CAMPUS ON CLOUD

Project Report Submitted by

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CHAPTER 1

INTRODUCTION

1.1 PROJECT OVERVIEW:

Accompanied by the rapid growth of Information Technology Engineering, android mobiles are now used widely in a variety of fields. However, most applications are designed for normal persons and are designed to make people's life easier. Campus on cloud enables ubiquitous access of data and information by college students and teachers. Using this service, teachers have the facility to dynamically avail the students from varied branches with notes and notifications related to subject matter at any time and place.

The application has two sections majorly, one being the teacher end and other is student end; both having their own separate utilities and responsibilities. Teacher can remotely access the application and upload all types of documents whereas student can download the notes from the application by having a ubiquitous access of data and information.

Push Notification helps students to be aware of notices regarding placements related activities, circulars and all the sudden events and important information to be shared with all the students of the colleges.

Forum has been implements in the application for doubts and discussion between teacher and students where a student can raise a doubt about the subjects and teacher can reply to it thus removing any miscommunication between teacher and students.

1.2 MOTIVATION:

With the smart phones entering the market, cell phones are great tools for maximizing the productivity, providing security, and enhancing lives with better communication. In our college we have an efficient system Moodle but with a disadvantage. Neither students not teachers can access Moodle outside the college campus. Also the placement notices are put on Moodle which mostly go unnoticed if not paid attention. For such reason push notification is implemented in the application. Therefore we have developed an app called as ”NITTE REPOSITORY” which does efficient file sharing remote access and feature of push notification and forum which helps students and teachers to communicate better and also remove any kind of miscommunication.

1.3 METHODOLOGY:

This project involves the development of an application which can be categorized into two sections. The first section mainly helps the teacher to upload documents, instant camera images/videos while the second module will help the students to download the files. Apart from this push notification will help students to receive the notices of any sudden events and important information.

1 The first module involves the development of an app that has the upload and download feature which is implemented on android studio with a web server where all the data is uploaded and downloaded.

2 The second module involves the development of an app that has push notifications which is implemented using Google cloud messaging integrated in pushbots a third party application software. Forum which is held for doubts and discussion is open source php scripts implemented with all its features in web view of the android.

1.4 OBJECTIVE:

- To give teachers the facility of file sharing from remote location using the application.
- To give students the facility of downloading the files from remote location using the application.

- Push Notification giving the authority to admin for dynamically sending notices to student and teachers of sudden events.
- Also giving the teachers the facility of uploading instant camera image/video.
- Forums for having a profound doubts and discussion.

1.5 ORGANIZATIONS OF CHAPTERS:

The report has been organized under eight chapters, which are as follows:

Chapter I: This chapter introduces the main idea of the project. It gives a brief knowledge about the motivation and objectives of the same.

Chapter II: This chapter outlines some of the background overview of the file sharing system through and approaches.

Chapter III: This chapter specifies the basic Hardware and Software requirements to run the project.

Chapter IV: This chapter gives the use case diagrams and flowchart of the modules and also gives an outline of the design of the system.

Chapter V: This chapter gives the implementation details of the entire project.

Chapter VI: This chapter describes the different problem encountered while designing the system and solution how did we overcome from it.

Chapter VII: Snapshots.

Chapter VIII: This chapter describes the use of the designed project and its various fields of application. The future scope refers to what possible developments can be made in any future design.

References: Contains the journals, papers which were referred and read to learn about the concepts in this project.

CHAPTER 2

LITERATURE REVIEW

2.1 OVERVIEW:

This chapter provides an introduction to the areas of research. It describes the work which has already been done in direct-show and states the new scope in directshow. The scope has been clearly explained and the technology used to obtain it has been mentioned in this chapter.

2.2 RELATED RESEARCH:

- Dropbox allows users to create a special folder on their computers, which Dropbox then synchronizes so that it appears to be the same folder (with the same contents) regardless of which device is used to view it. Files placed in this folder are also accessible via the Dropbox website and mobile apps. Dropbox uses a freemium business model, wherein users are offered a free account with a set storage size and paid subscriptions for accounts with more capacity.
- Google Drive is a file storage and synchronization service created by Google.It allows users to store files in the cloud, share files, and edit documents, spreadsheets, and presentations with colaborators. Google Drive encompasses

Google Docs, Sheets, and Slides, an office suite that permits collaborative editing of documents, spreadsheets, presentations, drawings, forms, and more.

- Apple push notification is a service created by apple that forwards third party application to the apple devices.

2.3 EXISTING SYSTEMS:

2.3.1 MOODLE:

Our college provides Moodle as a platform to share any form of data or information over a LAN connection. Teachers get to upload all notes on it and students are to download it according to their semester. The system has an efficient way of distributing and sharing data.

2.3.2 IITB APP:

IITB APP is an application develop by students for file sharing which has only the feature of downloading the files from the student side

2.3.3 HARVARD MOBILE APP:

Harvard mobile app is a university wide initiative to improve the mobile experience of students, faculty, staff, visitors and neighbours who interact with Harvard's campus and community.

2.4 PROPOSED SYSTEM:

NITTE REPOSITORY is a tool to give students and teachers an easy and efficient way of handling resources. There might be occurrences when a teacher has the required presentations and documents for students for a specific exam but the teacher is not available at college and may be at a different location. In a situation like this common sense suggests using email. But that is a tedious process wherein the class representatives have to forward all of it to the students after receiving them from the teachers. Our application strives to give a simple solution. The teacher can easily login using his/her credentials and upload the documents from anywhere using cloud

services. What comes next is the student part. The student in a similar fashion can access all of it from anywhere using his/her own mobile carrier services. Neither of them need to be physically present in college for this to happen. The notification system adds onto the list of features. As soon as a circular is made it will be uploaded onto the application and every user will receive a push notification. This ensures a more direct way of communication between the college members and authorities. Forum is an open source bulletin board software that can be used to ask doubts and discussion for teacher and students.

CHAPTER 3

SYSTEM REQUIREMENT SPECIFICATION

3.1 INTRODUCTION:

SRS is the official statement of what the system developers should implement. Software Requirement Specification consists of the functional and non-functional requirements for the application being developed. It briefs about the Hardware requirements for the smart phone as well as a computer. It also contains information regarding the software requirements.

3.2 FUNCTIONAL REQUIREMENTS:

Functional requirements indicate the functionality provided by the system.

- The developed application must be able to effectively share any type of documents, images and videos.
- The android phones should have android version of 4.0 for efficient use of the application.
- The application must be a continuously running app so that any time the smart phone is switched on or the mobile internet is on it should receive push notifications.
- The application developed to remove the miscommunication between teacher and students should effectively take the inputs given by the user on the forum in terms of doubts and any important notice to be given.

3.3 NON-FUNCTIONAL REQUIREMENTS:

Non-functional requirements are conditions under which the system must be able to function and the quality the system must have. It indicates the criteria that can be used to judge the operation of the system, rather than the specified behaviour.

- **User Constraint**: The user must have carrier charges to upload /download or to receive notification and using forum.
- **Performance Constraint**: The performance deteriorates if the RAM specification is less than what is mentioned in the system requirement.
- **Reliability**: The application must work consistently even if multiple users are using it simultaneously
- **Flexibility**: The application must be flexible enough to incorporate some additional features into it.
- **Accuracy**: The application must correctly upload file in whichever directory he/she wants to upload.

