CHAPTER: 1 INTRODUCTION

1.1. INTRODUCTION

India is the fastest growing telecom Network in the world with many users moving towards Smart phones and majority by Students. Now, Mobile Phones have become an organ of our body i.e. Many users are using many applications in today's life such as games apps, video calling apps, photographs apps, shopping apps etc. So I want to introduce an Android Application especially for BBIT Students.BBC enable the user especially students to find and access all information related to him/her.In BBC student can download study materials like eBooks ,exam papers ,etc. Also Students can get to know about their results, the rank in their college etc. BBC helps Students to get study related information at one place.

1.2 SCOPE OF THE PROJECT

Android being a relatively new technology, the future scope in the project is boundless.

Scalability would be the biggest scope. The application can be made available off campus as well whereby only certain services would be made available to the user. Information security plays a vital role in the system work model for ensuring confidentiality and integrity, smooth functioning and reduced misuse of the system. Advanced security features can be employed for enhanced functioning of the application.

As of for now, the project will enable the college student to download the study material such as question bank, assignment questions, tutorials etc. But in the near future, if the lecturer or the professor is not able to take lectures for a long duration, then the lecturer can make a video of the lecture from his workplace and give it to the administrator to upload it on the server, and the corresponding link will be send to the students.

Thus the process of e-learning can be incorporated with the BBIT project in the future to provide a robust learning system with the BBIT being a communication system or bridging the gap for a better learning experience. Being a relatively new idea in India, we can even go commercial with the idea and provide numerous campuses with the application.

1.3 OBJECTIVE

Ubiquity across an enterprise or campus is a very positive and exciting experience for the students, faculty, staff and visitors to the institution. Having instant access to email, the internet, and other IT services irrespective of location can dramatically change the way your constituents live, work, study, learn, and play. Thus with BBIT we provide a ubiquitous environment across the campus wherein it will serve as a collaborative communicative system. Our concept of developing a campus information system seeks to answer these questions in a personalized way, at any time, at any location. The idea is to enable the user to find and access all information that is of relevance to him. All he needs is a smart phone which enables the execution of an android application. All used techniques are in themselves not new or unique, but the combination of instant messaging. On top of that, the system based on a platform made purely for research is in the stage of evolving into a product and is even now being utilized as a public service on-campus. There is also an approach to use mobile devices for interaction during classroom teaching. Altogether we find a situation on Campus, where students use their mobile device for learning and interacting.

CHAPTER: 2 TOOLS, PLATFORMS & LANGUAGE

2.1 HARDWARE & SOFTWARE REQUIREMENTS

Hardware Interface

Server side:

- Processor : QUAD CORE with 2.3 GHz or higher
- RAM : 3GB or more
- Hard disk : 100GB or more

Clients:

- 512MB RAM
- 32MBFlash Memory
- 200MHz Online Processor

Software Interface

Server side:

- Android SDK API level 19(4.4 Kit Kat)

Client side:

