

Voice Operated Library Assistant (An Android Application)

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Abstract— The paper title “Voice Operated Library Assistant (An Android Application)” is library management android application for monitoring and controlling the transactions in college library with voice command. Generally, library staff handle this task involve all the task like sorting, lending, returning, tagging, eyeing of books. In addition to this, library users encounter problems for finding, borrowing, localizing, renewing the book, queuing, and so forth. To overcome these obstacles and establishing the new way of book renting our application provide a smartphone app which is (Libro)Voice Operated Library Assistant (An Android Application)”. Mobile library services are an integration of traditional library service and mobile communication technology, from which readers can enjoy library services anywhere and anytime with voice command in their own voices. Through Mobile Library Application, the teaching and non-teaching staff of department would be able to easily check the book status, searching process to find their desired books or to use relevant services by using voice input and output.

Keywords- Android, Smartphone Application, Voice Assistance, Library Management Application.

1. INTRODUCTION

Traditionally, library systems are implemented manually which is Very costly, time consuming and require human interaction. This application improves the communication between user and library systems, books are there for updating their knowledge and skills, and to provide them information regarding to what they want. Basically, user is considered as a student and this user interact with our system with voice command. Through voice command they can check the availability of book, related documents and information, issue the book very instantly. Libro is refers to smartphone application with simplifies the library scenario and also provides freedom to respective user. This era known as era of science and technology & Now a day’s voice assistant system is implemented everywhere with IOT environment. This app is very useful for finding and location the book in library also after user get the book information, he/she can make the entry of that book with voice command. Voice input pretended in English (US) language only also voice and pronunciation is with respect to English (US)Only.

2. RELATED WORK

We took a survey of our faculty of Computer & IT Department of TSSM college, Narhe, Pune. The aim of the study was to investigate the effectiveness of the computerized library system in order to support the continuous learning in various scenarios. Primary goal is to compare the traditional and the computerized way such that the pros and cons are identified. Then second goal is the survey through which we get the information user need system that works with the voice command we asked the faculty to operational process regarding to library book transaction. User has its own id code which generated by the android application for identification purpose. Library has e-books which can be read through internet access and just by logging in into the system.

Major transactional data and user behavior is studied as follow:

- How frequently they visit the Libraries.
- How they find the book and get related information
- How they report the information to librarian
- How they get the book for certain period
- Afterward how they return the book and related procedure

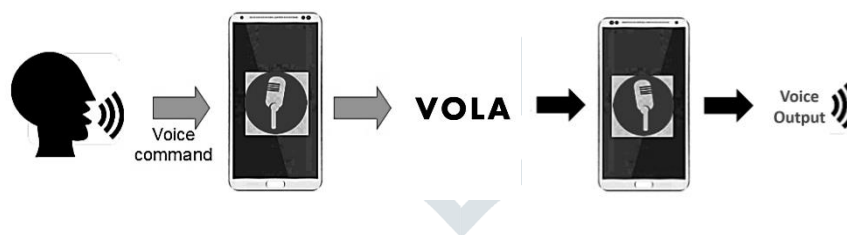
3. MOTIVATION

The interaction between user and librarian should be digitalize by utilizing the technology also we have many smart devices that work well with the internet and various databases. The major benefit with this type of devices is we get ready made platform where our system can run and we get many features like speech synthesis & processing, machine learning & voice command operation. The library methodology should be improved through these features by implementing the android technology. In our android application Library operation done via users' voice command only.

4. METHODOLOGY

There are two point of communication user at one side & system on another. Basically, methodology follow the below steps:

- User has opened up the smartphone application.
- Sign In Required.
- Pre-default setting are initiated.
- Click on mic button for voice input/command.
- User tell to search functionality.
- Then submit the voice input to the system.
- App gets the information and process further data.
- Result get displayed on the display.
- For specific condition user get voice output from android application.
- For issuing the book and return book operation user has to login with there own login id and password.
- Logging in is must for book transaction process.
- Book transaction OTP code generates.
- Code is required to complete the transaction(physically)
- Further actions are done by the library staff.
- Book is ready to deliver on the desk of library.