3.4 HARDWARE REQUIREMENTS:

3.4.1 Requirements for a computer:

- Operating System: Windows XP, Windows 7 and above
- Main Memory: 1 GB or more
- Hard Disk: 5GB or more
- Processor: INTEL dual core and Processor/AMD or above
- Processor speed: 1.4 GHz

3.4.2 Requirements for a smart phone:

- Operating System: Android 4.0 and above
- Phone Memory: 1GB or more
- Android v4.4(Kitkat) and above

- Processing speed: 1GHz

3.5 SOFTWARE REQUIREMENTS:

- Java SE7 Software Development Kit
- Android Studio
- Java Language
- ADT plug-in for Android

CHAPTER 4

SYSTEM DESIGN

4.1 INTRODUCTION:

System Design is the first design stage for devising the basic approach to solving the problem. System Design consists of the overview of the application being developed, the use case diagrams for the entire application the use case summary. It also consists of the sequence and Dataflow Diagrams for the application for the same along with a brief description.

4.2 OVERVIEW:

This project involves the development of two sections teacher and the student part which can be categorized into two modules.

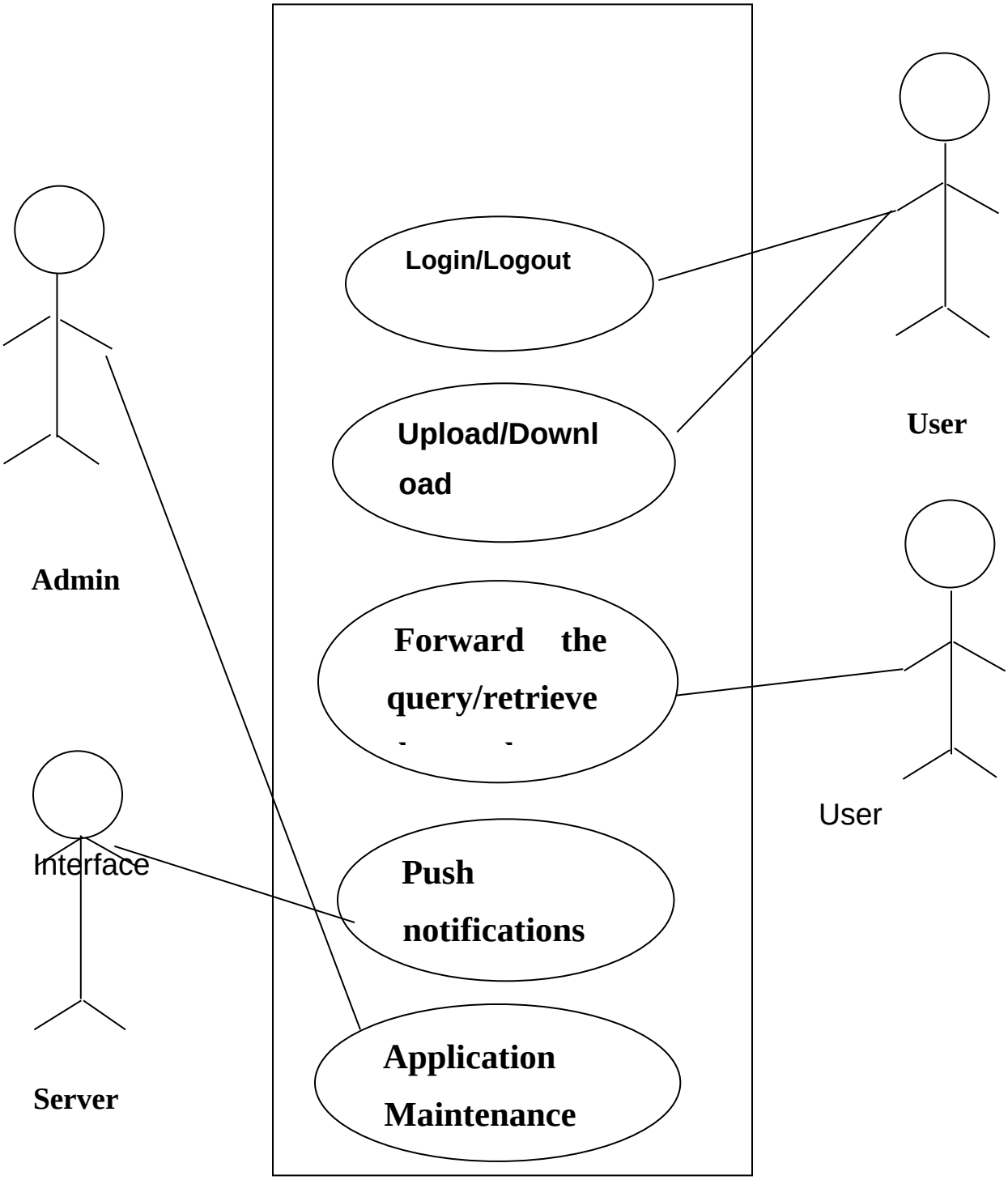
- The first module involves the development of an app that concerns with teacher giving them the facility to upload any type of documents through their external or internal storage or instant camera or video.

  The second module involves the development of an app that concerns with student giving them the facility to download all the files which are uploaded to server. As soon as the student download the file the file gets stored in the offline files so that a student can view the file without using cellular data.

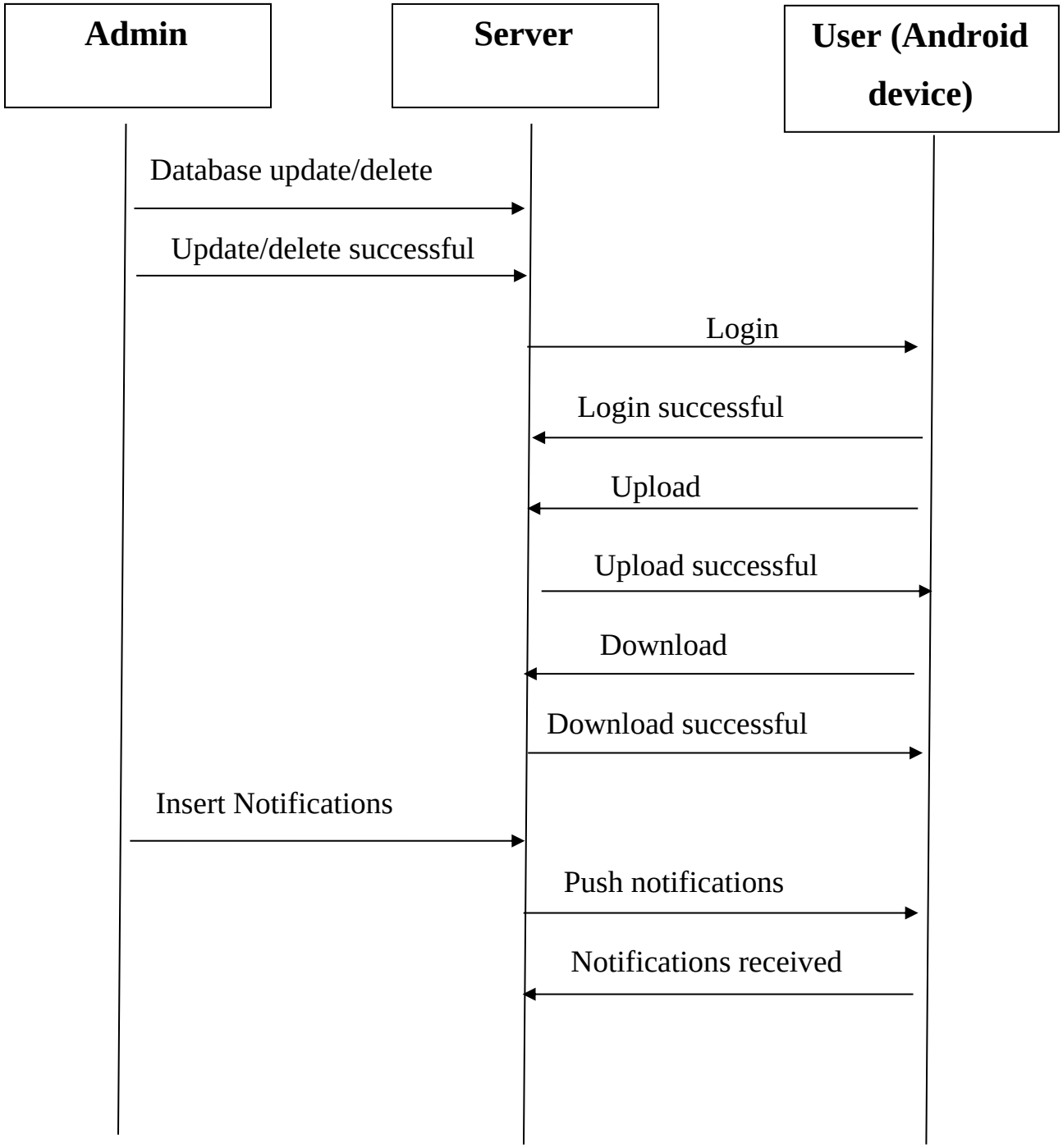
- Push Notification will send the messages through Google cloud messaging to all the registered devices using the application thus informing students of events and notices of college and important placement related notices.

