

An Integrated Management Platform for Subscription of Magazines

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Abstract - In today's age of modern technology, one of the commonly seen age-old practices both in rural and urban areas alike is the use of registers to keep track of newspaper, and magazine subscribers and manual calculation of their fare each month. This results in more time consumption for doing basic tasks such as adding the details of a new subscriber, updating, and managing the details of the hundreds and thousands of already existing subscribers, and calculating the individual fares for their respective subscription. There is no proper database used to store and maintain the information. To solve this issue, we have come up with a system to implement an integrated platform for efficient subscription management system.

Key Words: Mobile Application Development, Subscription Management, Security, Android

1. INTRODUCTION

Newspapers are rich source of information. Lots of people rely on newspapers for learning current affairs and world happenings. Newspaper reading as a habit is very good for everyone. Many people still read newspapers despite the popularity of news apps.

Research shows that people still prefer making decisions based on the information they find on printed newspaper. Now there is a trend to reduce screen time, which is possible when people read printed newspapers and magazines instead of relying on digital platforms for reading newspapers [1]. So, to encourage people to do the same, our approach is to make the subscription process easy and flexible by creating an application [2].

We have come up with a system to implement an efficient subscription management system. Subscription management is nothing but a systematic way of storing and managing the details of the newspaper/magazine subscribers, their subscriptions, and other details such as contact and address information making it easier for the vendors to retrieve the information when needed. All this information will be stored in a common database.

Along with this, the vendor can also store details about the newspapers and magazines that they deliver. The subscribers can access this system and can use it to add a

new subscription, update their contact or address information or to make payments. All the manual difficulties in managing the records by the vendors can be rectified by implementing this system.

For the vendor, the system aims to provide a systematic approach to add and store the details of new subscribers and their subscriptions and other details such as contact and address information, to view the information and details of already existing subscribers and their subscriptions and to view the list of newspapers and magazines and their respective number of copies.

For the customers, we aim to provide them with a platform that can be used to take a new subscription for newspapers and magazines, to update their already existing subscription and to be able to make use of various modes of payment to pay the monthly or yearly fare for their subscription.

2. BACKGROUND

The main goal is develop a system that helps with time management and helps with easier management of hundreds and thousands of data with respect to subscribers and their respective subscription as well as details regarding newspapers and magazines.

A survey was conducted on the newspaper vendors highlighting the pain points of their sorting process and working [3]. It describes the evaluation of the same and proposes a tangible solution for increasing their efficiency. This is an industry serving a revenue of 290.4 billion rupees and 100,000 registered newspapers and periodicals (as of 2015) that is predicted to only grow with civilization. User surveys were carried out along with a questionnaire to understand the working methodology. Insights suggested that the vendors maintained manual records while arranging bunches of newspapers leading to errors and delays in an industry that functions on time and speed. Each vendor had approximately 600-700 papers to sort every morning. To considerably reduce the temporal demand in these situations, a design intervention was proposed for the newspaper distributors and vendors using the trending technology of this time - wearable's. These currently manual tasks can be made faster if digital assistance is provided. The presented solution can be further used for occupations

functioning on time as a defining factor, especially for similar unorganized sector businesses.

The Android platform has displayed a pervasive expansion in customer electronics within the last years. Optimized for low performance and battery-powered devices this platform is qualified for an industrial usage of handheld and fixed mounted equipment. An approach was shown using the Android platform in an industrial control and analyzes application on a mobile handheld device to show the ease of using the rapid prototyping development availability with the Android framework [4]. Including the development, environment and build process, it shows the benefits given by the Android Development Tools (ADT) user interface. The development of user interfaces can be done statically via XML configurations, dynamically via Java code executed on the virtual machine or as a mixture of both. The framework brings the modern software development methods to the embedded hardware environment. Therefore, the user interface is optimized for touch screen devices but also supports common human interface devices (HID) like mouse, joysticks or hardware buttons. Additionally, it proposed a low-level hardware connection using an USB OTG port for a unidirectional communication between the control and analyze application on the handheld device and the device under test (DUT). The proposed application shows the general usability of the Android platform as an effective framework for interface design for embedded systems with focus on rapid prototyping, low-cost development using well-known software modeling techniques and a modern UI appearance[5]

