

INTELLIGENT MOBILE APP FOR FINDING PATH AND TRACKING POST PACKETS USING ANDROID PLATFORM

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Abstract

Postman is the person who delivers letters manually. However, with the invent of technologies and innovative mobile applications it is possible for postman to have an application support for delivery and tracking of letters. This is the motivation behind this paper. The purpose of this paper is to design and implement a mobile app that helps the post man and users in delivery and tracking of letters. There are two users who can use this application. They are user and post man. Both can use the application with due authentication only. Postman should deliver the packets with the shortest path from one address to other address without missing any packet. The application should facilitate freelance features like one can register as a postman with valid work identity and can work as a postman in delivering the packets. The application can provide more features as relevant to the theme of the application.

Index Terms – Mobile app, Android, path discovery, tracking

1. INTRODUCTION

Post man serving manually may be time taking and error prone. To avoid this problem, in this paper we proposed an application that can serve postman and users. Users who take post office services can be able to use this moile application in order to track their posts. At the same time, the postmen can use this application to know shortest path to different destinations and provide timely services. The functional requirements of the proposed application are as described here. Postman should be able to register. Postman should be able to login. Post man should be able to post messages. Post man should be able to find short path. Postman should be able to track details of packets. User should be able to register. User should be able to login. User should be able to view details. As explored in [1]-[10], many researchers contributed towards mobile application development.

Our contribution in this paper is the mobile application named Postman, which is built using Android platform. The application has been tested and it is serving the intended purposes. The remainder of the paper is structured as follows. Section II provides review of literature. Section III presents the proposed system in detail. Section IV presents experimental results while section V concludes the paper.

2. PROPOSED APPLICATION

The proposed postman application has user-friendly interface and important utilities that serve both postmen and users. The utilities include tracking and finding shortest path. Users who take post office services can be able to use this moile application in order to track their posts. At the same time, the postmen can use this application to know shortest path to different destinations and provide timely services.

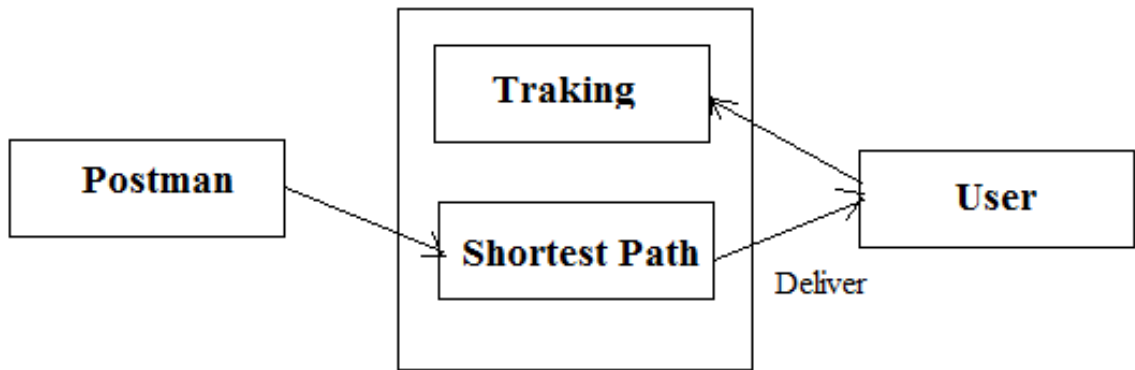


Figure 1 – Architectural diagram

As shown in Figure 1, it is evident that the architectural diagram shows different activities between user and post man. The activities include tracking, shortest path, and delivery .

