

# MOBILE OPERATED CAMPUS APPLICATION FOR RETRIEVAL OF COLLEGE SERVER DATA USING WI FI CONNECTION

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**Abstract** – Currently, almost all universities offer their students access to e-learning platform in their websites, which contain the educational material of the subjects taught at the university, attendance, library activity, academic calendar etc., Although the aim of these e-learning platforms is the learning in virtual format, mainly they are used by the teachers to supplement the assignments and lectures. We don't know about the assignments posted in e-learning unless and until we open the website and check for the assignments posted in each subject. In the same way, we have to open the website to check for the attendance, timetable and any videos about our college. The principal objective of this project is to develop a mobile application which gives students access to a range of personalized information direct to mobile devices. It enables students to stay informed with the ease and convenience that mobility brings. The major asset and use of this application is that the students also can post the news, events and notifications of the college anytime and anywhere through their mobiles in this application and only to a particular group of people to whom ever it the notification concerns to. This application can be loaded in mobile phones which support java making it easier than ever to access University specific information on the go.

**Keywords** – Authentication; MIDP; e-learning; Mobile app

## 1. INTRODUCTION

Over the past few years, mobile web usage has considerably increased to the point that web developers and designers can no longer afford to ignore it. Mobile web access today still suffers from interoperability and usability problems [6]. Despite these shortcomings, many mobile web developers chose to create apps using mobile web. The distinction between mobile Web applications and native applications is anticipated to become increasingly blurred, as mobile browsers gain direct access to the hardware of mobile devices and the speed and abilities of browser-based applications improve. With the considerable rise in smart phones users, the mobile applications market proves to be a lucrative business for both developers and marketers.

In this paper, we have designed a mobile application whose objective is to provide students access to a range of personalized information direct to mobile devices [1]. Here, any user who needs to the access this app has to first get registered by the administrator (admin) of that particular organisation. The following outlines the various categories of content which will be available from within the application. Students can receive the latest University News, Events whilst on the move. They can view their course details assignments/lectures, attendance posted in e-learning site and their course/exam timetables. They can access video/audio from the University's Podcasting and Streaming service.

The rest of the paper is organized as follows. Section2 describes about various softwares used for the implementation of the project. Proposed project work is

depicted in Section3. Section 4 gives conclusion to the paper. Future Scope is pointed out in Section 5.

## 2. SOFTWARES USED

### 2.1 Front-End Platform (J2ME)

J2ME is targeted to devices with limited horsepower and is supported by 90% of new devices released to market. J2ME allows devices to browse, download and install Java applications and content similar to browser applications. Since J2ME applications are installed on the device, the applications can run without network coverage unlike browser applications that always need a connection. J2ME offers a way to enter and persistently store data on the device making applications faster and more user-friendly. J2ME has a programming language that is easy to master, a runtime environment that provides a secure and portable platform and a very large developer community. A java developer can quickly master J2ME coding conventions from smart cards all the way to high powered devices like high end PDA's.

### 2.2 Database (Oracle10g)

Oracle Database 10g Express Edition (Oracle Database XE) is an entry-level, small-footprint database that's free to develop, deploy, and distribute; fast to download; and simple to administer. Educational institutions and students who need a free database for their curriculum with Oracle Database XE, can develop and deploy applications with a powerful, proven,

industry-leading infrastructure, and then upgrade when necessary without costly and complex migrations. Reason for choosing Oracle10g is Oracle Database XE can be installed on any size host machine with any number of CPUs (one database per machine), but XE will store up to 4GB of user data, use up to 1GB of memory, and use one CPU on the host machine.

### 2.3 Application Server (TOMCAT)

TOMCAT is an open source, cross-platform Java EE-based application server. It is usable on any operating system that supports Java. Tomcat Application Server is the most widely used Java application server. Tomcat Application Server includes support for Enterprise Java Beans (EJB) which is designed to dramatically simplify the enterprise Java programming model. Tomcat Application Server provides the full range of J2EE 1.4 features as well as extended enterprise services including clustering, caching, and persistence.