- Eclipse IDE

FRONT END: **Android**

BACK END: **SQLite**

2.2 INTRODUCTION TO ANDROID

2.2.1 WHAT IS ANDROID..?

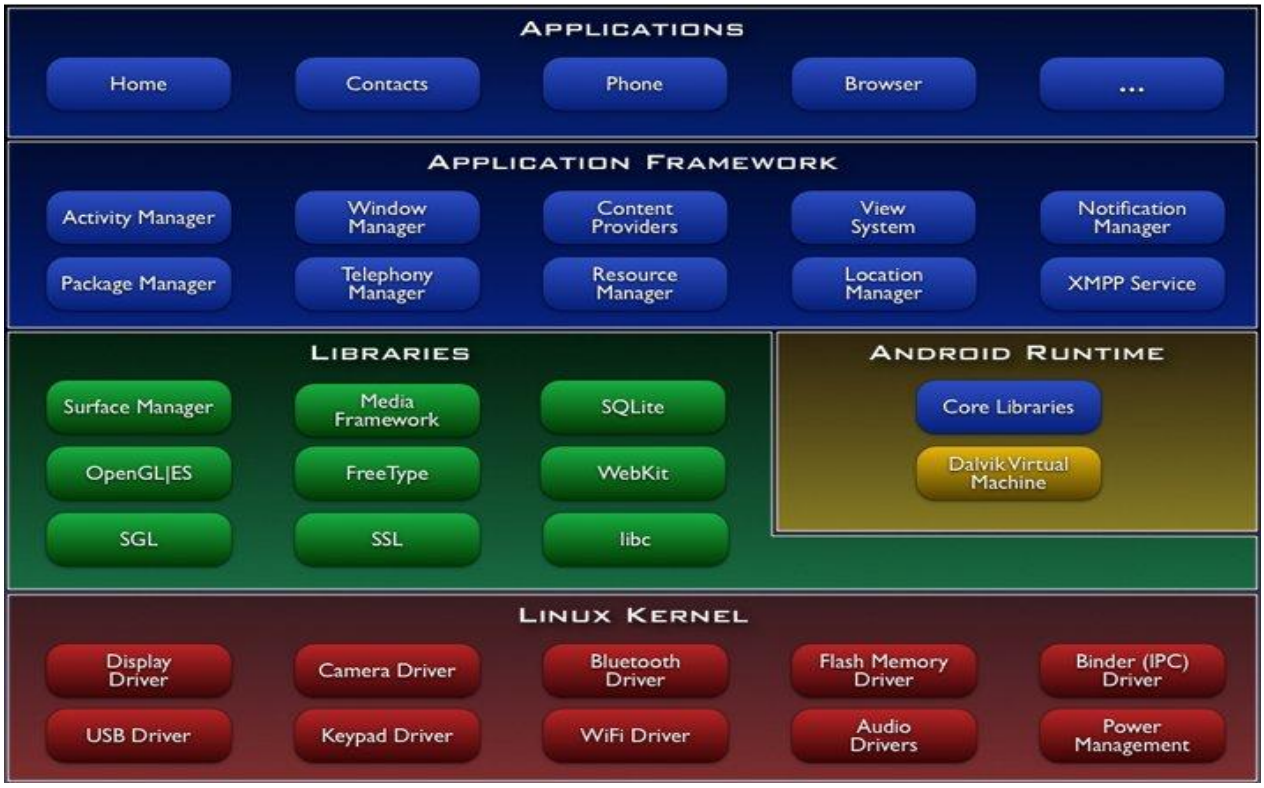
Android is a mobile operating system that is based on a modified version of Linux. It was originally developed by a startup of the same name, Android.Inc. Android.Inc Founded in Palo Alto, California, USA in October 2003.

In 2005, as part of its strategy to enter the mobile space, Google purchased Android and took over its development work (as well as its development team). Google wanted Android to be open and free; hence, most of the Android code was released under the open-source Apache License, which means that anyone who wants to use Android can do so by downloading the full Android source code.

It was developed by Andy Rubin (Co-founder of Danger), Rich Miner (Co-founder of Wildlife Communications.Inc), Nick Sears (Once VP at T-Mobile) and Chris White (headed design and interface development at WebTV).

Android 1.0, the first commercial version of the software, was released on September 23, 2008. The first commercially available Android device was the HTC Dream.

2.2.2 ANDROID ARCHITECTURE

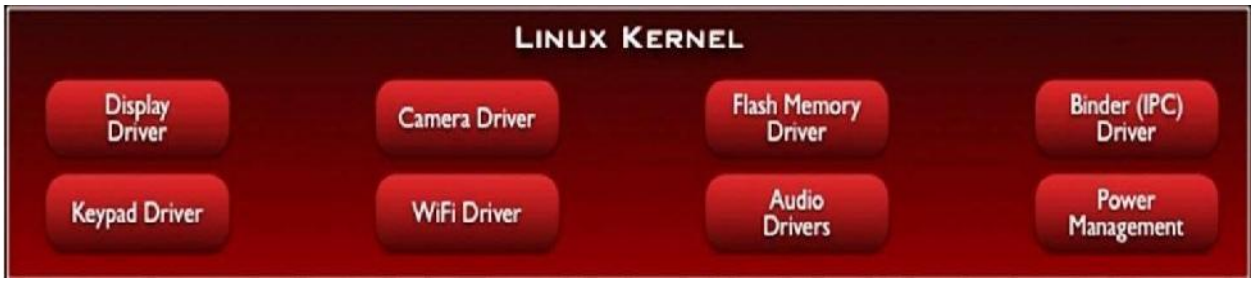


The Android OS is divided into 5 Layers :

