COLLEGE ASSISTANT ANDROID APPLICATION

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Abstract-- The purpose of College Assistant is to automate the existing system which is manual, by using mobile devices and computer software so that the data that is important can be stored for an extended duration. Hence, retrieval and manipulation of records and files would become easier. It is a software system developed for a college for maintaining information associated to varied daily activities within the college. College Assistant is employed to keep details of various departments in the college, varied courses offered by the Schooler College, student details, notices, knowledge center, day-to-day attendance; exam marks details, internal marks details, exam timetable and daily schedule. As described above, the College Assistant can lead to errorless, secured, reliable and fast management system. Therefore, it will aid the organization in utilizing its resources in a better manner. The organization can maintain computerized records without redundant entries. It will incorporate NLP Assistant and QR code access for easy usage and speed, to input the user query and output the required data. The memory allocation for storing any piece of information, data and records will be dynamic, providing feasibility to the users.

Index Terms -- Android application, NLP Assistant, QR code access

I. INTRODUCTION

NLP has been used to develop College Assistant to eliminate the issues faced in the existing manual system. This software is designed to eliminate the issues faced by the existing system. Moreover, the College Assistant is designed as per the requirements of the college. It will help the college to carry out tasks in a smooth and effective manner. Entering student details manually in distinct records introduces complication and takes considerable time as well. Maintaining and updating such records manually increases the odds of errors. The system application is designed to lead to a secure and consistent management system. This system will help to minimize the use of paper and therefore it will aid the organization in utilizing its resources in a better manner. Every organization, whether big or small, has to maintain precise records and managing the information of Course, Schedule, Faculty, Exam, Students is of great importance to college. This is designed to plan a strategy and to ensure that the organization is equipped with right level of information and details for future use. This system will ultimately allow staff to better provide resources to students as well as assist them in easy record-keeping.

II. PROPOSED SYSTEM

The College Assistant software portal has been developed with an aim to assist in maintaining lecture details, student attendance, and student semester marks managing system. Students will use this system from anywhere to know about details on attendance and marks and use knowledge centre and notice board to better educate himself. Student can view his/her daily lecture schedule as well as upcoming exam timetable online. New data such as marks are updated by the administrator or a lecturer which is available for students to view. The login to student's account will be secured with QR code for ease of access multiplied with security. This system will have NLP assistant to aid in easy input and precise output.

III. AIM AND OBJECTIVE

Managing the details of the College, Student, Course, Batch, Faculty, and Session is the central objective of the College Assistant. This project aims to implement an android application program to minimize the manual work for organizing the College, Course, Student, and Faculty. It aids in maintaining all information about attendance, marks, notices, schedule, timetable, knowledge centre.

IV. EXISTING SYSTEM

The existing system in the college for taking attendance, viewing time table, giving important notices, sharing notes, exam schedules and displaying results is done manually, which is time consuming. Attendance is taken manually during each lecture and practical. Providing notes causes a lot of difficulties as it introduces inconsistency in data. Notices related to holidays, events, workshops, lectures schedule and exam timetable are displayed on the notice board. The notice board is also used to display the end semester mark sheets. Human resources and manpower effort are required for this task and it also results in wastage of

stationary products. The launch of computerized and automatic environment replaces all these issues.