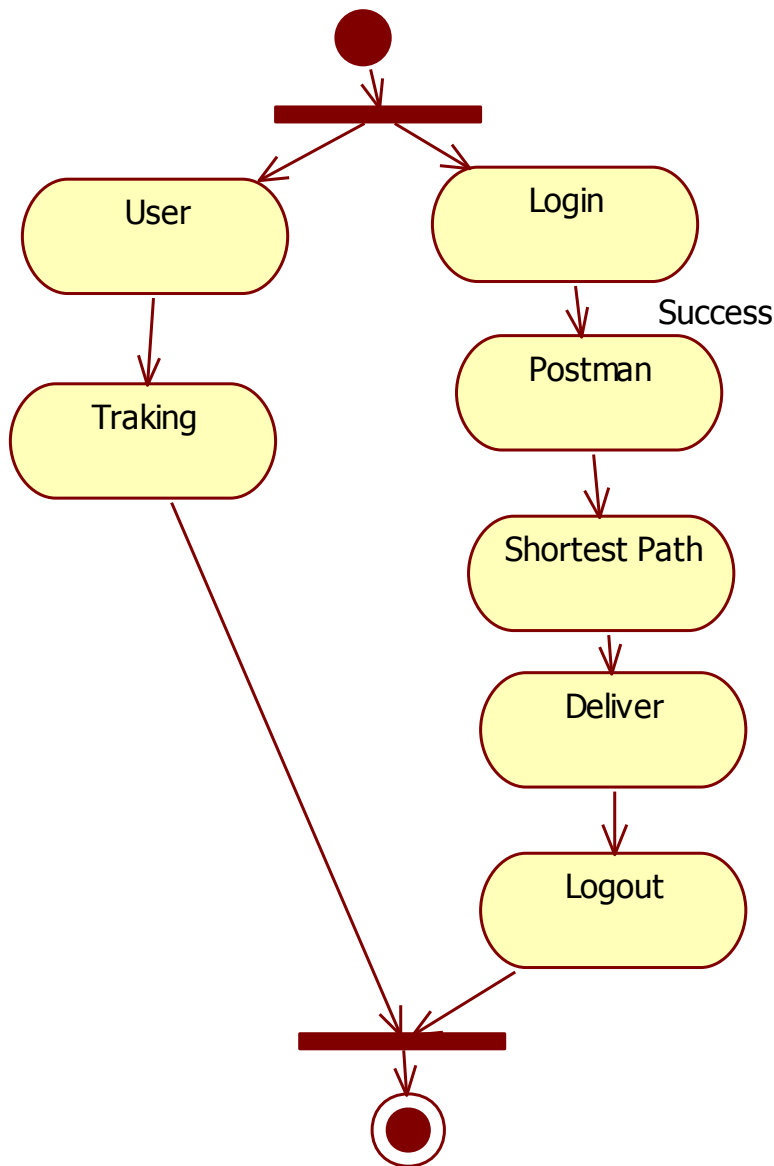


Figure 2 – The activities of the two roles involves in Postman application

As shown in Figure 2, it is evident that the postman application has two roles such as post man and user. The postman role is able to login, find shortest path and deliver packets. Whereas, the user can login and view or track the progress of the sent packets.