4.3 USE CASE DIAGRAM :

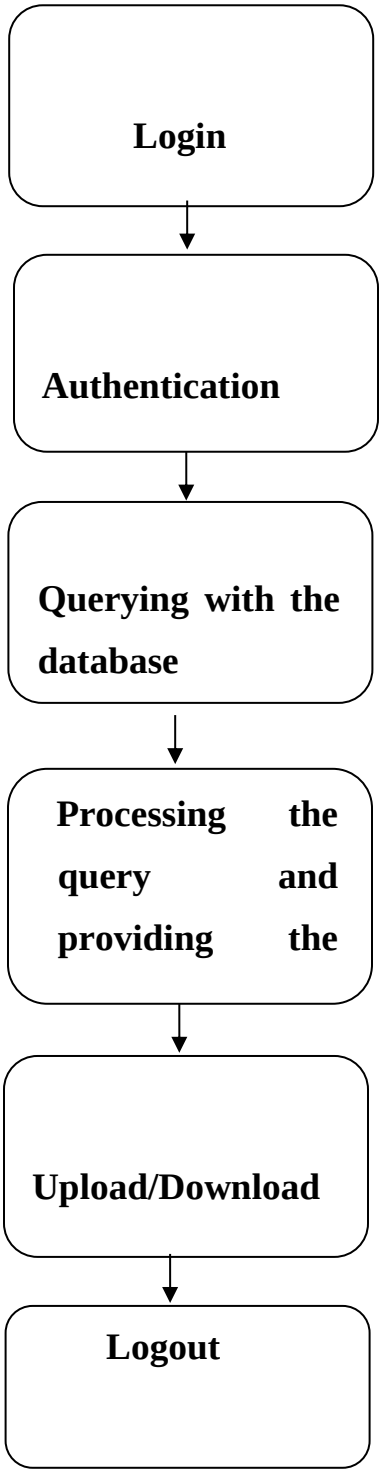
4.3. **Use case model for our entire applications functions:**



4.4 Sequence diagram for entire application :



4.5 Data Flow Diagram on user session



Steps: -

- The Administrator logs into the database server and updates the record of allowed users list.

- Later Teacher user 1 will sign up with the credentials given to him/her.

- Database will cross-verify with the credentials entered and allow him/her to create the account.

- After the successful sign, up/login teacher will have options to upload files and student can download those files of their followed teachers.

- Once everything is done, the user logs out of the server.

CHAPTER 5

SYSTEM IMPLEMENTATION

5.1 MODULE DESCRIPTION:

We briefly explain the main modules here namely:

- Module designed for the teacher upload
- Module designed for the student download
- Module designed for push notification
- Module designed for forums
- Module designed for viewing files offline

5.1.1 Description of the module designed for the Teacher upload:

The idea of this module is to effectively give the teachers to upload documents by having a ubiquitous access to the application. Teachers can upload instant camera images and videos from the application. They can also upload the files which are there in their mobile device storage area which includes pdfs, ppts and kind of document files. When the teacher clicks on the capture button mobile's rear camera gets opened and the teacher can click the pictures of any documents and send it to their students. When teacher clicks on record then the rear camera gets opened and teacher can

send a video recording to their students. When teacher clicks on storage it will open storage access framework where a teacher can select the required documents.

5.1.2 Description of module designed for the Student download:

The idea of this module is to give students the access to download the files which are there in the server uploaded by the teachers. Students can download the files, and as they click on a particular file it will give an option of download this to offline files. Students can view the downloaded files in the internal or external storage of the device. They can also view the downloaded files in the application's feature of offline files which will be discussed later.

5.1.3 Description of module designed for the Push Notification:

The idea of this module is to make students and teachers aware of sudden notices and events, or any important information to be shared among all the college members. The administrator sends messages through pushbots, a third party application which integrates Google cloud messaging and sends the messages to all the registered devices. All the devices which have the application installed and if their cellular data is on then they will receive the notifications. In case if the user misses out on any notification all the notifications can be viewed in collected notifications.

5.1.4 Description of module designed for the Forums:

The idea of the module is to have a profound doubts and discussion for teachers and students on a common platform. We are using an open source PHP scripts which is implemented in web view of the application. All the features of the forum are implemented in web view. We have used phpBB3 which is available as version 3.1.8, is the latest release of phpBB3 online discussion forum systems. Students can write doubts and teacher can solve their doubts on their convenience. All the student and teachers have their login ids and passwords and the moderator has the privileges of giving restricted access to some users and also deleting the conversation or posts if

inappropriate. Moderator can even block the users if he/she behaves in an unethical way. There is also a dictionary in forum which has an feature called “bad words” in which the words that are present cannot be posted.

5.1.5 Description of module designed for the Offline Files:

The idea of the module is to view all the downloaded files offline. The main motive is to give student access to the information from wherever and whenever. If the student losses his data from the external or internal storage then the files which he has downloaded will be available in the application. Offline files will create a same directory as the files in the server for efficiency.

5.2 API'S USED:

5.2.1 Google API:

Google APIs is a set of application programming interfaces (APIs) developed by Google which allow communication with Google Services and their integration to other services. Examples of these include Search, Gmail, Translate or Google Maps. Third-party apps can use these APIs to take advantage of or extend the functionality of the existing services. The APIs provide functionality like analytics, machine learning as a service (the Prediction API) or access to user data (when permission to read the data is given). Another important example is an embedded Google map on a website, which can be achieved using the Static maps API, Places API] or Google Earth API.

5.2.2 Web Server API:

A **web API** is an application programming interface (API) for either a web server or a web browser. It is a web development term is usually limited to what is client-side accessible to web applications (and any web frameworks they might employ) and thus usually does not include web server and web browser implementation details such as web server SAPIs or web browser engine APIs unless publicly accessible by a remote web application..

CHAPTER 6
SYSTEM TESTING

6.1 INTRODUCTION:

Software testing is a process used to identify the correctness, completeness and quality of the developed computer software. Testing as a process is questioning a product in order to evaluate it, where the questions are things the tester tries to do with the product, and the product answers with its behaviour in reaction to probing of the tester.

The testing phase is performed after coding to detect all the errors and provide quality assurance and ensure reliability of the software. Testing is vital to the success of the system. During testing, the software to be tested is evaluated to determine if the system is performing as expected. Clearly, the success of testing in revealing errors depends critically on the test cases.

6.2 TESTING PROCESS:

Testing performs a very critical role for quality assurance and for ensuring the reliability of the software.

Testing can be performed in various levels:

1. Unit Testing

2. Integration Testing

6.2.1 Unit Testing:

1. **Problem:** Unable to implement folder creation and file deletion.