In the advancing world of technology, Mobile applications are a rapidly growing segment of the global mobile market [6]. Mobile applications are evolving at a meteor pace to give users a rich and fast user experience. In this paper, Android mobile platform for the mobile application development, layered approach and the details of security information for Android is discussed in [7]. Google released Android which is an open-source mobile phone operating system with Linux based platform. It consists of the operating system, middleware, and user interface and application software. Certainly, Android is about to become the most widely used OS on mobile phones, but with Android comes a security vulnerability that few users take into account [8]. On Android Market, where you can download thousands of applications for Android, anyone can upload their programs without having to submit them to careful security checks. This makes Android a prime target for computer criminals. In this paper, we discuss a layered approach for android application development where we can develop application which downloads data from the server. Also, an Android Application Sandbox (AASandbox) which is able to perform both static and dynamic analysis on Android programs to automatically detect suspicious applications [9].

We have also conducted a survey among the newspaper vendors in our localities and it was found that all the work was being done manually. From adding the details of new magazine and newspaper subscriptions to calculating the monthly fare, everything was written down in registers. There is the absence of a system that could do the daily transactions in the industry in an efficient and faster way and also a proper database to store these details.

3. METHODOLOGY

Our application aims to provide a platform for newspaper/magazine vendors as well as the subscribers in a locality. For ease of use, we decided to implement it in the form of a mobile application.

To use this application, internet connectivity is required along with a Smartphone. The vendors can enter their mobile number into the login field and get an OTP sent to the entered mobile number. The OTP can be entered in the password field and the vendors can get access to the system. Once that is done, the vendors can perform a number of actions which will be explained in detail. Similarly, the subscriber can access the system in the same way. All the records that are stored manually can be stored in a centralized database.

The use-case diagram for vendor is shown in Figure 1, where we can see the different actions performed by the vendor via the vendor side of the platform.

Here is how the vendor can use the system.

- The vendor can login to the system using their unique vendor id and password.
- He/she can then perform the following actions:
 - Add new subscribers and subscriptions.
 - Delete already existing subscribers and subscriptions.
 - Search for details.
 - Calculate fare.
 - View subscribers and subscriptions.
 - Edit details of already existing subscribers.
 - View the list of newspapers and magazines and their details.
- He/she can then logout of the system.