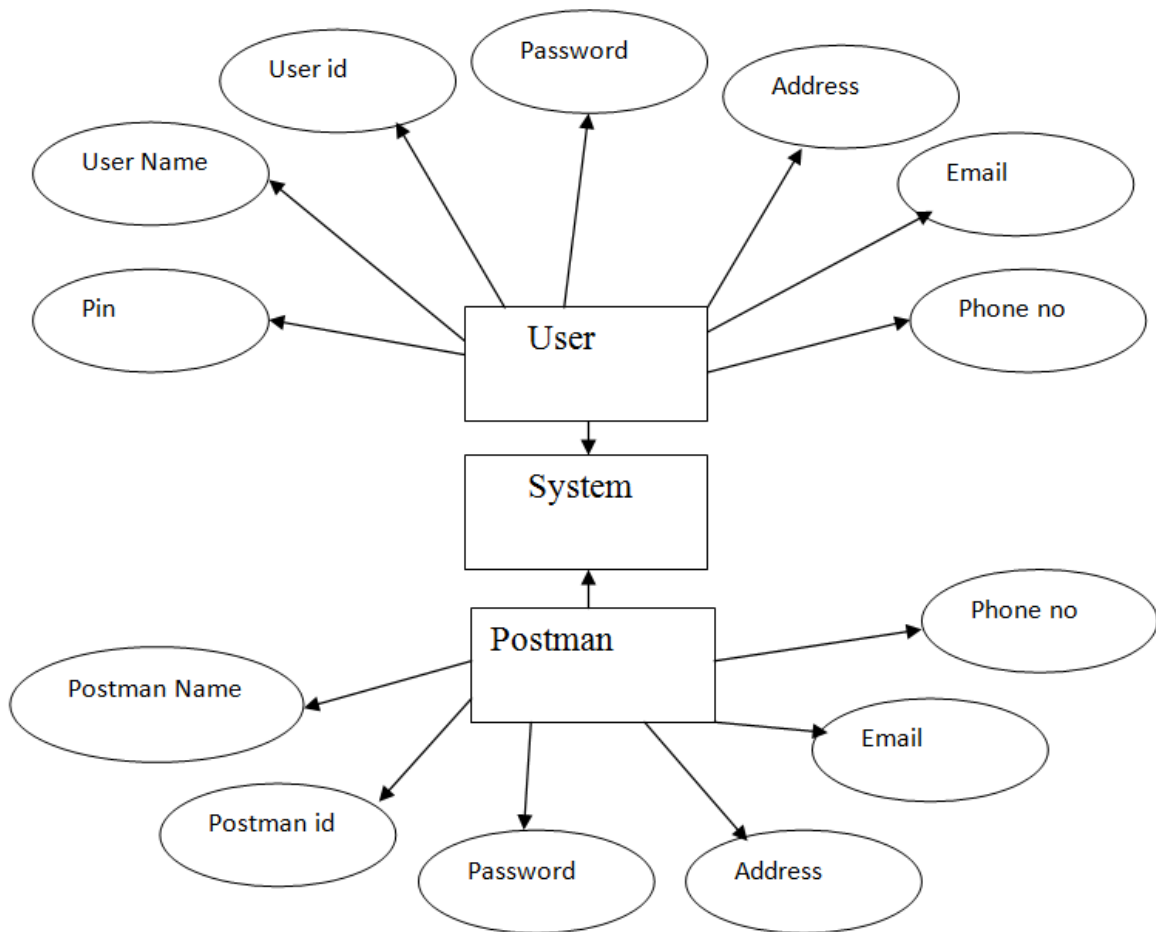


Figure 3 – Backend of the system

As shown in Figure 3, there is backend where data is stored. SQLite is the backend in which the database is created. The entities, attributes and their relationships are presented in Figure 3.

3. IMPLEMENTATION AND RESULTS

This section provides the implemented application details and the screen shots. The application facilitates the users and postmen to gain access to their functionalities.



Fig 4: Flash Page



Fig 5: Login Page for the both Postman and User



Fig 6: User Registration Page

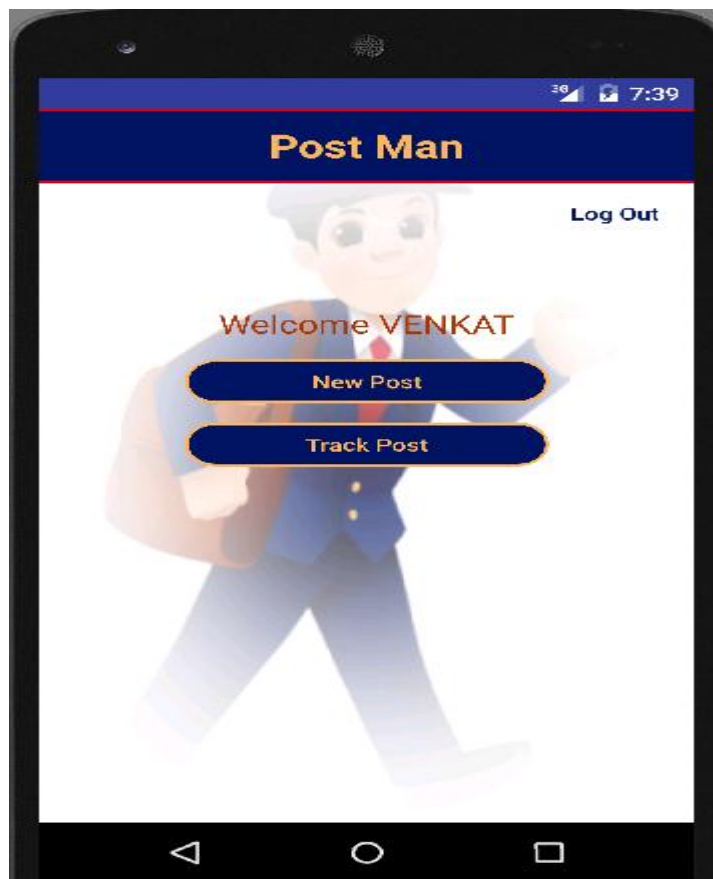


Fig 7: User Home page here the user can send new post and he can track post



Fig 8: User Post page



Fig 9: User tracking Page



Fig 10: User selecting the Postman availability



Fig 11: Here the postman finding the new messages



Fig 12: Here the post packets are ready to shipping

As shown in Figure 4 through Figure 12, the post man application is able to provide both finding shortest path and tracking of packets functionalities as intended.

4. CONCLUSIONS AND RECOMMENDATIONS

In this paper, we focused on building a mobile application that caters to the needs of postman and users. Postman can use this application for finding shortest path between two destinations or between source and destination. This activity can provide postman with best possible path out of many paths. Thus postman can use shortest path and can reach destination faster. Therefore, the proposed application is able to save time of postman and it also improves customer satisfaction with timely delivery of post packets. At the same time, the application is also helping users to track their posts and be informed about the status of their post packets. The application is built using Android mobile platform. The proposed postman application is evaluated with different kinds of inputs and it was able to serve the aforementioned two purposes. They are finding shortest path and tracking of postman packets. In future, this application can be improved with other technologies like Global Positioning System (GPS) to make it location-aware.

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