Solution: The main hurdle of service user cannot create or delete folders or file. The solution is the admin can create folders. The folders are created as follows in each branch there are two semesters and in semesters there are subjects followed by section. The subjects remain same for a long period of time and also the folder creation is a rare occurrence as once an admin creates the folder there is no need to change it for a long period of time. Also if the student wishes to view any documents of pervious semester he can use it, that's the reason of not implementing the deleting files option.

2. **Problem:** Resources of the application can only be accessed by the authorized personnel.

Solution: As the main goal of our application is to help the student teacher interaction through file sharing, we have to use many of the system features like the uploading, downloading, push notification etc. There is no authentication required at the student end so that all the resources can be easily accessed. But uploading to the cloud has been restricted to the teachers with proper login credentials only thereby removing any chances of a third party being able to share files of his own wish.

3. **Problem:** Security and equal access in forums can be an issue with respect to student teacher interaction.

Solution: Presence of a moderator makes the posts subject to scrutiny which thereby reduces any form of disregard when it comes to statements on the forums. Moreover student access or for that matter number of persons registering on the forum can be restricted since people registering and using the forum to post can be provided with unique credentials which might be provided by special authorized personnel. The forum

has a dictionary including a list of “bad words” which substantially reduces the chances of misuse of language

CHAPTER 7

SNAPSHOTS

7.1 MODULE 1:

7.1.1 Splash Screen:

This shows the splash screen of the application.

Figure 7.1: Splash Screen

7.1.2 File view:

7.1.2.1. File view in the application :

When the user wants to view, upload, download file, the files are systematically arranged according to branch, semester, subjects and section.

