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Marker Based Notice Board Using Augmented Reality Android Application

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Abstract: Augmented Reality (AR) is an improved version of reality created by the use of technology to overlay digital information on an image of something being viewed through a device (such as a smartphone camera). Augmented Reality has great potentials in displaying notifications, more specifically in displaying notices. This interesting technology can be implemented for displaying the notices on notice board using a mobile phone application with high efficiency in school, colleges and business. Using this technology with its relevant tool students can view notices on notice board. An Innovative way of viewing notices is made possible when augmented reality is used as an application. This paper describes how marker-based AR application can be used for both uploading and retrieving the notices and how marker processed as an image while visualized it as a 3D object. Finally, this paper concludes that AR is useful for viewing the notices on notice board using augmented reality.

Keywords: Augmented Reality, Marker-based AR applications, AR Notice Board, Firebase, Google Vision.

I. INTRODUCTION

In every organisation, notice or circular is the medium by which the people can get notification or any information about something. Example, notice regarding exam time table, submissions, events, etc in schools and colleges. Every time someone has to pin the new notices and unpin the notices that old or the event described in notice was happened or the notices that are not required. This process consume time. This augmented reality based android application provides a way by which the notices can be uploaded and can be viewed by the user. In this project, one of a very trending technology Augmented Reality is used for scanning the particular marker by a camera of a mobile phone using android application and depending upon the marker, the notices can be viewed by user and can be saved for future use. The admin or a particular person have a right to upload, delete and to view the notices. In this application specific registered student of college have right to scan the marker that is the name of college department, and as application detects the marker, the notices of particular department will be displayed. As notices are load, the student can save or download the notices for future use. The teacher is responsible to upload the notice with title, can delete the notice and also can view them in this android application. Marker based notice board using android application provides a new way to user to view the notices.

II. PROBLEM STATEMENT AND OBJECTIVE

A. Problem Statement

Today's world is very fast in getting information quickly and taking actions as soon as possible in all tasks. To generate the notice on a paper and then attach that notices on notice board takes some time and also some notices are of very urgent deadline. Every time pinning and unpinning notices on a notice board consumes time. For doing these tasks, it takes some time. The notices are also printed on a paper or on multiple paper which increases use of paper. After the time of event that was happened, the paper is of no use. The paper will be just a waste. After the student view notices, there is possibility that what exactly written in notices will not be remembered by the student. Something student will find and something not. Also, toady's generation is finding a way to experience the things in a new way.

B. Objective

Our objective is to provide a new way for a student to view the notices and information in timely manner, to reduce the use of paper, to reduce the time to make availability of notices for student, to eliminate the overhead of pinning the notices, to make a use of notice anywhere, at any time and in future use also.

III. PROPOSED WORK

To achieve our goal or objective to provide a new way for a student to view the notices and information in timely manner, to reduce the use of paper, to reduce the time to make availability of notices for student, to eliminate the overhead of pinning the notices, to make a use of notice anywhere, at any time and in future use also, we make an marker based augmented reality android application.

This android application can run on various android platforms. The notices can be upload by the teacher and can be viewed by the student. In this mobile application, student and teacher must need to get register first to use the services. In this application specific registered student of college have right to scan the marker that is the name of college department, and as application detects the marker, the notices of particular department will be displayed. As notices are load, the student can save or download the notices for future use. The teacher is responsible to upload the notice with title, can delete the notice and also can view them in this android application. Marker based notice board using android application provides a new way to user to view the notices.

To make this android mobile application, we used Android Studio 3.0.1, an Integrated Development Environment(IDE) for the development of mobile android application, Google Firebase as a database for storing notices of different departments and Google vision for augmented reality for scanning the marker of different department of the college. Depending upon the Google Play Service version, the firebase and google vision service is used by the mobile application device.

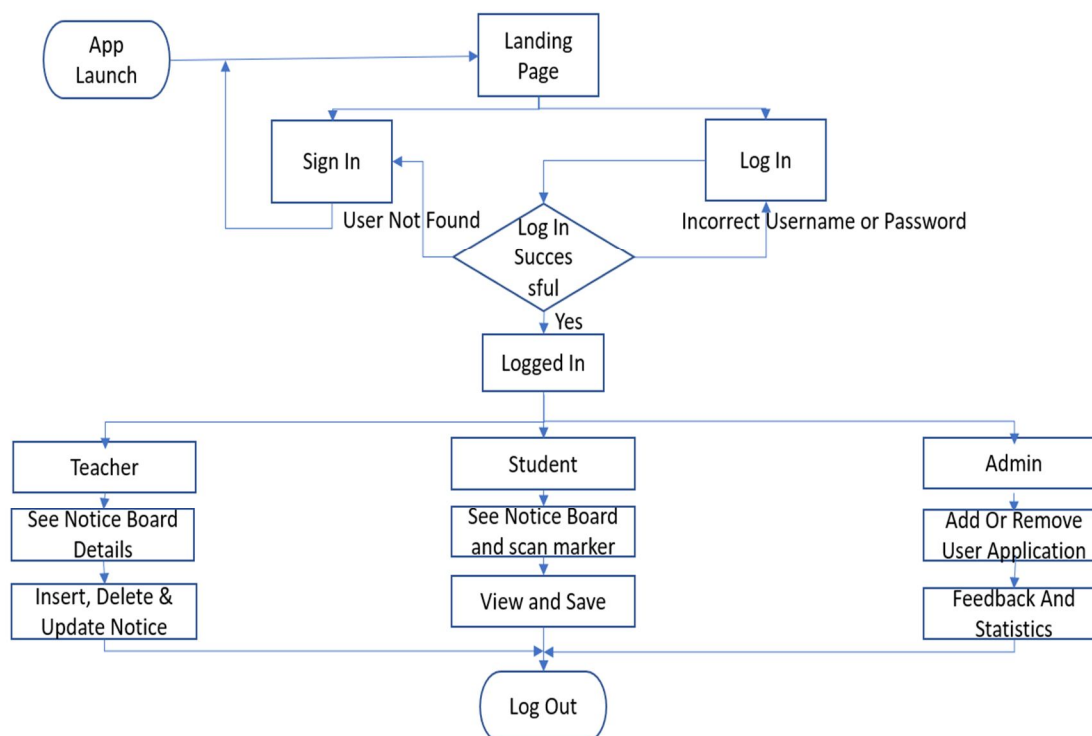


Figure 1 – Flow Chart Of The System

IV. SOFTWARE REQUIREMENT

- A. Android Studio – We used Android Studio 3.0.1 which is an Integrated Development Environment(IDE) for the development of a mobile android application.
- B. Google Firebase - Google Firebase as a database for storing notices of a different department.
- C. Operating System – Any Android operating system till Marshmallow 6.0, the application is compatible.
- D. Google Vision - Google vision is used for augmented reality for scanning the marker of different department of the college.
- E. Google Play Services – These are the services which are provided by the Google. The application will use these services for Google Firbase and Google Vision.

V. ADVANTAGES

- A. Each time to circulate the notice, first it must be printed and then that notice is pinned down on the notice board. So, using this application, there is no need to print and pin down the notices.
- B. Notices will be displayed faster.
- C. This application uses a mobile camera to detect marker and then he or she can view notices using same mobile phone, so there is less use of paper.
- D. The user can also save the entire notice board to view them in future.



VI. CONCLUSION

Augmented Reality technology can be used to display the notices by using an android application .With the use of this application, the teacher can easily upload notices and the student can view and save the notices on their mobile phone after they scan the marker.

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