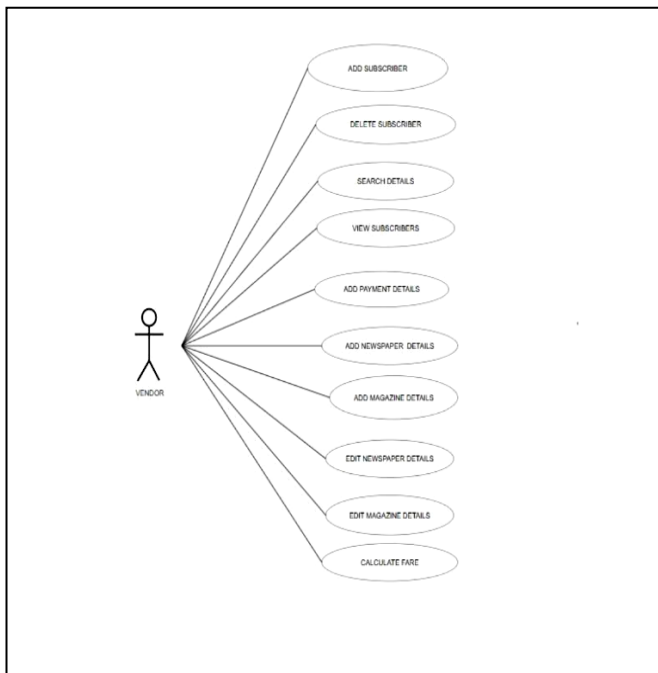


Fig -1: Use Case Diagram for Vendor

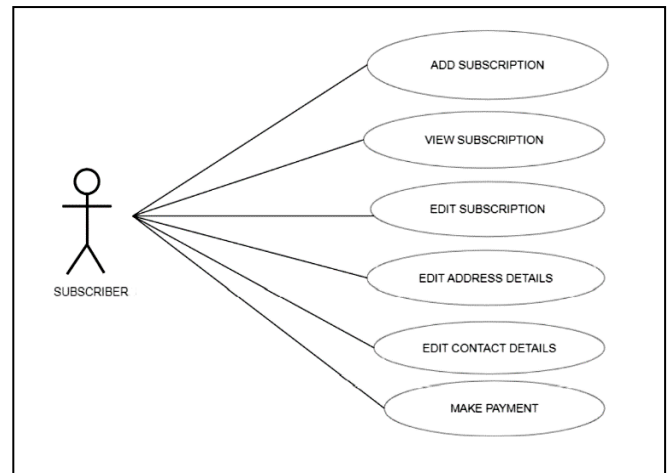


Fig -2: Use Case Diagram for Subscriber

4. RESULTS

The sample screen shots of the built application are shown in Figure 3, 4 and 5.

The use-case diagram for subscriber is shown in Figure 2, where we can see the different actions performed by the subscriber via the vendor side of the platform.

Here is how the subscriber can use the system.

- The subscriber can login to the system using their mobile number and password.
- He/she can then perform the following actions:
 - Add new subscriptions.
 - View subscription.
 - Edit Address details.
 - Contact details.
 - Make payment.
- He/she can then logout of the system.



Figure -3: Application Login Screen

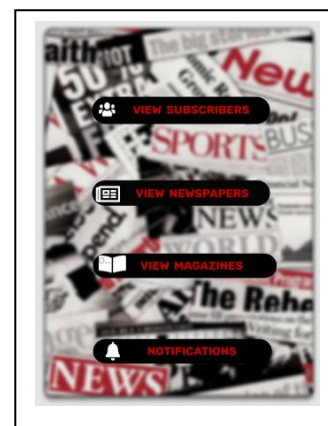


Figure -4: Vendor Screen

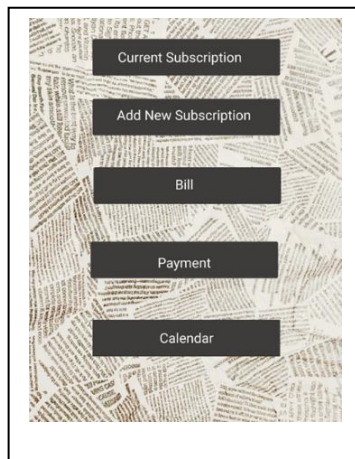


Figure -5: Subscriber Screen

5. CONCLUSIONS

This system aims at providing a systematic approach in the management of records for the local newspaper/magazine vendors. It is an efficient system that helps with time management and helps with easier management of hundreds and thousands of data with respect to subscribers and their respective subscription as well as details regarding newspapers and magazines. The system aims to provide a centralized database to store the huge amount of data and to completely eradicate the use of registers for manually storing the details of subscribers and their subscriptions and to automate the fare calculation process. The implementation of this system will help with the management of the huge amount of data as well as reduce the time required in doing basic tasks such as entering the details of a new customer, updating the address details or contact details of already existing subscribers, updating the already existing subscriptions details, etc and it also provides a platform for the subscribers to update their details, their subscriptions, etc from the comfort of their house. Cost of setting up the proposed system is negligible compared to the use of registers in the current system. Hence it can be concluded that using this system we can help the local newspaper/magazine vendors by providing a systematic approach to the management of subscriptions and help an industry that is quite neglected in our society.

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