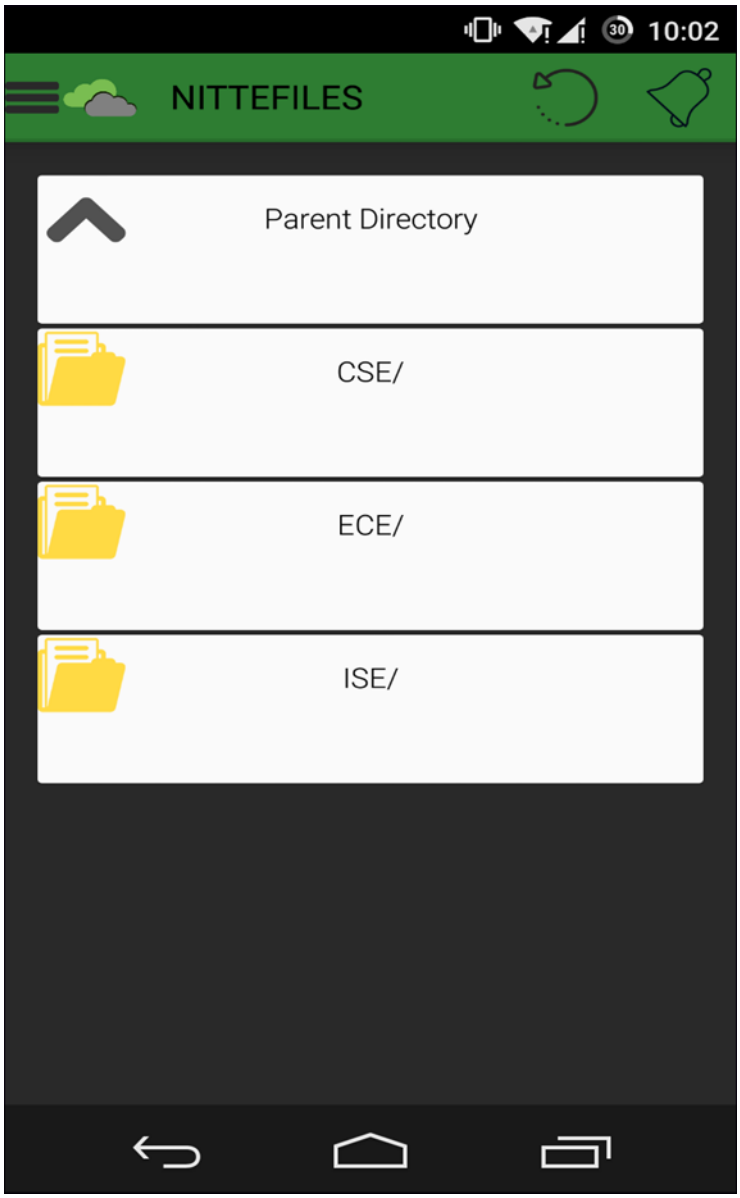


Figure 7.2: File view of different branches

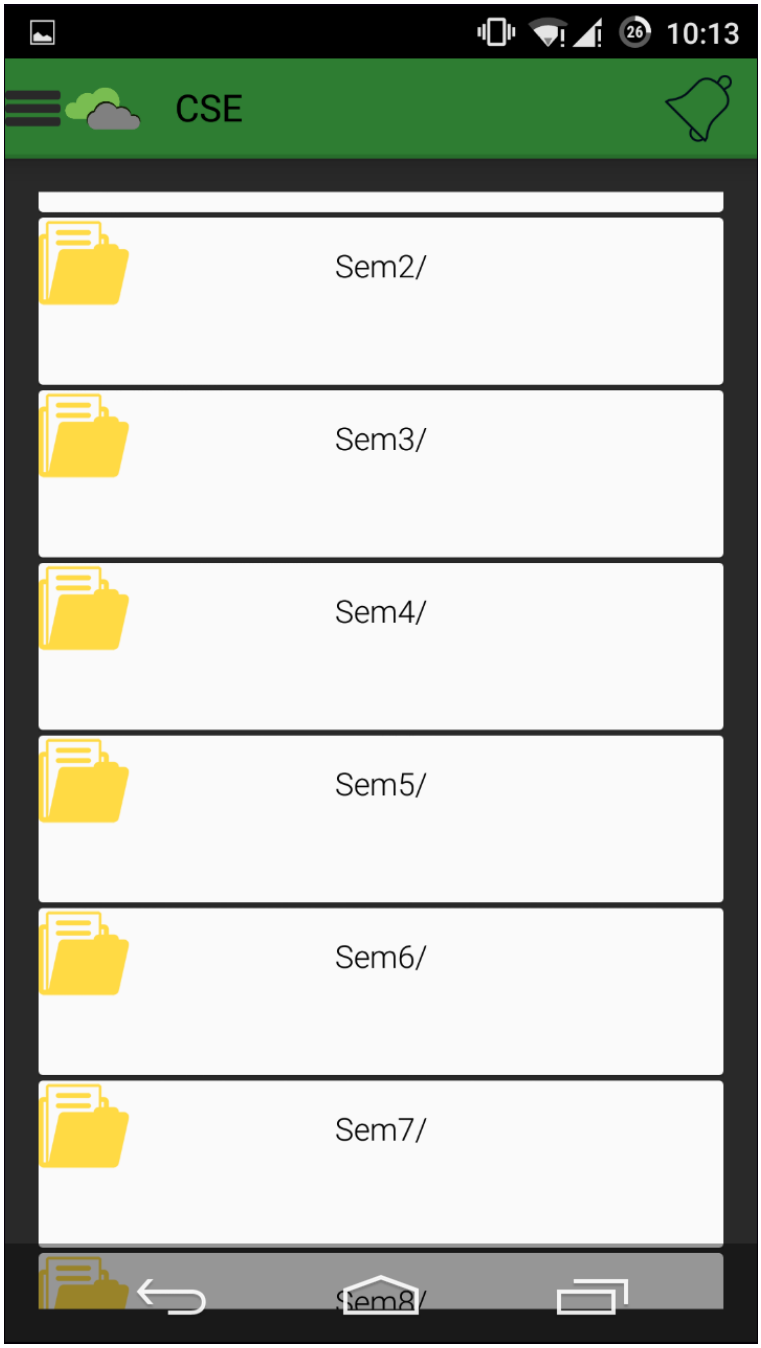


Figure 7.3: File view of different semester under CSE

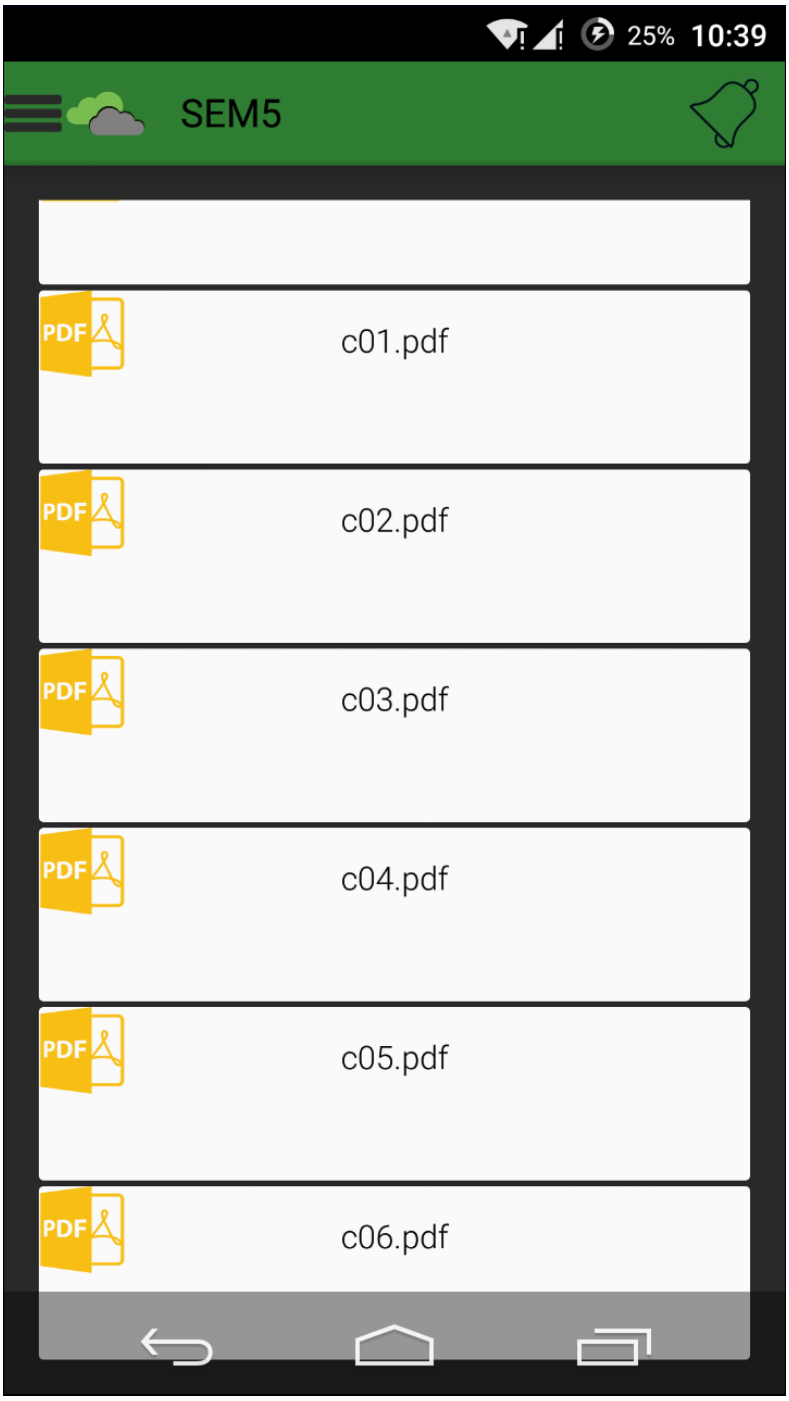


Figure 7.4:File orgaization.

7.1.3 Navigation Drawer showing different options:

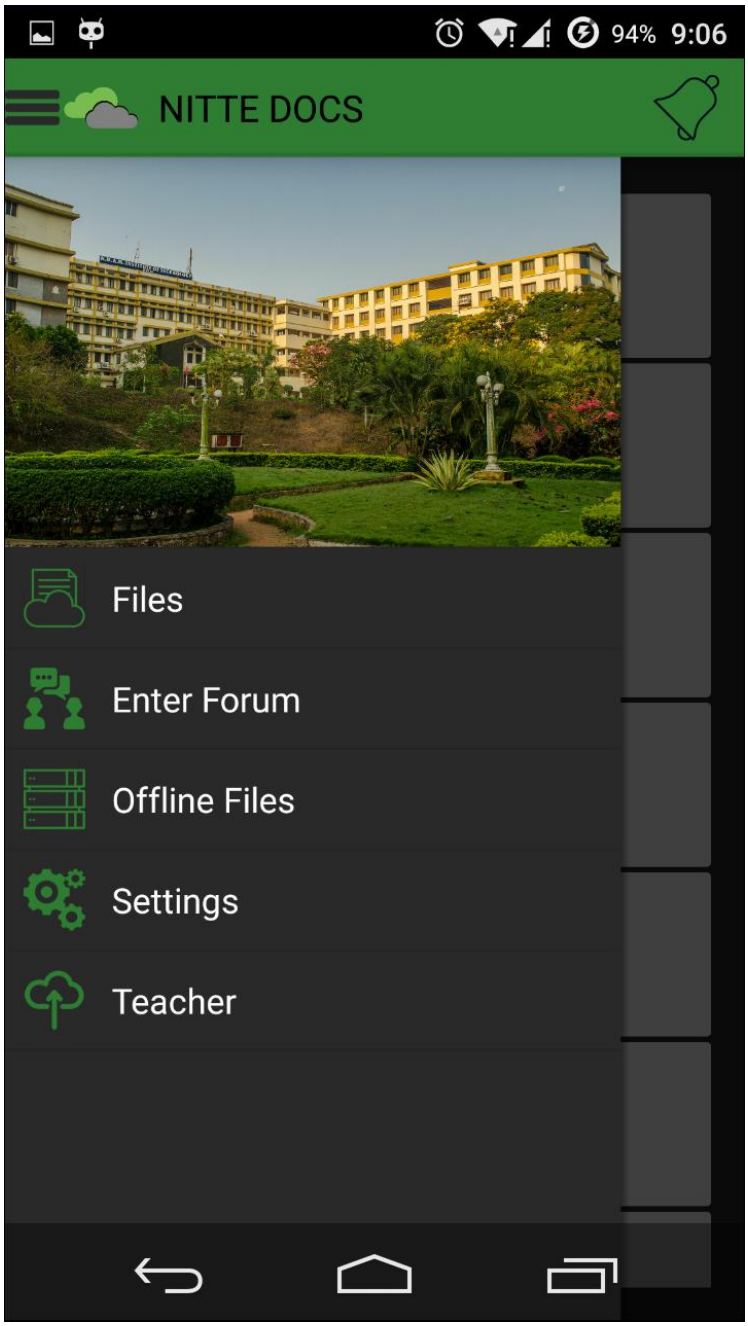


Figure 7.5: Navigation drawer.

7.1.4 Uploading Files:

Teacher has to use the login credentials given to them to upload the files.