1. Linux Kernel
2. Library
3. Android Runtime
4. Application Framework
5. Applications

1. Linux Kernel

This is the kernel of which android is based i.e. core of android architecture. The architecture is based on the Linux2.6 kernel. It contains all low level device drivers of all components of android device. It helps in software or hardware binding for better communication. It provides service like power management, memory management, security etc.



2. Libraries

Android has its own libraries, which is written in C/C++.It contain all the code that provides the main features of an Android OS .For e.g., the SQLite library provides database support so that an application can use it for data storage. The Web Kit library provides functionalities for web browsing.These libraries cannot be accessed directly, but can be accesses with the help of application framework.

3. Android Runtime

It is same layer as library .It provides set of core libraries that enable developers to write android apps in Java. It is designed specifically for Android to meet the needs of running in an embedded environment where you have limited battery, limited memory, limited CPU.

A.)DVM (Dalvik Virtual Machine)

Dalvik is the process virtual machine in Google's android operating system. It is the software that runs the apps on android devices. Dalvik is thus an integral part of android, which is typically used on mobile devices such as mobile phones and tablet computers.

Android applications are compiled into the Dalvik executable. Dalvik is a specialized virtual machine designed specifically for Android and optimized for battery powered mobile devices with limited memory and CPU.

B.)Core libraries

Programs written in java and compiled to byte code. The core library contains all of the collection classes, utilities, IO, all the utilities and tools that you've come to expected to use.

4. Application Framework

It exposes the various capabilities of the Android OS to application developers that they can make use of them in their applications. This is all written in a Java programming language

It is the toolkit that all applications use. It includes applications written by Google, and it includes apps that are developer by android developers.

5. Application layer

It is most upper layer in android architecture. All the applications like camera, Google maps, browser, sms, calendars, contacts are native applications. These applications works with end user with the help of application framework to operate.

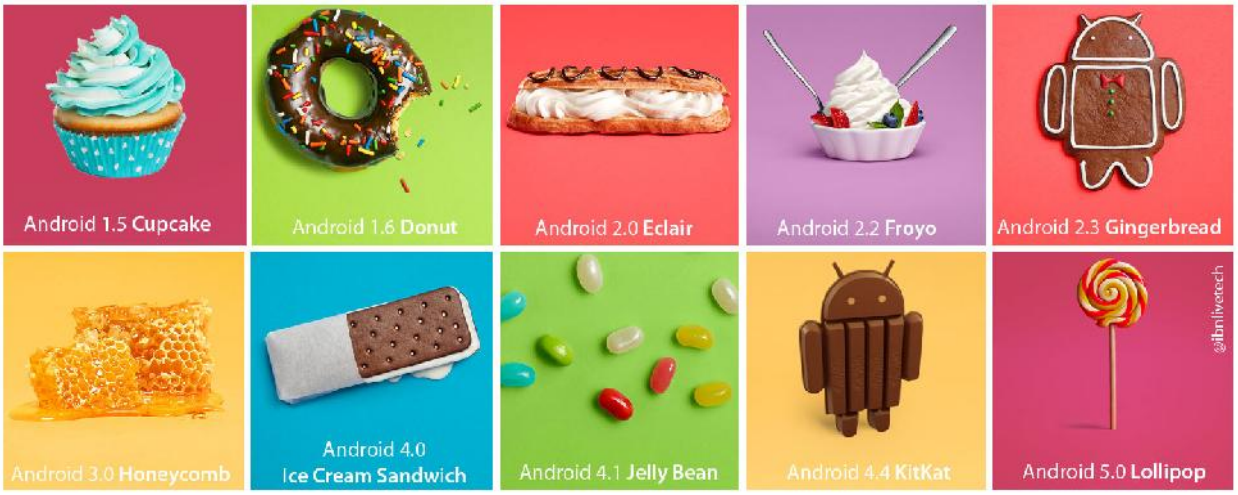
2.2.3 ADVANTAGES OF ANDROID:

