Home Repairs: Mobile Application for Home Maintenance Services

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Abstract

The need for on-demand services at your doorstep is increasing. The market related to home services is approaching the customers with innovative ways to survive with the unending marketplace inclinations. Financiers prefer investing their money in on-demand businesses which is one of the most important reasons that has created a boom in this domain. The technological advances have opened an arena for services at your doorstep. On-demand services are essentially a more suitable and efficient method of acquiring and ordering trained services. The current generation is the biggest user of internet facilities and this has broadened the opportunities for the home services businesses. The application “Home Repairs” aims to provide a wide range of home maintenance services, for example, maintenance of electrical appliances, repair of doors, air conditioners, televisions, etc., in addition to carrying out cleaning operations. The customer registers to the application by downloading it from the Play Store. The services needed, the employee inclination, etc. can be specified using appropriate options. The feedback from the customers who had availed of the services in the past can be reviewed for taking better decisions and making comparisons. This application saves time and effort of the customer by avoiding the need of going to maintenance stores, leaving the house and being in the market for a long time, waiting for traffic congestion, etc. This application will be especially useful for the elderly and special needs people. The team is consisting of trained and skilled engineers who value customer satisfaction. This will be the first application in the Sultanate of Oman that serves the field of home maintenance and seeks to facilitate home maintenance services. The application will provide a user-friendly interface and a fast means to solve maintenance problems with the lowest costs possible to ensure convenience and provide distinctive and attractive services to customers. The application will be developed using ASP.Net for creating the interface and SQL Server as the database.

Keywords –Home repairs, Maintenance services, customers, service engineers, mobile application.

Introduction:

Mobile applications have become one of the sources preferred by all people because they are quick, so individuals quest for the vital info or amenities. People need somebody who liquidates more or less of his business at home, particularly someone who does not own a car and has problems related to home maintenance and desires somebody to repair them, and this application works to solve these people's problems. That is why I chose the home maintenance service app, as this app is well-thought-out as public since it is not for a definite business. This is because it collects all the malfunctions that occur in homes, as this application is designed to serve the categories that need home maintenance at reasonable prices and in a very short time.

Methodology:

The authors of this research work have used a blend of the quantitative and the qualitative methods to get the data about the research work concerned. Online questionnaire was implemented for the quantitative method to finalize the objectives and analyze the problem to design a suitable solution. The qualitative research method was implemented by reading the various journals, articles etc. related to the work under consideration to get more information on the related technology in the similar applications and work on minimizing the gaps in the existing applications of the same kind.

Literature review:

“Using Home Maintenance and Repairs to Smooth Variable Earnings” In this article which is written by Gyourko and Tracy (2003) This article talks about homeowners adjusting their homes themselves. The article's results indicate that the expenses that homeowners spend on maintenance contribute to the overall home consumption homogenization strategy.This article also talks about people's need for home maintenance services, and this is how the article is similar to my project.

“Application of AI in Home Automation” The article talks about how to manage the home remotely through a device that is used anywhere connected to the Internet, the article aims to introduce the smart home and ways to use networks and devices in operating home lights and electrical appliances, etc. Multiple belonging to the house. (Kumar and Abdul Qadeer 2012).

Simple Home Repairs (1987) The writer in this book provides a set of tips for home maintenance, as there is advice on exterior surfaces of homes and their components, as well as matters related to plumbing and air conditioning.It also provides instructions on ways to deal with problems related to the maintenance of the home and its appliances, such as air conditioning and others.

Scroop application:This application is based on communicating with the best technicians and in the fastest time, and any technician will be monitored to receive the request from this request, and in the event that customers do not like the services provided by the application, he must submit a complaint from the complaints department in the application.The application provides various home maintenance services such as maintenance of electronic devices, electricity repair, and others.

Batik application: The application offers answers to difficulties that occur in the home and need repairs, as the application includes twenty home maintenance services such as spraying insects, maintenance of air conditioners and others.

Mr. right Application: This application is a dependable and secure application for all kinds of home services and works associated to fixing faults at home, whether the customer needs an electrician, pest control services, car wash, or others.

