Asian Journal of Applied Science and Technology (AJAST)
Volume 8, Issue 3, Pages 112-119, July-September 2024

Development of Intelligent Help System for Small Cities

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DOI: https://doi.org/10.38177/ajast.2024.8311

Article Received: 17 June 2024 *Article Accepted: 26 August 2024* *Article Published: 29 August 2024*

ABSTRACT

It is a common observation that. Once, while travelling to a city unknown to you, you sometimes find it challenging to get help from various places where it is required. The need for markets, food, pharmacies, medicines, hospitals, workshops, and other goods requires a proper guide that can be available quickly. Specific software like maps helps a lot but cannot provide the information needed for a particular point in time. Also, they are not concerned and maybe connected with the direct service provider. Thus, finding the person worried about this work becomes tricky. Also, it is tough for the maps to provide the exact information required at a particular location. Thus, there must be a remedy for this specific problem. The system we will design in this context supports the availability of all kinds of necessary services. The services are required occasionally and then by various people who will visit the city for a new time. The project aims to develop an application to help users who have been entering a particular city for the first time and would require specific services. The services are available to users who have already registered and are working in the system. The services offered by a particular user in the system shall be made available easily with the help of those concerned who are going to help.

Keywords: Artificial intelligence; System; Design; UML; Development; Smart cities; Sustainability; Location; Model; Intelligent.

1. Introduction

The current system used to serve the people needs to be appropriately equipped as it is required to help. Suppose you talk about the maps that are frequently available to users. The locations will be marked inside the system, and gender information will be provided. However, it becomes a huge problem when we want to find out which shop or service center is open. The life availability of any person inside the system shall be of great help. In general, if one talk about the current system prevailing in the helping services for any city. The structure could be better organized and well-managed [1]. Various people can perform a specific job, but the availability of all of them is untold at any point. The people who are available to help me at a particular place do not appear online when it is required, even though they are online. It can also be said that whenever a specific group of people are ready to help for a noble cause. They will not be able to identify the places in the position of the people. Thus, you are not supposed to find out those people who are honest and fair. Sometimes, it does happen that the correct person held the person who is looking for the services must struggle a lot to find the proper services at a point.

1.1. Study Objectives

There is a requirement for a system which will be able to identify the people who are available to help at a particular location and nearby. Also, the system requires that whenever a user searches for a specific service, they can find out those services are in the zone. Thus, it becomes a difficult job to identify those who are available to help you, and it becomes an essential job to finalize what kind of help they can provide. Thus, it is always required that we be able to find out the help needed for the location where the user wants to find the correct person to help him in his problematic situation [2]. The system that is entitled to be created. Make sure that the people using the system will be able to find out who will be helping fairly and in a very proper sequence with a click of a button at a particular

location in the city, even if the person does not belong to the town. The following issues are considered during the intelligent system's development:

- Finding out the correct services available for a user at a particular location in the city.
- Tracking all the services available at that location where the user is at present available and seeking the help at any time.
- Tracking the users who are active alive at a particular timeslot, who can be helpful enough for a user who is asking for the help.
- Designing a system which is capable enough for finding out the services of a particular variety and a specific type at a location when the user wants to ask for those services.
- Listing of all the services that are available in a specific location by a given user.
- Information on all the services and the service centers that are available in the locality for a small city like Shaqra.
- Finding out all the needful helpers were ready to help the people at any stage of time. Whenever it is required.
- Tracing the user who had requested for the services and providing the necessary things which is asked by the user for that.

2. Background

Suppose we find out all the possible solutions that are available in the continent of Saudi Arabia [3-6]. Thousands of such websites and web maps are available to help these people. Some of the well-known systems are considered to find out the analogue of the project along with the existing system. It has been a very good approach to find out about the problems associated with a particular current system and to give the solution in the form of a new, better, beneficial system that will always be helpful to most people [7]. The system we are trying to develop contains various factors that the existing available system is not concerned with. Suppose you talk about the ordinary standard maps that are available. It contains only the data of a particular location, not helping on a large scale. However, a real-time system is required whenever a person needs help [8]. In terms of the system under consideration, some years before, even the maps could not find where the person-specific services would only be available to those who required them at a particular time. Say, for example, if you're travelling from a car in a specific city and at any instance your car malfunctions, you don't have any option other than to find out the place for repair of the vehicle, or else to ask the people available in the locality. However, this procedure is very cumbersome and very tedious. Especially when there are no people available on the streets, and the available people do not know the availability of resources. Thus, simplifying the life of human beings by providing a system which will be helpful enough for such problems is the need of the hour [9]. Many observations can be made from the existing system at an instance. A comparative study chart can be made from these observations. However, it could be well identified that the features proposed in this project are more sophisticated and very fine as far as emergencies are concerned [10].