1. Android is open - Because it is Linux based open source so it can be developed by anyone.
2. Multitasking - Android phones can run many applications, it means you can browse while listened to the song.
3. Easy access to the Android App Market - Android owners are people who love mobile phones application, with Google's Android App Market you can download many applications for free.
4. Can install a modified ROM - We sometimes find an unofficial ROM.That is the version that was not in accordance with the specification release our cell phones, the last way is modification. Do not worry there are many custom ROM that you can use on Android phones, and guaranteed not to harm your device.
5. Phone options are diverse – Android is different than the IOS, if the IOS is limited to the iPhone from Apple, then Android is available on mobile phones from various manufacturers, from Sony Ericsson, Motorola, HTC and Samsung. And each handset manufacturer also presents an Android phone in the style of each, such as Motorola with its Moto blur, Sony Ericsson with its Time escape. So you can freely choose the Android phone in accordance with the 'brand' favorite.
6. Ease of notification - Any SMS, Email, or even the latest articles from an RSS Reader, there will always be a notification on the Home Screen Android phone, do not miss the LED indicator is blinking, so you will not miss a single SMS, Email or even Misscall.
7. Widget – With the widgets on the home screen, you can easily access a variety of settings quickly and easily.

2.2.4 DISADVANTAGES OF ANDROID:

1. Need internet connection - Android requires an active internet connection. , so that the device is ready to go online according to our needs.
2. Advertising - Application in the Android phones can be obtained easily and for free, but in each of these applications, there will always be ads on display, either the top or bottom of the application.
3. Wasteful Battery - Android's battery is more wasteful than any other OS, because in this OS there are so many "process" running in background which quickly drains the battery of the Device.
4. Many applications contain virus- Google Play store is a box of malware i.e. many applications in it contains viruses.

2.2.5 ANDROID VERSIONS



VERSION USED IN PROJECT:

KITKAT 4.4 API LEVEL 19

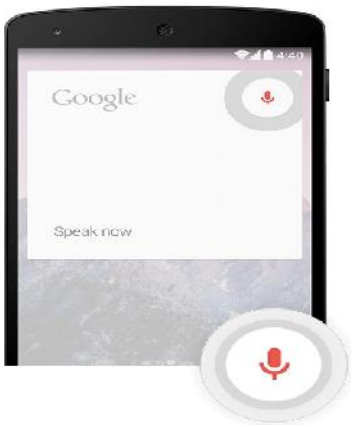
Android 4.4 "Kit Kat" is a version of the Android mobile OS developed by Google. Google announced Android 4.4 Kit Kat on September 3, 2013. Although initially under the "Key Lime Pie" ("KLP") codename, the name was changed because "very few people actually know the taste of a key lime pie." Some technology bloggers also expected the "Key Lime Pie" release to be Android 5. Kit Kat debuted on Google's Nexus 5 on October 31, 2013, and was optimized to run on a greater range of devices than earlier Android versions, having 512 MB of RAM as a recommended minimum; those improvements were known as "Project Svelte" internally at Google.

The required minimum amount of RAM available to Android is 340 MB, and all devices with less than 512 MB of RAM must report themselves as "low RAM" devices.

FEATURES:

1.) "Ok Google"

You no longer need to touch your screen to perform searches, send texts, get directions or play music. When you are on the home screen or have Google Now pulled up, you just have to say "Ok Google" followed by a command to perform one of those tasks. You can say commands like "Ok Google, where is the closest McDonalds" or "Ok Google play Eminem."