Problem definition:

Each application might encounter difficulties, whether these snags are related to the staffs or the application, and amongst the difficulties that might happen in the application are:

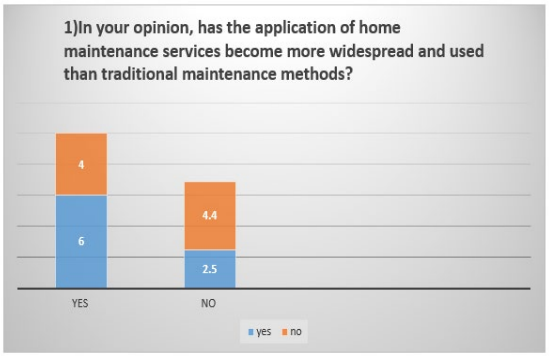
- The cost of maintenance services may be expensive.
- Application screens are unattractive to customers.
- The application is difficult to understand because it does not explain all services.
- Low levels of security in the application.

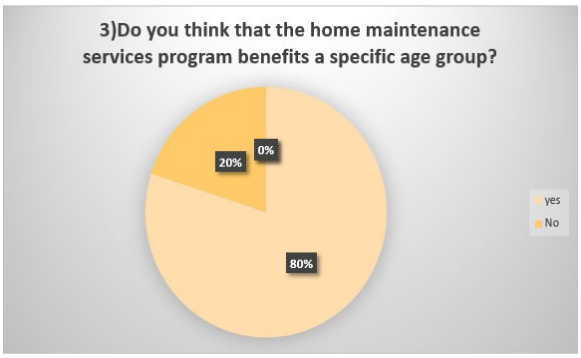
As for the problems that are caused by the employees are:

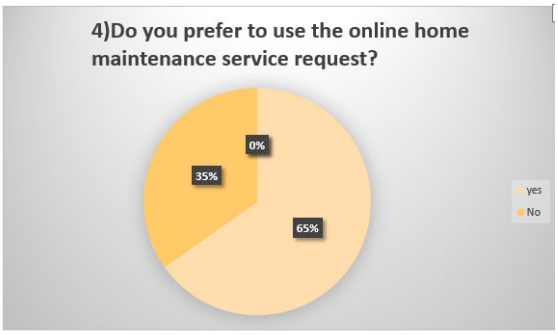
- Delay in working hours.
- The worker does not understand the problem and does not talk about it.
- The employee behaving inappropriately with the owner of the house.

Questionnaire for Data Collection with Analysis:

I wrote the questionnaire questions and placed them on the Internet, because the current conditions that pass through us due to Covid-19, we cannot distribute the questionnaires except by electronic means, so I posted them on the WhatsApp program and the questions and results were as follows: If the household repairs facility application was realized in Oman, do you consider that there will be call for the application by clienteles? The responses, most of them were "yes", as they wrote that the application is relaxed and will simplify numerous amenities in a short time, as it is a new, modern and practical ideas.







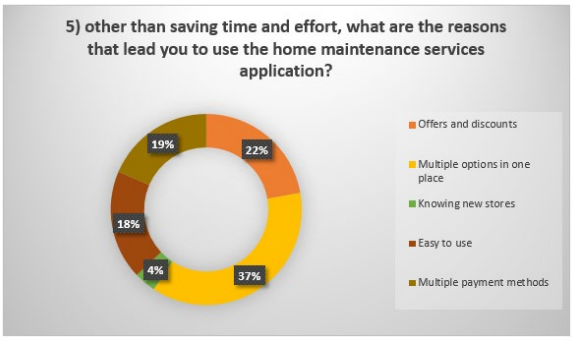


Figure 1 Q1,3,4,5 Poll and Analysis

Risks of project:

Category	Impact	Probability	Solution mitigation
Schedule	High	Medium	By using a good schedule planner, you can manage time and work according to the right plan.
Economic	Medium	Low	We develop and monitor an economic action plan in order to avoid any problems in the future.
Resources	High	High	All the necessary resources are provided for the success of the project and the work of updating and backup copies to avoid any damage.
Technical	Medium	Medium	The devices are verified before their use, and an anti-virus program is installed, as well as providing backup copies of the program.