V. METHODOLOGY OF IMPLEMENTATION

5.1 Block Diagram

The block diagram shown in figure 1 shows the various components of the College Assistant system. Users of the system can acquire required information stored on the server through the assistant application. The admin application is specifically designed for the admin to update the system. The assistant application has various modules such as attendance, marks, notice board, timetable and data sharing.
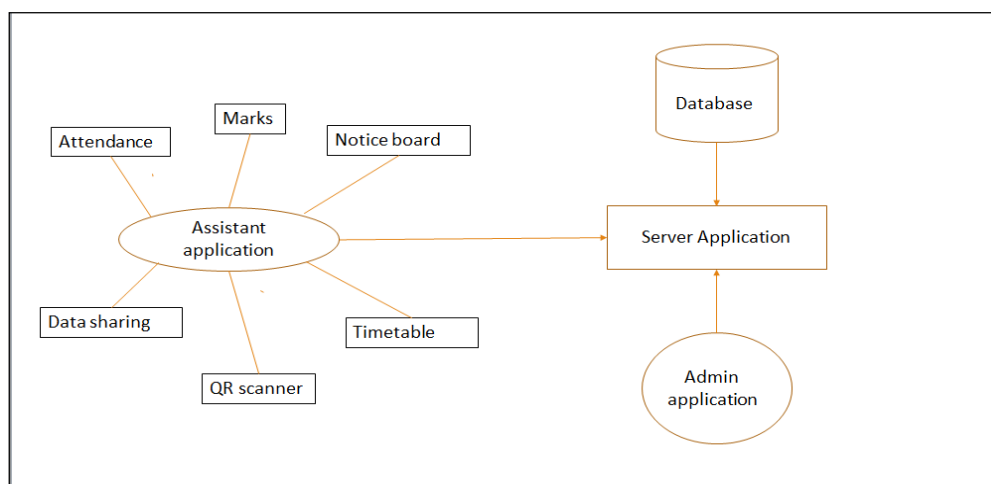
Fig.1.Block Diagram

5.2 Algorithm Explanation

A. Accept user input through Query or GUI
B. Pass user input to server
C. Transform input query into a SQL query to acquire the desired data from intent
   - Tokenization using nltk library
   - Search for one of the following intents: marks, attendance, timetable, notice
   - If any additional information is required to process the query, ask the user
   - Retrieve desired output from database
D. Return the output to the user
E. End

5.3 System Specifications

Client-side requirements

- Operating System: Android
- Storage   : 200MB minimum

Server-side requirements

- Hardware Requirements
  1. Storage   :   20GB
  2. RAM   :   4GB or more
  3. Internet connection
- Software Requirements
  Python, MySQL

Technology used: Android Studio

Android Studio is developed on the IntelliJ IDEA. It is the standard IDE for building android-based applications. A Java integrated development environment is used for project software. This android application is developed using Android Studio to acquire flexibility in Gradle-based system. It is used to facilitate application development within the Android OS, it also uses an emulator. Projects built in this have multiple modalities like Android application modules, Library modules, and Google Application Engine modules to encompass modern features and innovative technology. It offers support for a theme of drag and drop editing in a creative layout editor.

5.4 Working

5.4.1 Login to the system

Initially, the user can login to the system using registered college ID and password or via QR code. Once the user logs into the system, the user file will be stored in database and further access will not require login credentials (i.e. user will be directed to Homepage).
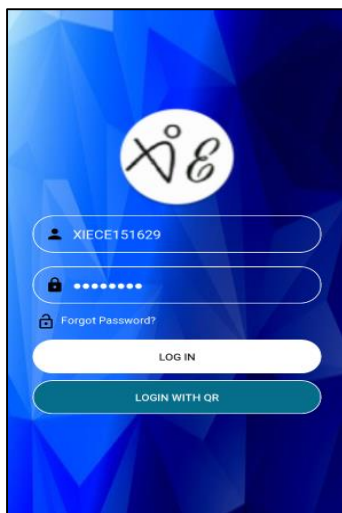
Fig.2.ID Login