### 2.4 WI-FI Technology

Wireless Fidelity, more commonly known as Wi-Fi, is an international standard from the Institute of Electrical and Electronics Engineers (IEEE) for wireless local area networks (LANs). Also known as 802.11b, Wi-Fi has rapidly become the most popular standard for wireless LANs in the workplace, public places and homes. Wi-Fi equipped corporate office campuses, hospitals and schools as well as homes and public areas such as hotels, airports and coffee shops are now commonly referred to as “hotspots.” IEEE 802.11b (Wi-Fi) is based on a cellular architecture where the system is subdivided into cells as shown in Fig 2.3, each cell is called Basic Service Set (BSS) which is identified by the SSID (Service Set ID) and each is controlled by Base Station called Access point (AP). The whole interconnected Wireless LAN including the cells and their different AP is called Extended Service Set (ESS).

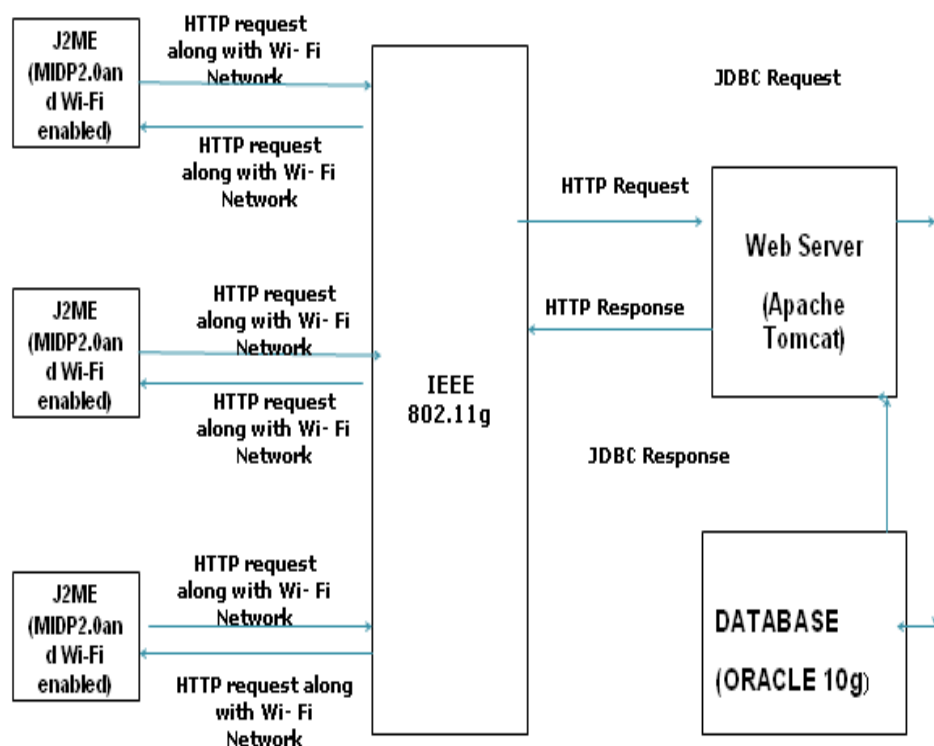


Fig 2.4.1 Technical Architecture

## 3. PROJECT

The project illustrated in this paper is entirely based on the idea of designing mobile app[2]. Here, the main objective of this project is to develop a mobile application which gives students access to a range of personalized information direct to mobile devices. It includes 4 modules: Login/Registration and Videos, News and Student Search, Alerts, Attendance and Library Activity. The process of figuring out the validate person is accomplished in the following manner:

### 3.1 Login/Registration and Videos

When we run the application, a login form turns up, allowing the user to enter the college id-no and password.

If user is not registered, then another button will be shown to invite students/professors to self-register. It also displays a link to retrieve a forgotten password.