Table 1 Risks of the project

Design Diagrams:

Use case Diagram:

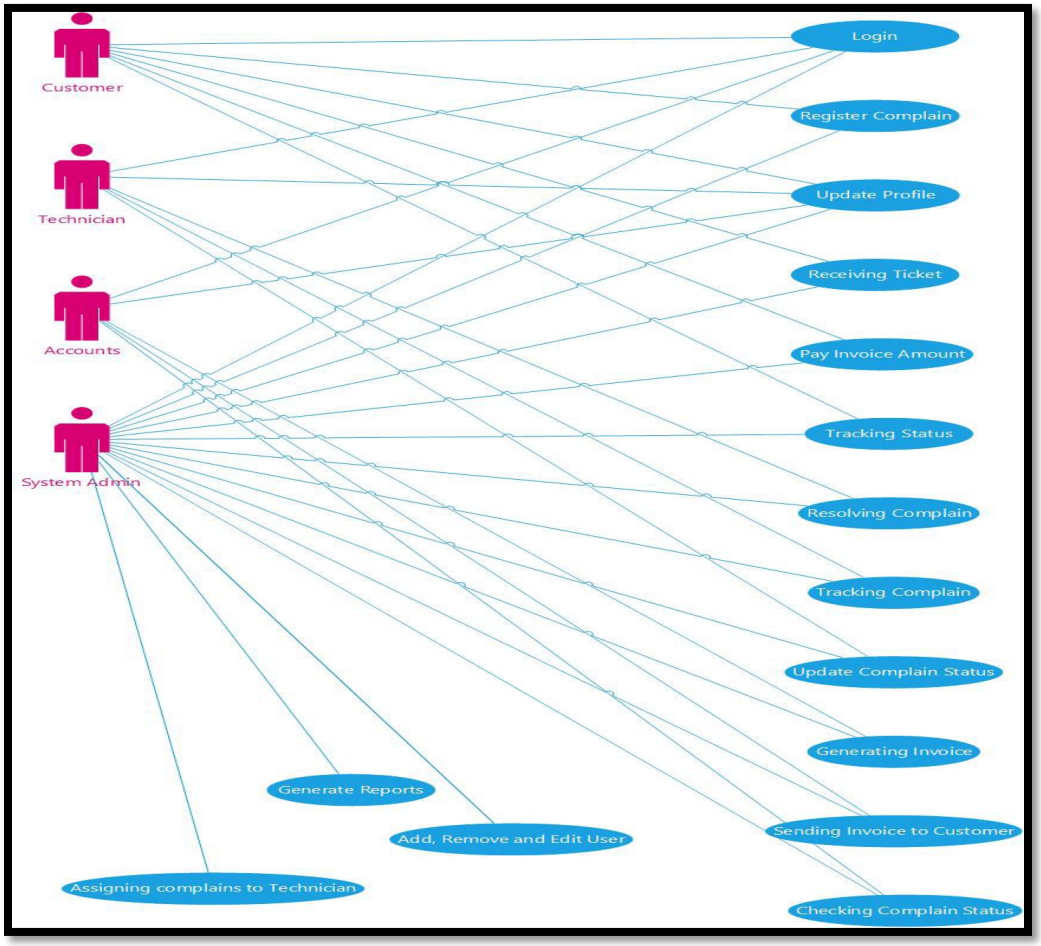


Figure 2 Use Case Diagram

- Class diagram:

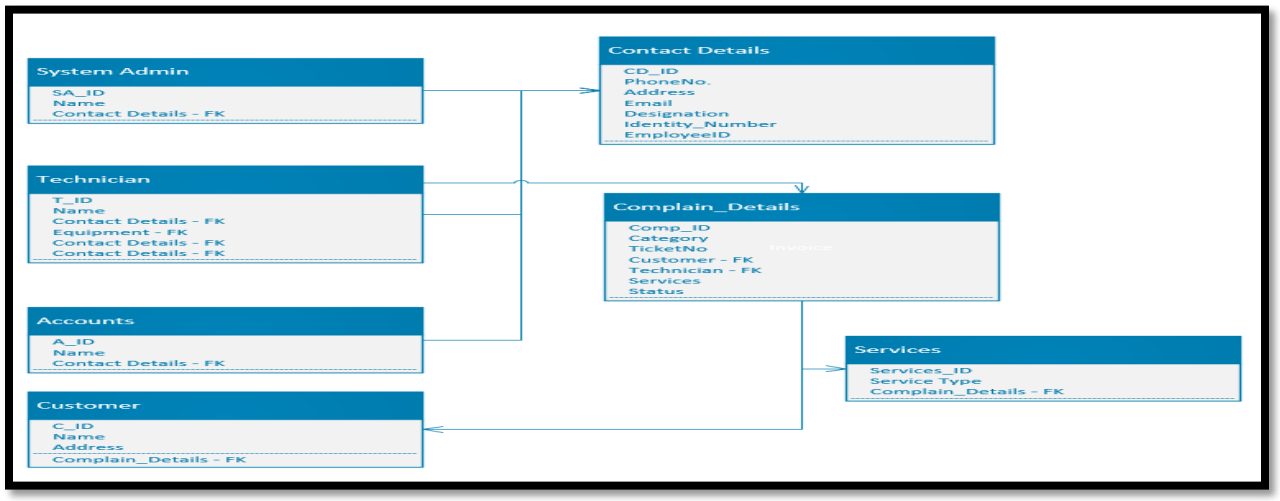


Figure 3 Class Diagram

The diagram above illustrates the static structure of classifiers in systems, and it provides a basic notation of the layout of other structures designated by the UML.