Fig.3.QR Login

5.4.2 NLP Assistant

User can enter text-based or voice-based natural language query for quick and easy retrieval of data.
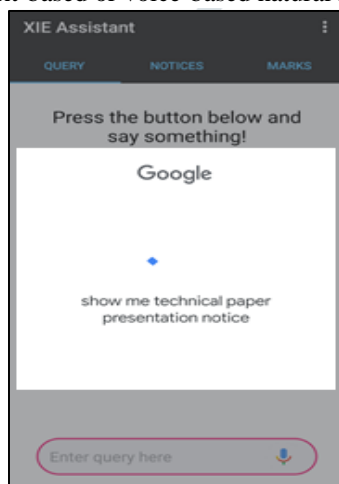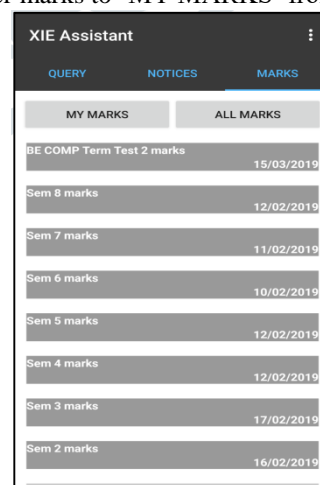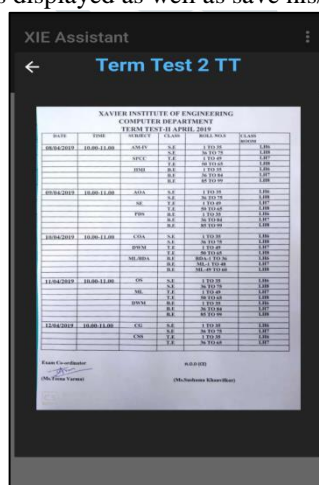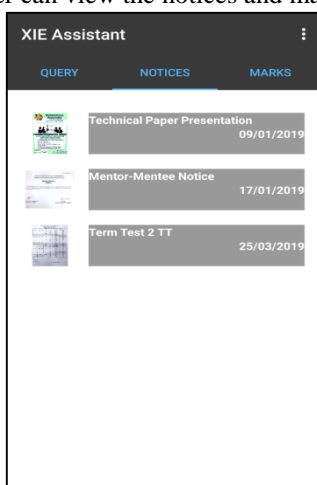

Fig.4.Voice-based NLP

Fig.5.Query-based Data Retrieval

5.4.3 Notice Board and Marks display

User can view the notices and marks displayed as well as save his/her marks to 'MY MARKS' from 'ALL MARKS' tab.
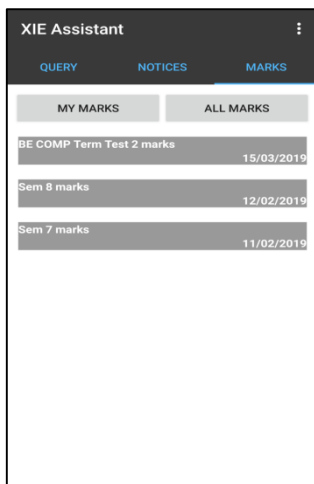
Fig.6.Notice Board   Fig.7.Notice display   Fig.8.All Marks   Fig.9.My Marks

5.4.4 Profile, Data Sharing and Attendance

Profile will display the user specifics like details registered with college, course, college ID and more. Data Sharing will contain all the files shared by Professor. These files will be available for downloading to students. Attendance will contain the attendance lists uploaded by Professor.
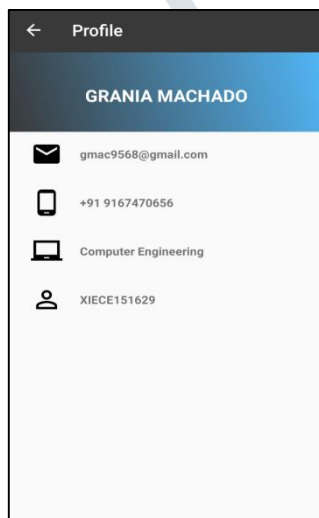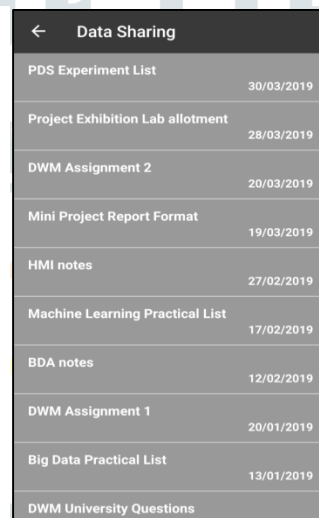

Fig.10.Profile   Fig.11.DataSharing   Fig.12.Attendance

VI. CONCLUSION

This project is a humble venture to automate and ease the efforts required in managing operations of the college. User friendly GUI and text-based NLP Chabot will be offered to make the application interactive and to assist the users in an effective manner. Features and operations to provide automation will be performed. The system will be implemented and tested using test cases. The future scope of the project circles around providing additional functionalities like library management module, secure payment gateway, implementing backup mechanism and more.

VII. ACKNOWLEDGEMENT

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