Table 1. Comparative Table for the proposed model with other existing service

Features	Proposed	Google Maps	Open Street Maps
Restaurant	Y	Y	Y
Pharmacy	Y	Y	Y
Workshops	Y	Y	N
Food	Y	Y	Y
Groceries	Y	Y	N
Car Maintenance	Y	N	N
Online Helpers	Y	N	N

3. UML Analysis of the System Design

Any system must be modelled correctly and accurately before the development stage begins [11]. To develop the system, various concerns must be taken care of. This section will include the system analysis results illustrated by UML Diagrams, class diagrams, activity diagrams, database diagrams, entity relationship diagrams, and flowcharts to elaborate the system in detail.

3.1. Use Case Diagram for the Proposed System

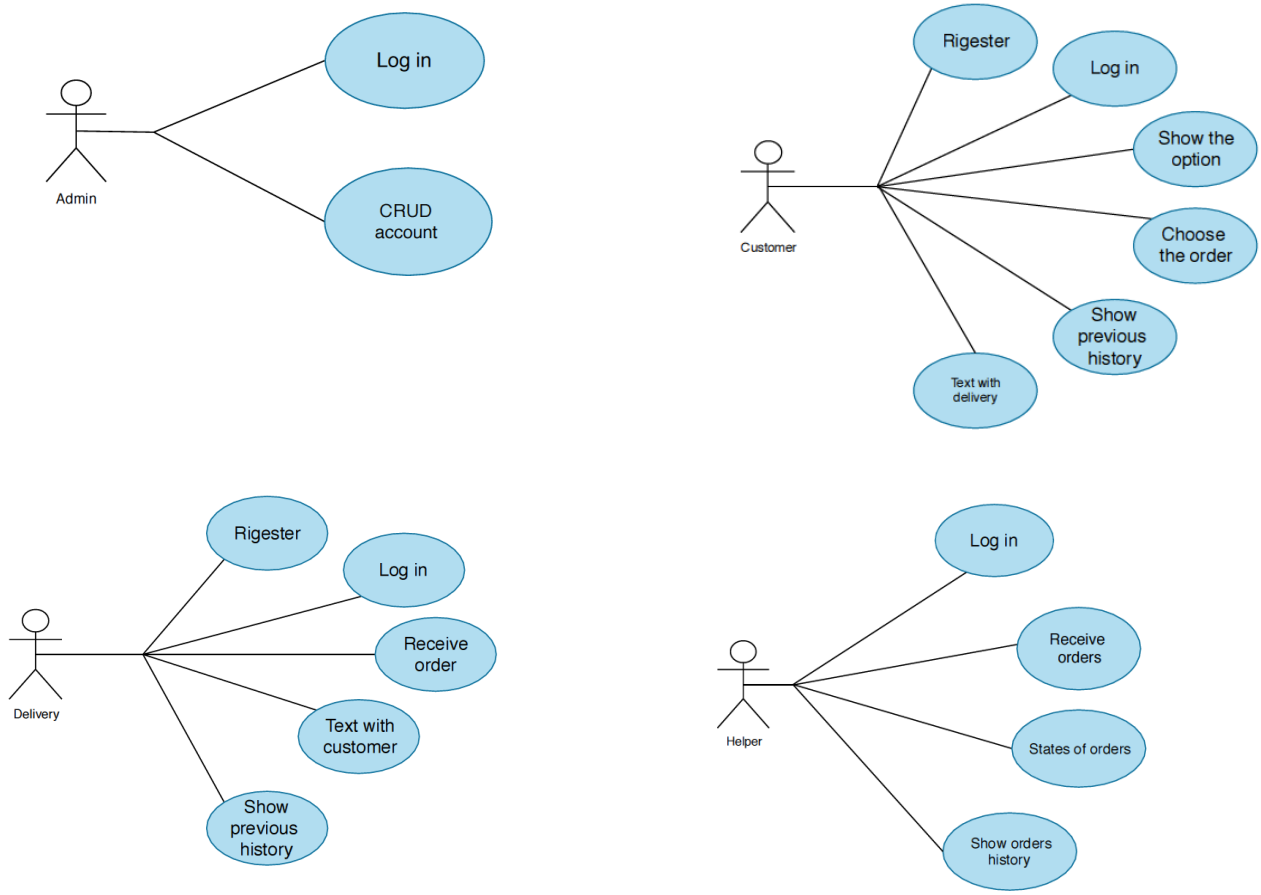

Figure 1. Use Case Diagram for the Proposed System

3.2. Activity Diagrams for the proposed System

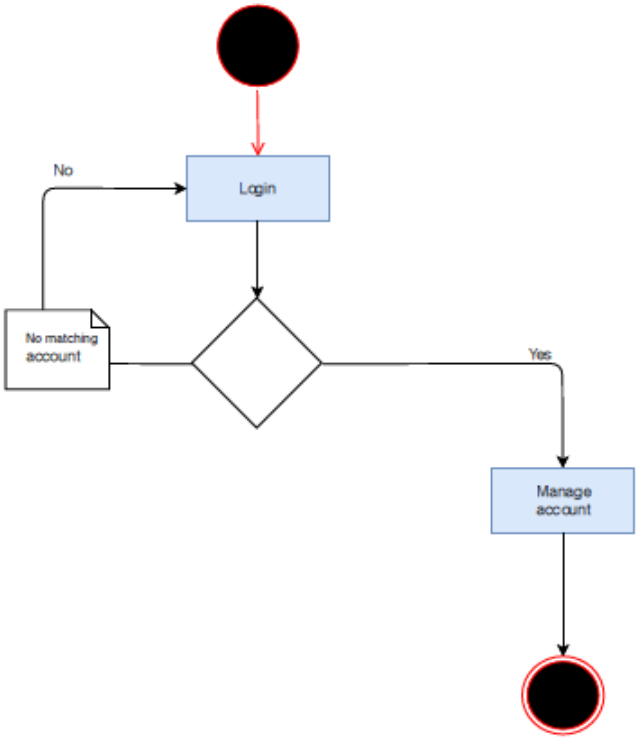

Figure 2. Activity Diagram for the Login Module

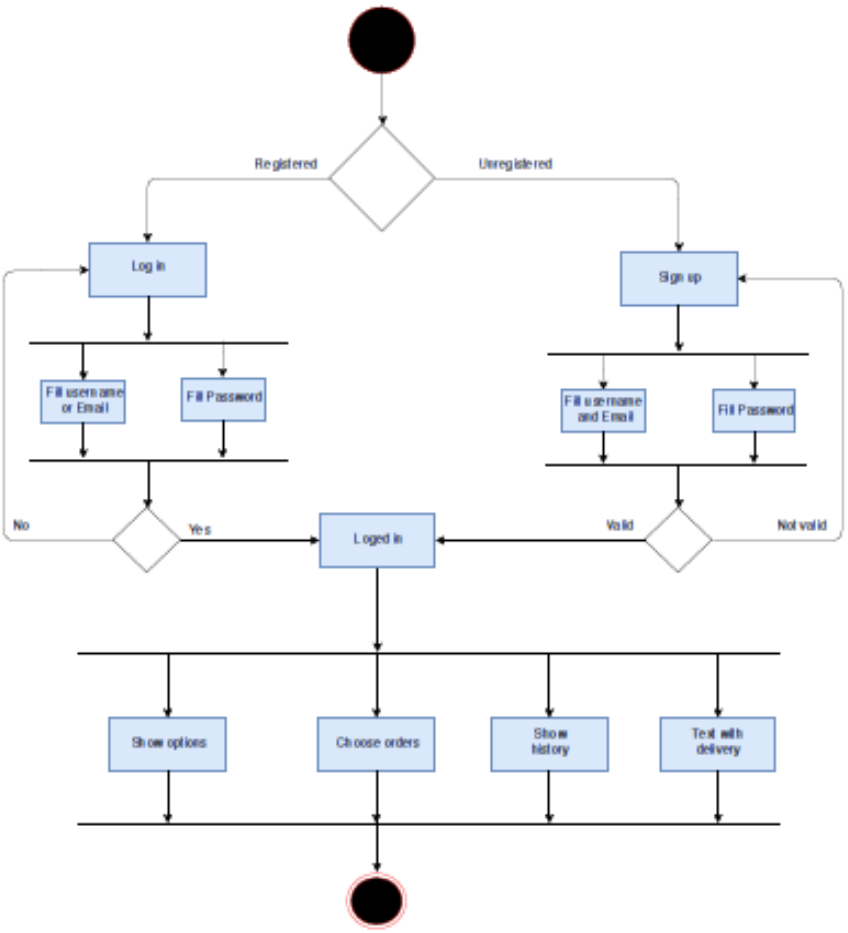