5. IDENTIFICATION OF REQUIREMENTS

a. Functional requirements:

Liberian level (not voice operated)

- Librarian- Librarian can login and access the required information.
- Security- No normal user should be able to login with admin privilege except the librarian.
- Acceptance for request – book is issued after approving the request.
- Update member information- Updates of no. of books issued, any change in personal details
- Update book details- Librarian can add new book details, change the status of book (whether available or not available).
- Book issue/return- This module enables to keep track of issued books and returned books details with date and time.

User Level (Voice Operated)

- User – User Can Login with their own login id and password.
- Fetch the book info – by using voice command user get the result.
- Issuing the book & return the book in limited period
- After limited period notification popped up
- For late return user should go to library and pay the penalty.

b. Non-functional requirements:

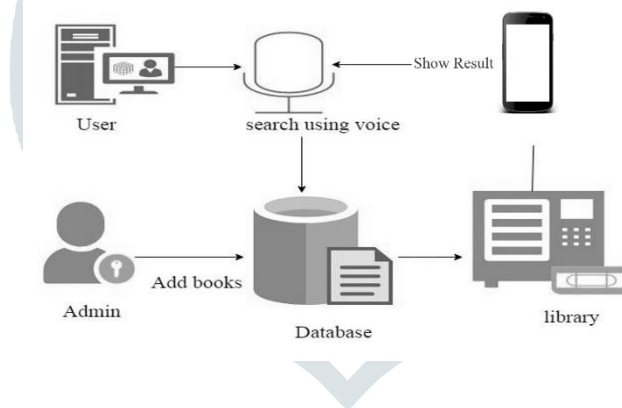
- Security Requirements- Normal users can just read info, cannot modify anything except their details.
- Performance- Should be fast and accurate. System should be able to handle large amount of data.
- User-friendly- the system shall be very interactive.
- Maintainability- backups for database must be available. Maintain the time bond with personal and respective database also with UI element.

6. SYSTEM ARCHITECTURE

The application is based on android system and programmed in java programming language. Any education institute and government can make use of it for providing information about author, content of the available books etc. This project can further be extended by adding the facility of e-book's, to over-come the problem of book stock in library.

Software Quality Requirement

- Availability: the product will recommend will as per specs.
- Correctness: the dataset will be there.
- Maintainability: the administrators should have to maintain the database.
- Usability: interface is very simple and communicative.



SYSTEM REQUIREMENT

For Client Side:

A Smartphone Device Based on Android OS.

For Developer-Side:

- Hardware Requirements:

PROCESSOR: dual core or higher

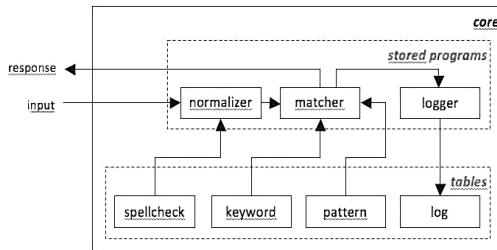
RAM: 1GB or more

HARD DISK 40GB or more

OPERATING SYSTEM: Windows 7 or higher

DATABASE REQUIREMENTS: Xampp MySQL

Other Software's: Relational Database, JDK1.6 and Android SDK.



Basic Structure:

- Client - Server
- User & System

7. CONCLUSION

The proposed system that we are going to develop will be used as the main performance system within the library of the institute which interact via voice command with the institute's staff and students. Therefore, it is expected that the database would perform functionally & all the requirements that are specified in survey will be fulfilled. The system shall handle high number of books and users without any fault. We use here digital library concept in our application we can provide voice command for search book. Then system show all books which are available in the library. Then user issue the book and return the book on application platform regarding there timebound and interest.

8. REFERENCES

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