describe structure of system through showing classes of system with their attributes, methods and associations among the objects (Arora and Bhatia, 2018).

In this system, there are three users: the buyer who can search for goods and purchase them, the seller who can market his/her products and sell them and finally the admin who manage the system and check the payment process. The seller can post the details on the products and publish different advertisements of his/her products on the application such as any seminar of business, any business campaign going to start or any products he wants. Buyer will login to view different advertisements of cottage industries. If he wants to purchase the product directly from the application, then he can directly purchase by ordering the product and the seller will confirm.
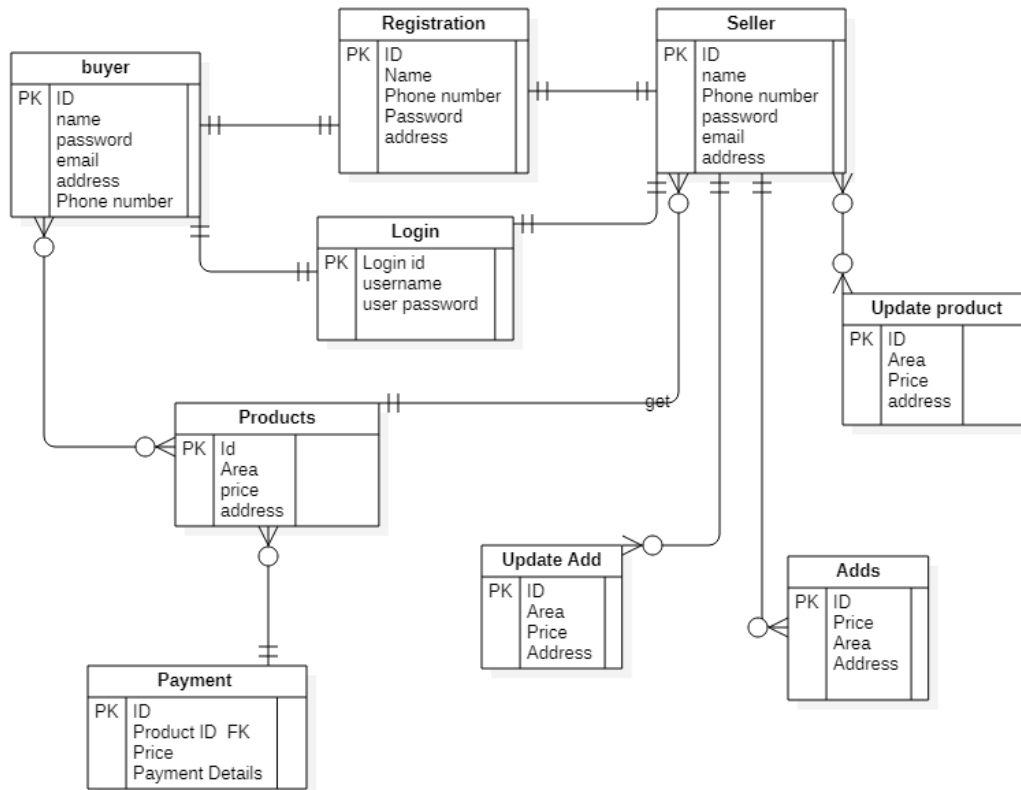

Figure 2. ERD

The ER Model or ERD is object oriented display of entities. That means in this diagram the objects or subjects are represented with their attributes to know which entity have what characteristics (Halimi et al., 2020).

In this diagram, the entities of the system are identified and then their characteristics or attributes are identified and arranged in the form of class diagram. Entities included above are registration, login, payment, buyer, seller, update product, add product etc.
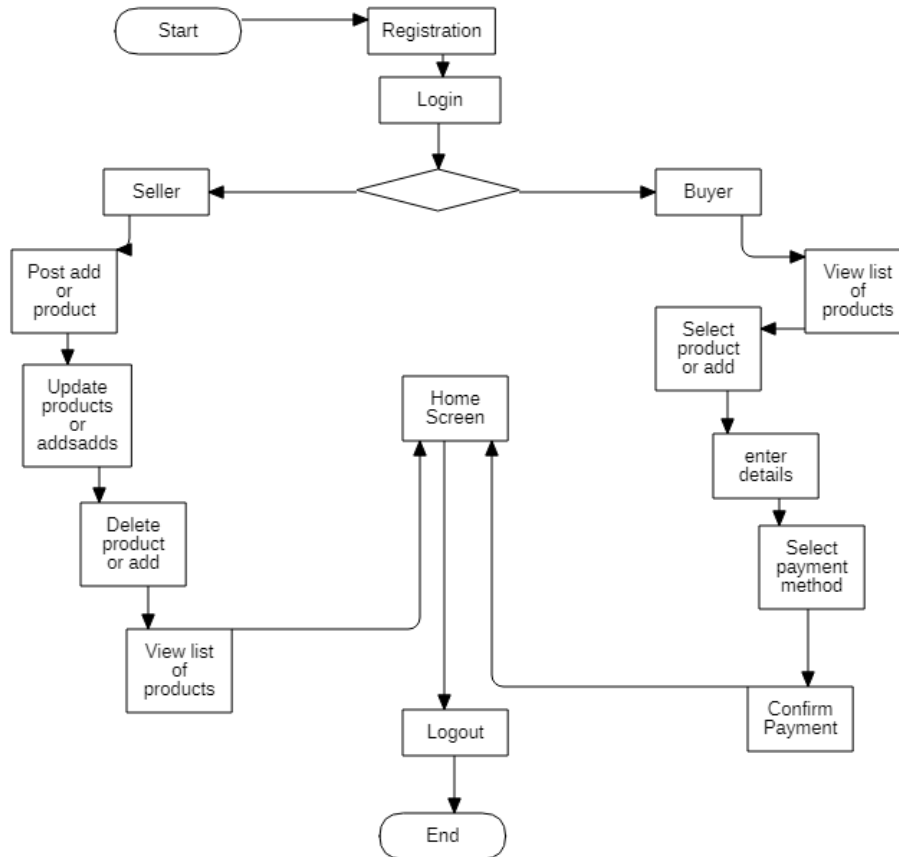
Figure 3. Activity diagram

Normally activity diagram could be also refer as flowchart to show the flow of one activity to another activity (Arora and Bhatia, 2018). The activity would be said as actions of the application. Basically this diagram is draw to represent gynamic behavior of application.

In this diagram, the operations or functions of the users both seller and buyer are represented in the form of diagram in the form of data that how user will register and then what happen next and next in the flow.

Risk of my project

- There are small chances that owners of cottage industries will move to other applications or launch their own applications.
- These systems are mechanical that can be fail at any time for the mitigation the owner should have the backup plan or backup of all the data of system.
- Sometimes it happens that person rely on backup and unfortunately it might be lost so for the mitigation the owner should check the backups recovery on frequent basis.

Conclusion

In conclusion, the project's major aim is to contribute in the benefits of the cottage industries in Oman and to improve their marketing and sales activities by providing a mobile application using the iterative model. By giving cottage industries in Oman the integrated solution for their businesses they will be able to focus on the quality on their products and services. The application will help in increasing the sales and the profit of cottage industries in

Oman and therefore the contribution of these businesses in Oman GDP. It must increase the independence on the local products and services and improve the welfare of Omanis people.

Limitations

There is a time limit to submit the project, another limit is the ability to reach all owners of cottage industries in Oman.

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