Figure 3. Activity Diagram for the Service Module

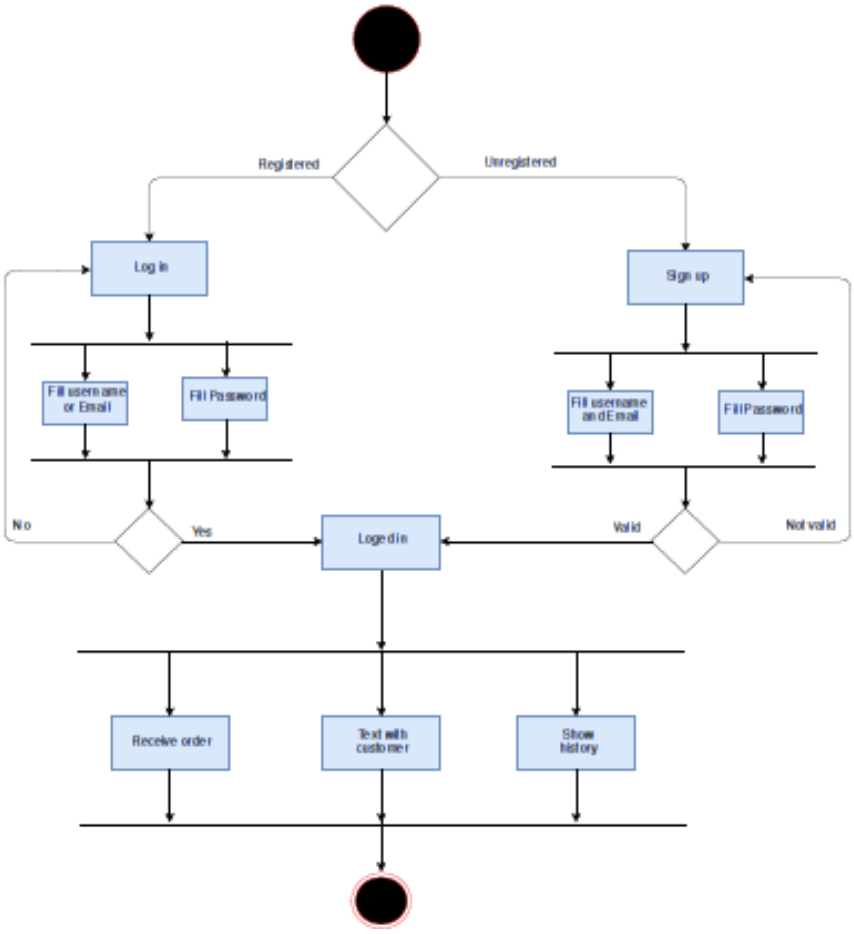

Figure 4. Activity Diagram for the activity module in the system

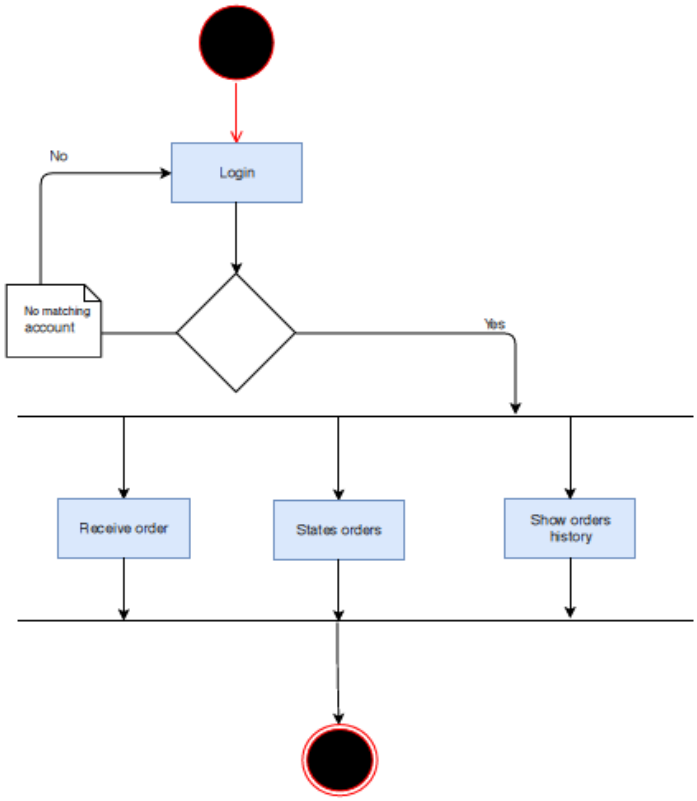

Figure 5. Activity Diagram for the Ordering Module

3.3. ER Diagram for the proposed system

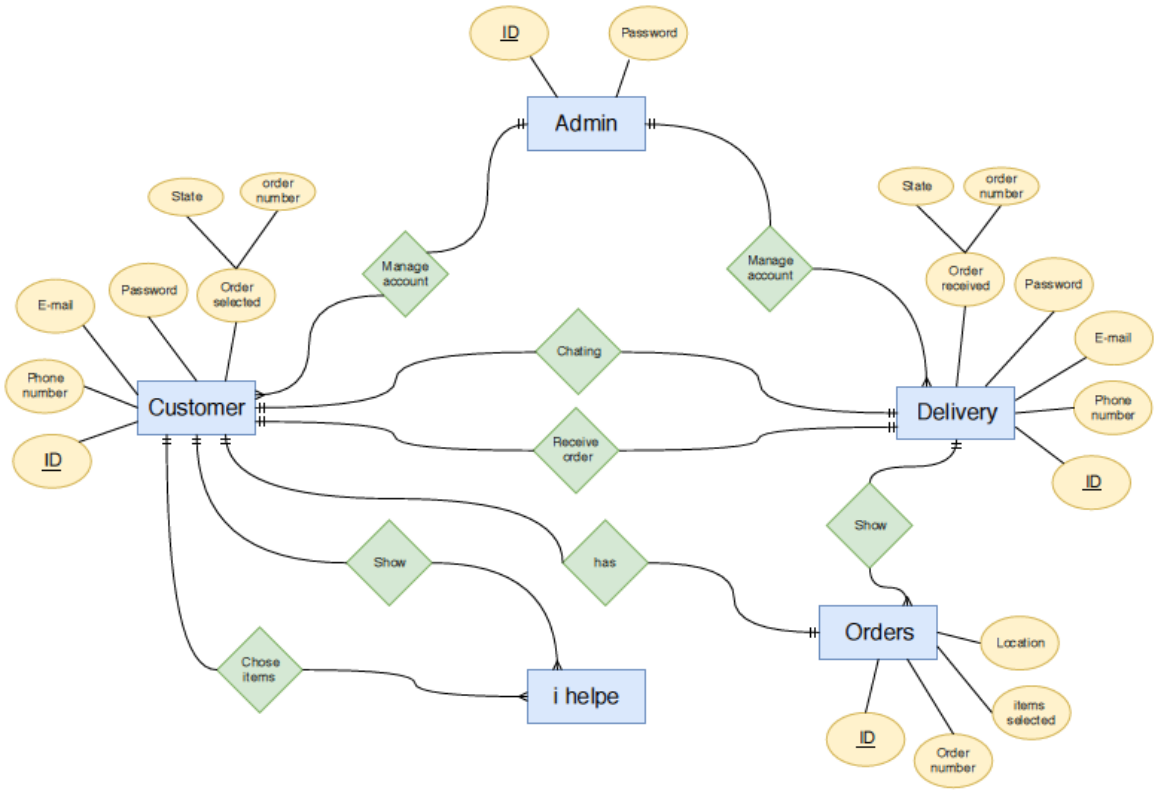

Figure 6. ER Diagram for the proposed system

4. Results and Discussion

The study aims to develop an application to help users who have been entering a particular city for the first time and would require certain services. The services are available to users who have already registered and are working in the system. The services offered by a particular user in the system shall be made available easily with the help of those concerned who are going to help. The system design will consist of various goals as follows:

- Any registered user will be having the application accessed easily.
- A registered user can make use of the website also to order for the request of services.
- A user will be able to log into the system to obtain a particular set of services.
- The user will be able to browse a catalogue for the services that are available in his locality and near to his location.
- The user will be able to apply for any of the services. Depending on the number of services that are available.
- The users who are readily online available to help will be seen inside the system can come for the help of a particular user.
- The users who will be able to provide services at a particular specific time shall be available inside the system whenever it is required and searched.

- The services will be delivered depending on the requirement of the user as it is demanded by the one who had required the services.
- The availability of services will be available inside the system as a mark of online services.

5. Conclusion

An intelligent system capable of delivering the above-stated points is developed in this study. This ensures that the services needed by the people are available on the move. The system can provide proper real-time information, and users will be able to access it upon appropriate registration.

6. Future Enhancements

There are several future enhancements, such as integrating payment systems, linking the system with the motion timeline, availability of advertisements in the application, etc. However, these enhancements will be reflected in further versions of the system.

Declarations

Source of Funding

The authors declare that they had no funding for this study.

Conflicts of interest

The authors have no competing interests to declare that are relevant to the content of this article.

Consent for Publication

The authors declare that they consented to the publication of this study.

Authors' contributions

All the authors took part in literature review, analysis, and manuscript writing equally.

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