2.) Full-Screen Album And Movie Art Combined With Controls

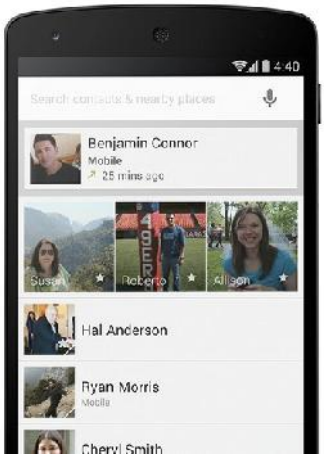
When streaming music or projecting movies to Google Chrome cast from your Kit Kat device, you will see full-screen album and movie art appear. There are controls on the lock screen that lets you play, pause, or jump to a certain song or movie chapter.

3.) Immersive Display

In previous versions of Android, the status bar and navigation buttons remained on the screen while reading an e-book, watching a movie, or playing a game. Since that was intrusive, Google added a feature in Kit Kat that hides the status bar and navigation buttons until you swipe the edge to bring them back.

4.) Contact Prioritization

Android Kit Kat prioritizes your contacts based on the people that you talk to the most. From the Contacts app, you can also search for places and businesses that are near you from the search box at the top. The Android Kit Kat Contacts app also integrates with your Google Apps contacts.



5.) Enhanced Caller ID

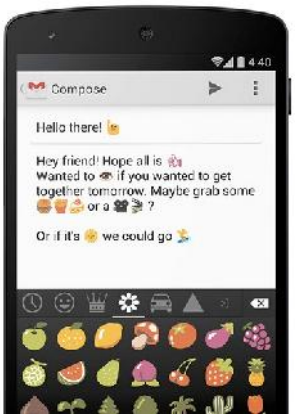
People have a tendency to ignore calls from unrecognizable numbers. If you receive a call that is not saved in your Contacts, then Android Kit Kat will attempt to retrieve the Caller ID information from local listings within Google Maps. This feature could be very useful for people that have family and friends that call from their work numbers.

6.) Message Consolidation

Android Kit Kat has consolidated SMS , MMS, video calls and Google Hangouts chat messages all in one place. The Android Kit Kat Messages app also supports location-sharing and animated GIFs through Google Hangouts.

7.) Emojis

Google has added Emojis into Android Kit Kat's Google Keyboard. Emojis is the Japanese term for ideograms and smileys used in text messages and websites. You can enhance the context of your messages by placing smileys, cars, animals, and other interesting icons with this feature.

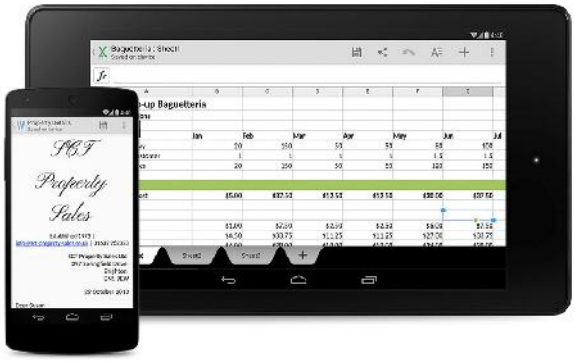


8.) Cloud Printing Support

Android Kit Kat has support for cloud printing. You can print documents, presentations, websites and photos from your KitKat phone or tablet. For this feature to work, your printer must be connected to Google Cloud Print or HP print.

9.) Quick office

Google Quick office will be preinstalled with Android KitKat. Quick office supports the editing of documents, spreadsheets, and presentations created with Office or Google Docs. When you log into Quickoffice, the application will grab the documents that have been saved in your Google Docs and Google Drive account.