The user who would like to access the application has to first get registered by filling the registration form, which includes the basic details. User has to enter his idno, name, password, date of birth, email-id, select whether he is student/professor and click on register. If the user fills all his details in the form then an alert 'Registered Successfully' will be shown and then home page will be displayed to the user.

Yall ABC

Welcome to KLUUniv

**Login Form**

KLU-IDNO:

Password:

Login > Register

Login

Yall

1 2 ABC 3 DEF

4 GHI 5 JKL 6 MNO

7 PQRS 8 TUV 9 WXYZ

\* . 0 # - +

SHIFT SPACE

Fig 3.1.1 Login Screen

Yall ABC

Welcome to KLUUniv

**Register Form**

KLU-IDNO:

y8em284

Password:

\*\*\*\*\*

user name:

swve

Email ID:

swveth.namburik@gmail.com

DOB:(dd-mmm-yy):

26-08-90

Designation:

☐ Student

☒ Professor

Register

Register

Yall

1 2 ABC 3 DEF

4 GHI 5 JKL 6 MNO

7 PQRS 8 TUV 9 WXYZ

\* . 0 # - +

Fig 3.1.2 Registration Screen

Yall

Home Page

KLU University

(KONERU LAKSHMAIAH EDUCATIONAL INSTITUTION)

NEWS VIDEO ALERT

Log out

Log out

Yall

1 2 ABC 3 DEF

4 GHI 5 JKL 6 MNO

7 PQRS 8 TUV 9 WXYZ

\* . 0 # - +

Fig 3.1.3 Home Page

After getting registered, home page of the application will be displayed to the user on which videos will be displayed as an icon. When we click on videos option a list of videos in the server will be displayed on the mobile from which user can select a video.

Yall

Welcome to KLU videos portal

**Videos Form**

Play List

☐ Play Simple Tone

☐ Play URL

☐ Play Resource

☒ Play Video

HOME

Exit Menu

Yall

1 2 ABC 3 DEF

4 GHI 5 JKL 6 MNO

7 PQRS 8 TUV 9 WXYZ

\* . 0 # - +

Fig 3.1.4 Videos Screen

When he select a video and click on play option it will be played on the mobile. It will be very useful as we can

watch our seminar/or any important videos of our college in our mobile with out opening college website.



Fig 3.1.5 Video Player

### 3.2. News and Student Search

#### 3.2.1. News:

When the user selects this icon on the home page of the app then titles of the news will be displayed as a choice group from which he can select one to know about it. The information about the selected title will be displayed in another form. This module is very useful as we can read the college news with out opening the website.

#### 3.2.2. Student Search:

When the user selects search [5] icon on the home page of the app, then an input text box will be displayed in which he has to enter the search name. The list of students with the given search name and information about the name will be displayed in another form.