Entity relationship diagram:

The graphic above shows a number of entities that are saved in the database.

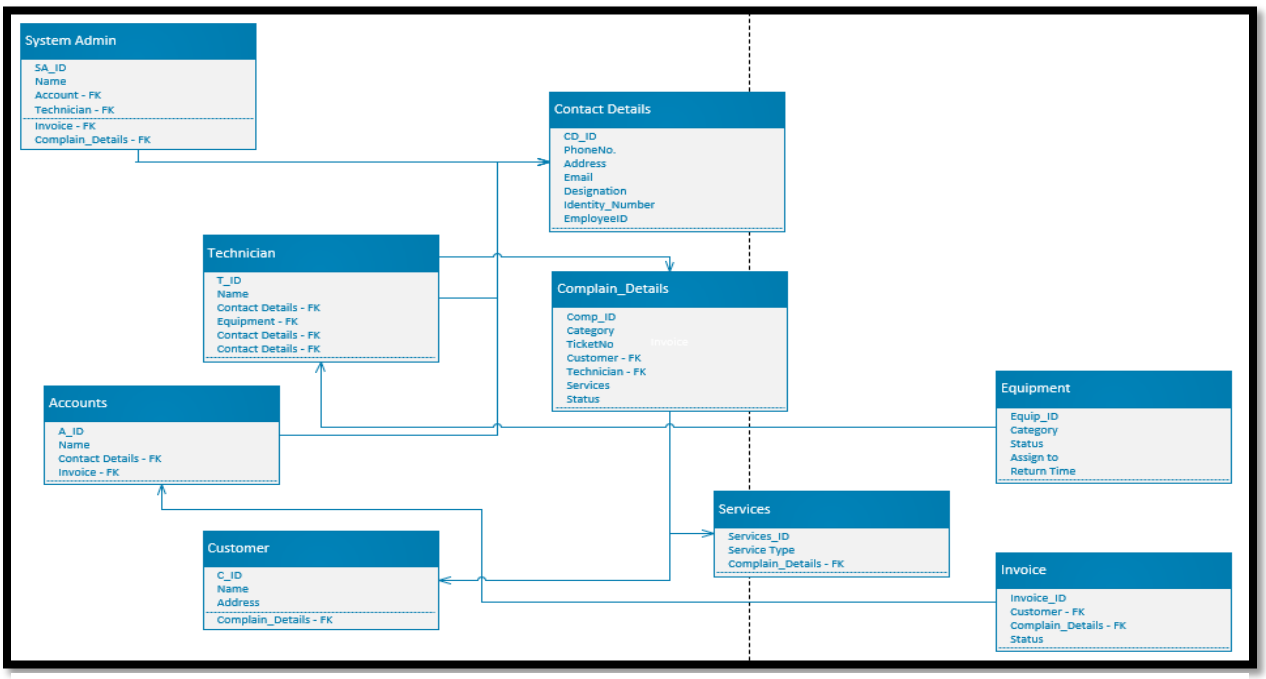


Figure 4 Entity Relationship Diagram

- **Flowchart:**

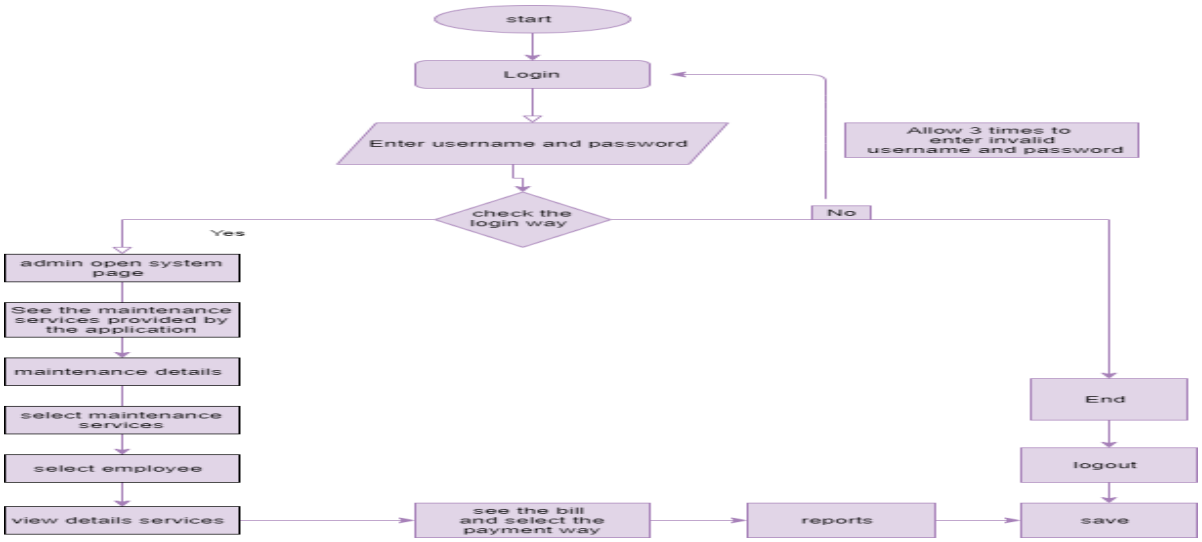


Figure 51 Flowchart

- **Sequence Diagram**

It is considered one of the interactive diagrams that show how the operations are carried out in detail, as it shows when messages were sent, who is the receiver, and who is also the sender.

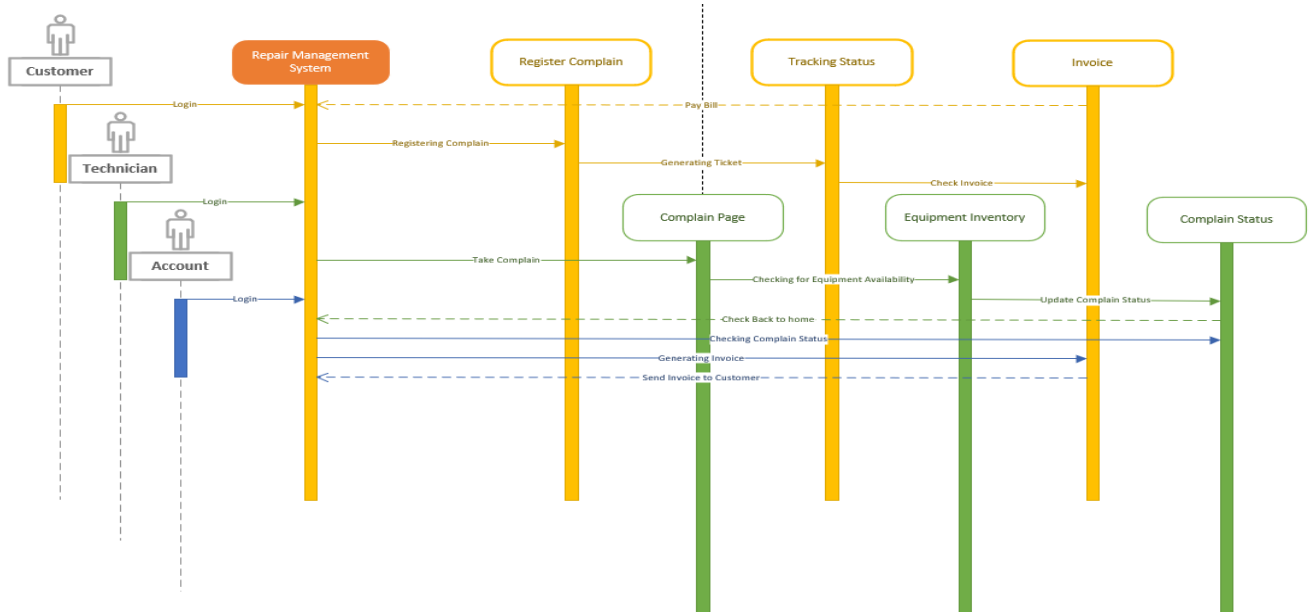


Figure 6 Sequence Diagram

Recommendation:

This application contributes to:

1) Unremitting levitation of the levels of maintenance amenities delivered by the application in order to make sure commercial eminence and attain great altitudes of customer contentment.

2) Putting the finest repairs technicians in one place and this provides work chances for occupation hunters.

3) Achieving scalability for this application because there is no similar application for it yet.

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