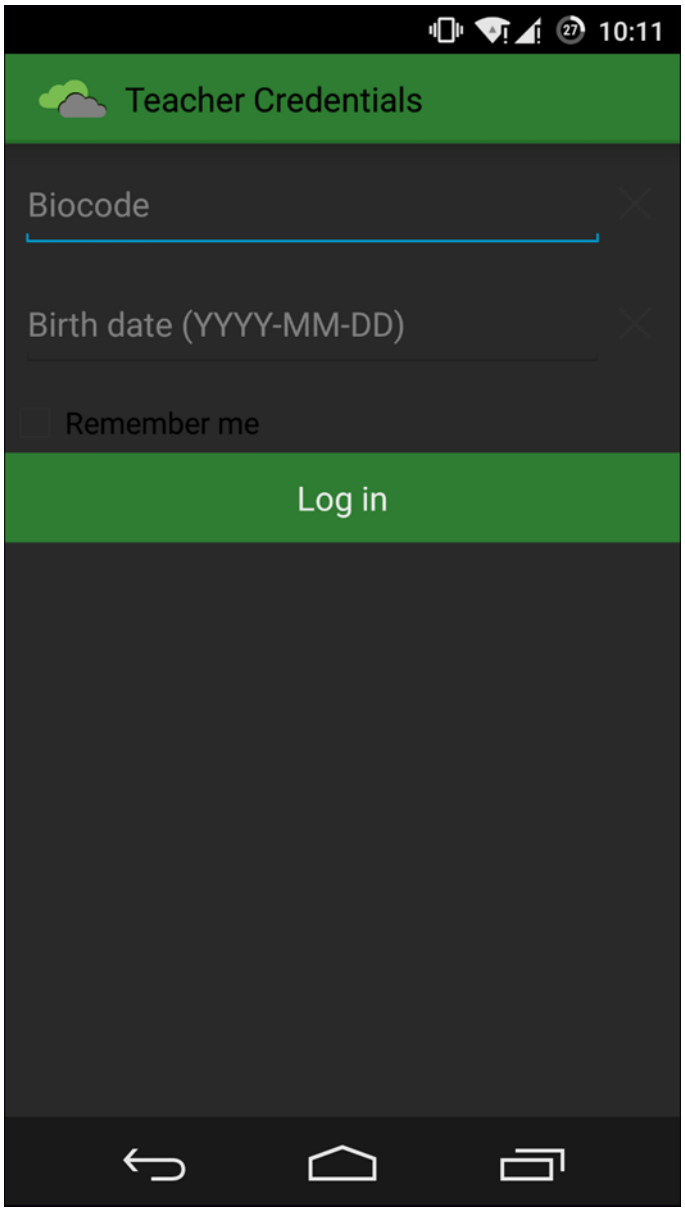


Figure 7.6: Login page for the teachers

7.1.5 Dialog box to upload files

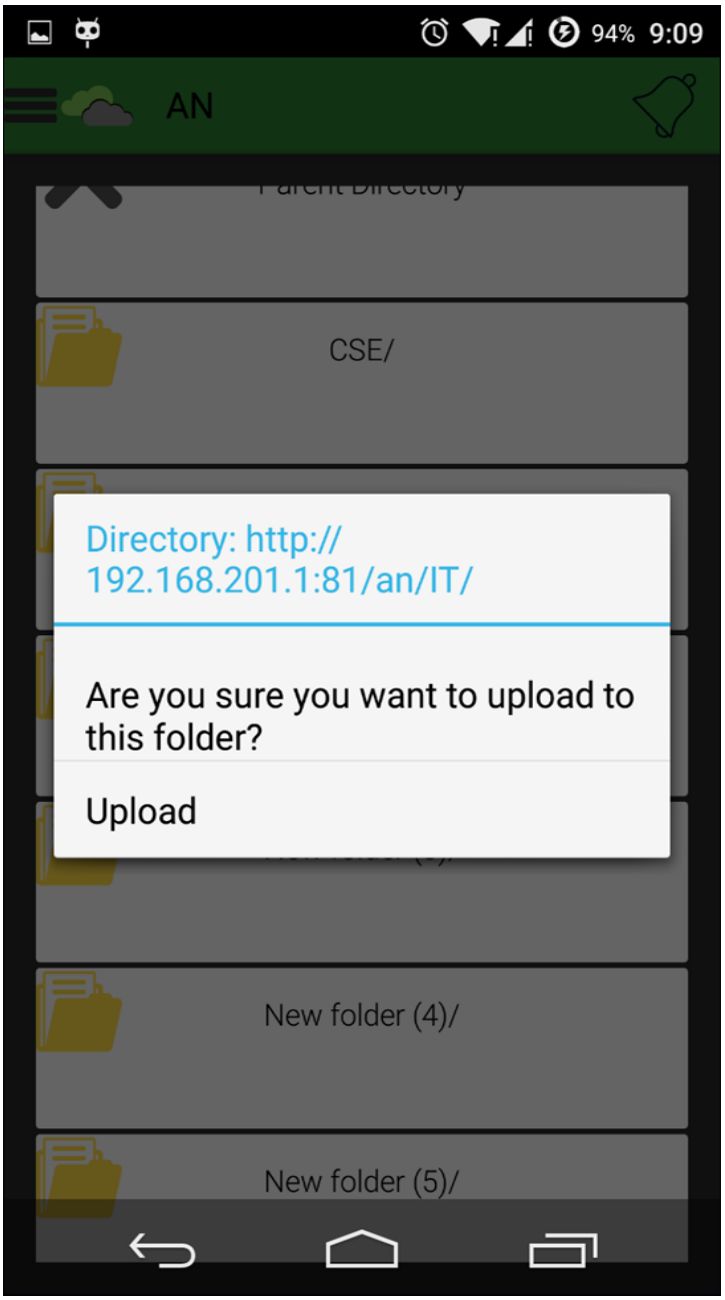


Figure 7.7: Dialog for upload options

7.1.5.1: Upload options

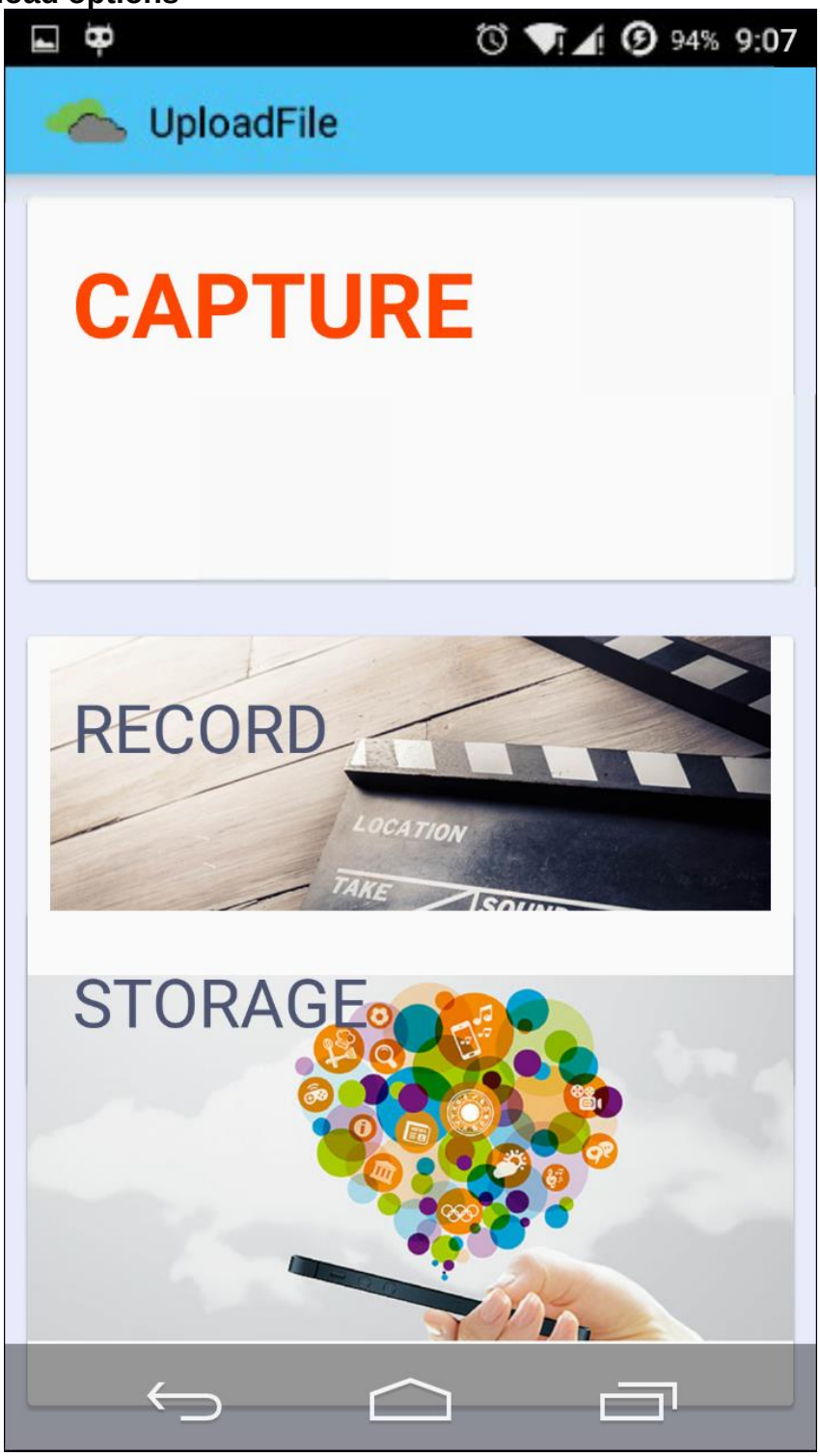


Figure 7.8: Upload options

7.1.5.2: Storage access framework

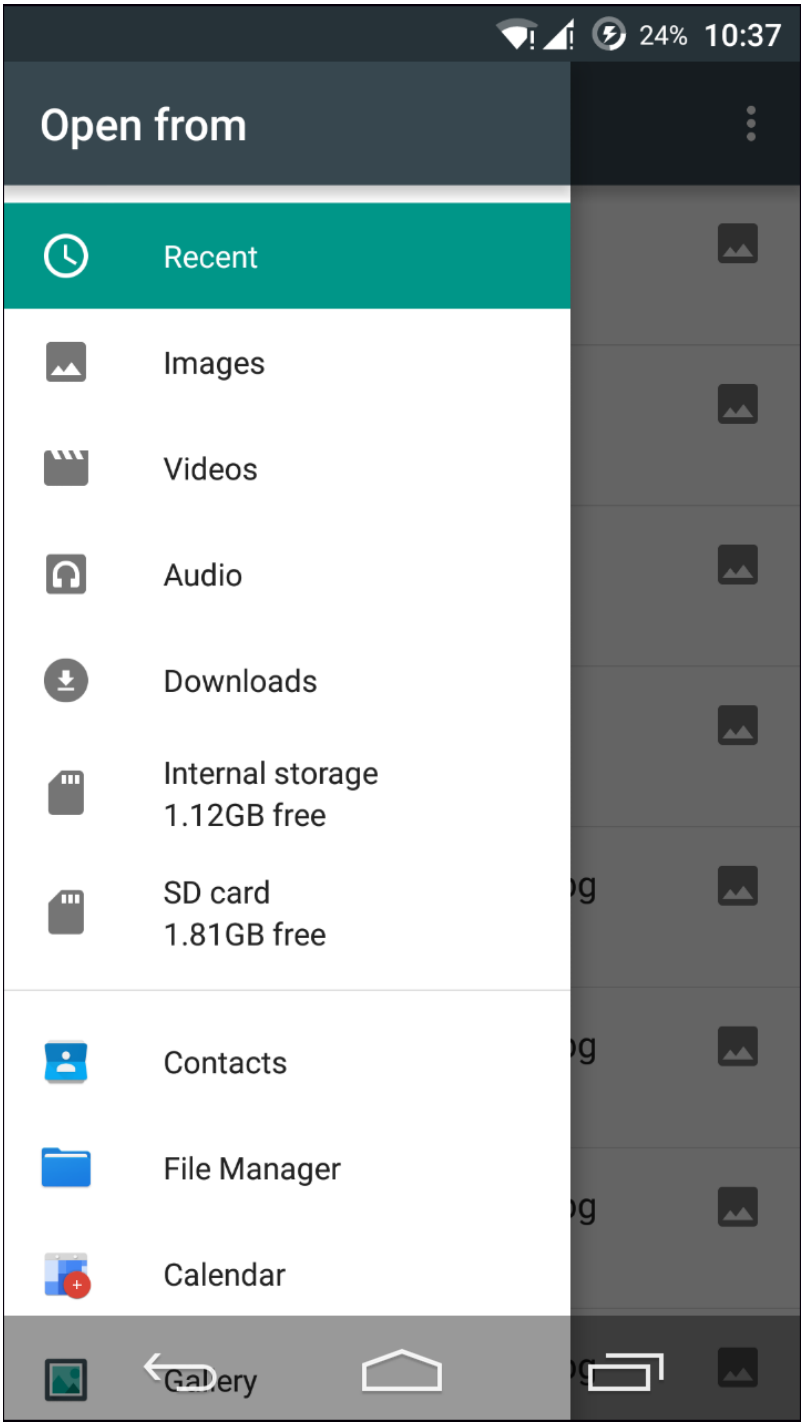


Figure 7.9: Storage access framework

7.1.6: Offline files

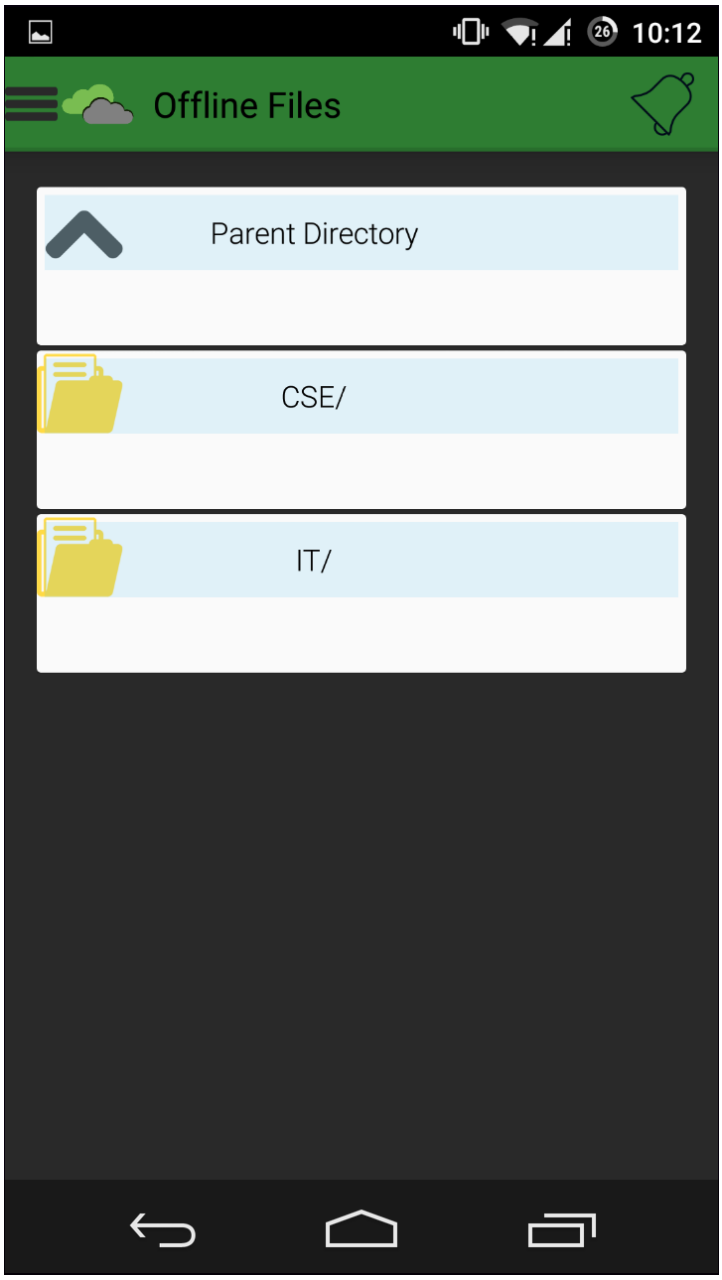


Figure 7.10:Offline files

7.1.7: Push Notification

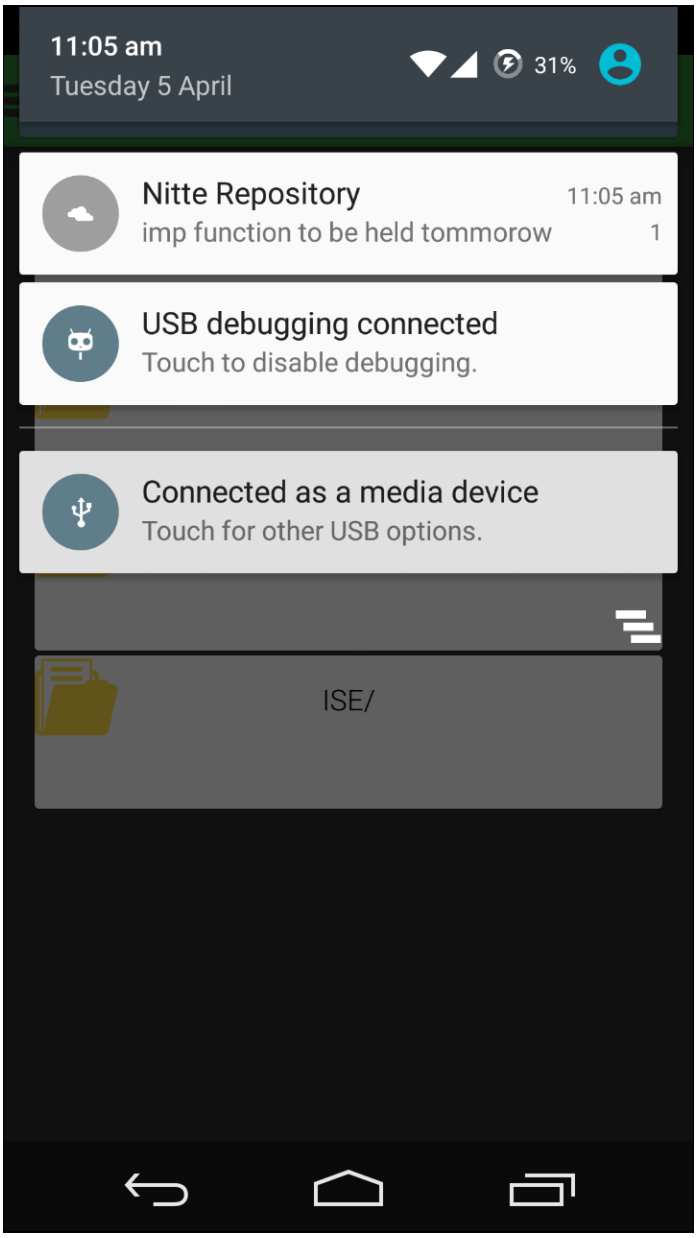


Figure 7.11: Push Notification

7.1.7: Forums

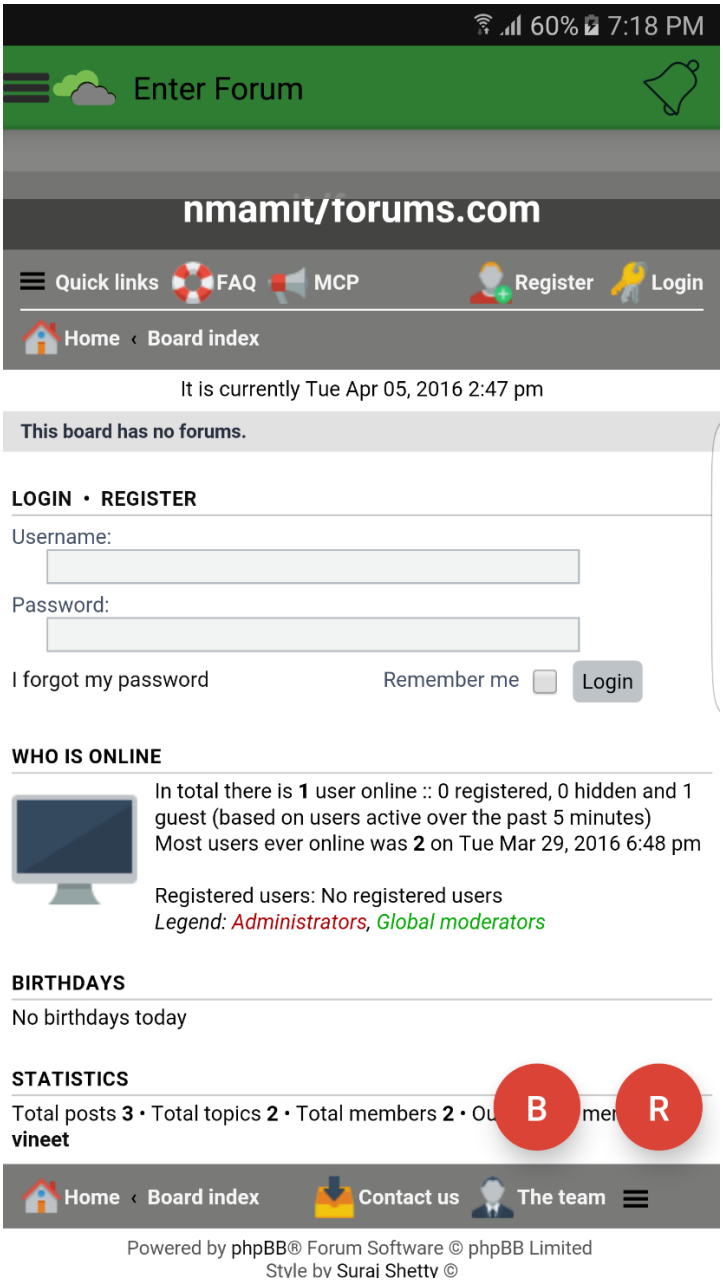


Figure 7.13: Forums

CHAPTER 8 CONCLUSION AND FUTURE WORK

Our college provides Moodle as a platform to share any form of data or information over a LAN connection. Teachers get to upload all notes on it and students are to download it according to their semester. But the problem is there is no ubiquitous access. If there is an information to be shared instantly and the user is not in college campus it would be tedious task to share the resources .Moreover the students outside the campus cannot access the current facility and benefit from it. So by implementing this project we are solving the aforementioned problems.

With the completion of our project we will have fulfilled most of our project objectives. This project application can be used in giving a ubiquitous access to the teachers and students to communicate with each other in a proficient way. Also a college can implement this application to make use of the cloud services, give an instant access to users and notify them about the circulars and important notices. This project can be used in future by different colleges and universities for enhancing a student teacher communication. The organization or institute can have a better and precise system of communicating through the application to their faculties and students. Further it can add various features which includes placement related activities. We can notify the student about the companies coming in for recruitment and their required criteria wherein students can directly register for the companies if they are eligible. Placement related material can also be uploaded in the application so the students can benefit from it. Also it will be useful for keeping attendance so that both students and teachers

benefit from such system. Students can check their attendance and teachers can update the day to day attendance from the application. It will aim at providing an access to both students and teachers to communicate in a proficient way.

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