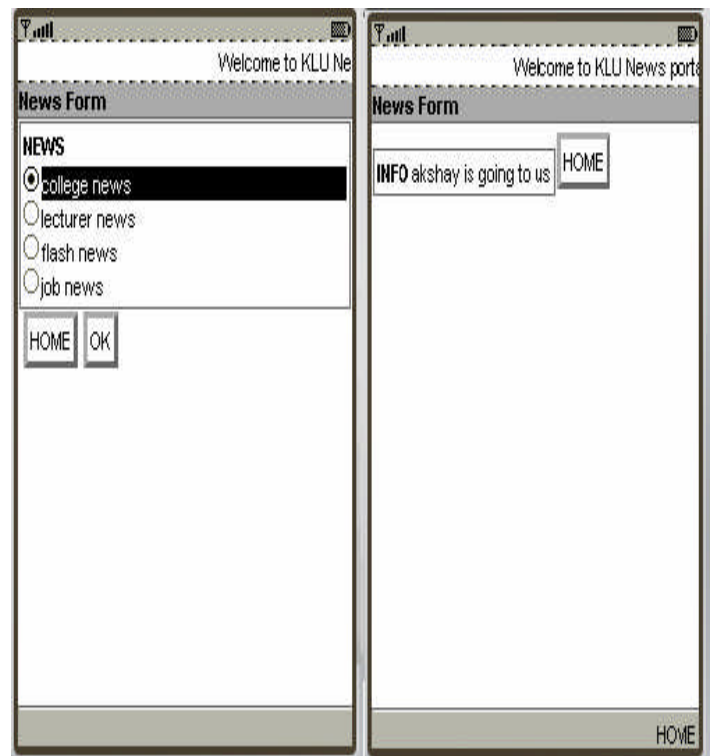


Fig 3.2.1 News Form

### 3.3 Alerts

On clicking the alerts icon on the home of the app it will re-direct you to the alerts portal. It is the only Function in which it is not a one-way communication but a two communication. It means that the user can not only read the information which is posted by another user (or an administrator) but also can post the information in the page which the other users can see. The form appeared consists of two buttons- post, read.

#### 3.3.1 Posting alerts

In the alerts page, before posting the alerts we must give certain specifications like in which branch, which year and in which section the alert must be posted in order to post the alert so that only the particular section or year or branch of the people get to know about the alert which is relevant to them in order to maintain confidentiality. Then we can type the alert specified so that it gets posted in the desired location.



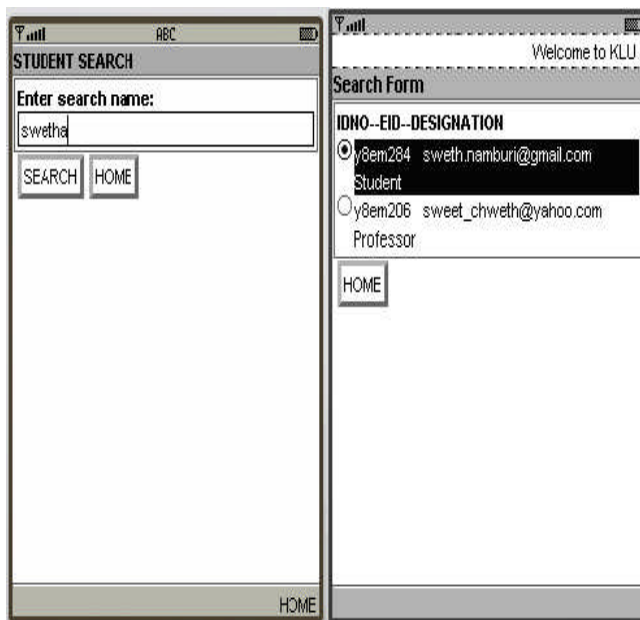


The Alerts Form is displayed on a mobile device screen. It features a title bar with 'T-unit' and 'ABC'. The main content area is titled 'ALERTS:' and contains the following text: 'READ/POST ALERTS in BRANCH: \* KLU', 'YEAR: \* ALL', 'SECTION: \* ALL', and 'POST:'. Below the 'POST:' label is a text input field containing 'welcome to KLU'. At the bottom of the form are three buttons: 'POST', 'READ', and 'HOME'. The device's numeric keypad is visible at the bottom of the screen.

Fig 3.3.1.1 Alerts Form

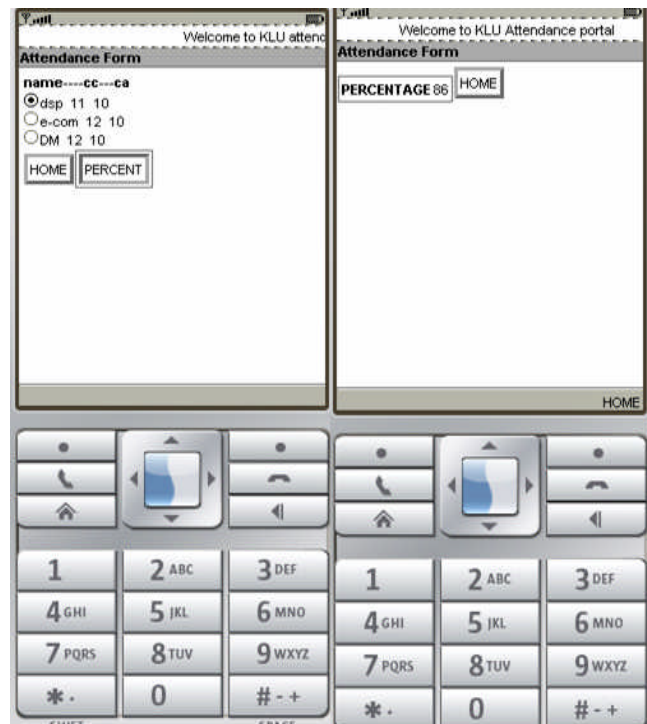
### 3.3.2 Reading alerts

In the alert page, we have another function called READ which enables us to read alerts that are posted.



The Search Form is displayed on a mobile device screen. It features a title bar with 'T-unit' and 'ABC'. The main content area is titled 'STUDENT SEARCH' and contains the following text: 'Enter search name:', a text input field containing 'swetha', and two buttons: 'SEARCH' and 'HOME'. The device's numeric keypad is visible at the bottom of the screen.

Fig 3.2.2.1 Search Form



The Attendance Form is displayed on a mobile device screen. It features a title bar with 'T-unit' and 'ABC'. The main content area is titled 'Attendance Form' and contains the following text: 'name----cc---ca', 'dsp 11 10', 'e-com 12 10', 'DM 12 10', and two buttons: 'HOME' and 'PERCENT'. The device's numeric keypad is visible at the bottom of the screen.

Fig 3.4.1 Attendance Form



The Read Alerts Form is displayed on a mobile device screen. It features a title bar with 'T-unit' and 'ABC'. The main content area is titled 'Alerts Form' and contains the following text: 'Welcome to KLU Alerts portal', 'ALERTS-----DATE-----IDNO', 'hi kluians 24-03-2012 10:09:13 y8em202', 'welcome to KLU 24-03-2012 10:10:56 y8em202', and a button: 'HOME'. The device's numeric keypad is visible at the bottom of the screen.

Fig 3.3.2.1 Read Alerts

Like in POST function, here also the user must specify the branch, year and section and then click on read button in order to read the alerts posted. In order to avoid unnecessary alerts the unique idno of the user, time and date will also be posted along with the post.

### 3.4 Attendance and Library Activity

#### 3.4.1 Attendance

When this icon is selected then based on his idno his attendance details will displayed in another form. The details displayed will be subject name, no. of classes conducted and no. of classes attended by the user. A percentage option will also be available on the form which can be clicked then the user's percentage will be displayed in another form.

#### 3.4.2 Library Activity

In a college, many students borrow books from the library so the librarian normally maintains a database about these accounts. So the user must also be informed about his status regarding the books he/she borrowed from the library so that he won't be overdue.



Fig 3.4.1 Library Activity Form

So in the homepage, we have a library activity icon which redirects him to his library activity account on clicking it. The page displays details like book name, book id, issued date, return date.

## 4. CONCLUSION

The project described in this paper to a great extent simplifies the process of obtaining information from the college whenever a Wi-Fi enabled device requests information. The application software thus developed has been implemented successfully which has been under continuous observation, rectification, improvisation and optimization [7] for the past few days. Several tests [3] have been performed to scrutinize the validation of each data and the errors were stopped out and then finally cleared in a complexive manner. Even though the software has many advantages, some limitations also exists which are meagre and negligible. Those limitations need not be considered since it does not affect the system as a whole.

## 5. FUTURE SCOPE

There are some aspects which can be further updated or modified in future if the changes are required. The enhancements may be like we can add the route map to the system which guides the student to locate a friend or a professor anywhere, we can implement video on demand and record important classes and seminars and guest lectures so that those who missed it can see them. We can also implement an E-Circular system using this application. We can implement a forum so that there will be communication between professors and students even though they are located remotely to each other. Similarly, we can implement a chat function so that one can communicate with each other more effectively, whilst on the move [8-11].

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## Vitae

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