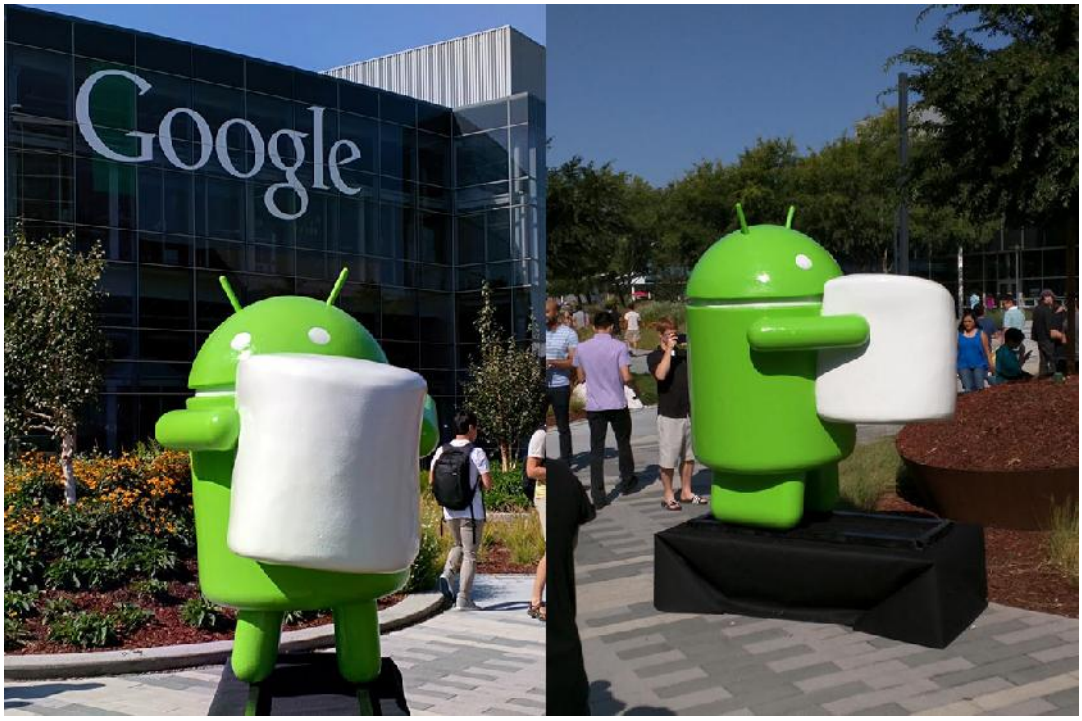


10.) Step Detector and Step Counter

Android Kit Kat has a step detector and step counter so that fitness-related apps can track when the user is walking, running, and climbing stairs. The step detector uses the accelerometer input to recognize when the user has taken a step. The step counter tracks the total number of steps since the device's last restart. The Runtastic Pedometer app uses the step detector and step counter to track whether you are taking the 10,000 steps per day that is recommended for maintaining a healthy lifestyle.

LATEST ANDROID VERSION

- Android M is named Marshmallow.
- Android M is Android Version 6.0 and released on October, 2015.



CHAPTER: 3 SYSTEM ANALYSIS

3.1 FEASIBILITY STUDY

TECHNICAL FEASIBILITY STUDY

This involves questions such as whether the technology needed for the system exists, how difficult it will be to build, and whether the firm has enough experience using that technology. Our System is technically feasible as it is being developed using Java and Backend is SQLite. Easy to install apps and run on any hardware.(android device)

OPERATIONAL FEASIBILIT STUDY

Time evaluation is the most important consideration in the development of project. The time schedule required for the development of this project is very important since more development time affects machine time, cost and cause delay in the development of other systems. Android is user friendly and easy to operate.

ECONOMICAL FEASIBILITY STUDY

This procedure is to determine the benefits and savings that are expected from a candidate system and compare with cost. If benefits outweigh cost then the decision is made to design and implement the system. Otherwise further justification or alterations in proposed system that have to be made if it is having a change of being approved .This is an on-going effort that improves in accuracy of each phase of the system lifecycle. Yes it needs internet so incurs cost,can run on lower versions and does not waste user's money.

CHAPTER: 4 SYSTEM DESIGN

4.1 SEQUENCE DIAGRAMS

A **Sequence diagram** is an interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. A sequence diagram shows object interactions arranged in time sequence.

It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario. Sequence diagrams are typically associated with use case realizations in the Logical View of the system under development. Sequence diagrams are sometimes called **event diagrams** or **event scenarios**.

A sequence diagram shows, as parallel vertical lines (lifelines), different processes or objects that live simultaneously, and, as horizontal arrows, the messages exchanged between them, in the order in which they occur. This allows the specification of simple runtime scenarios in a graphical manner.

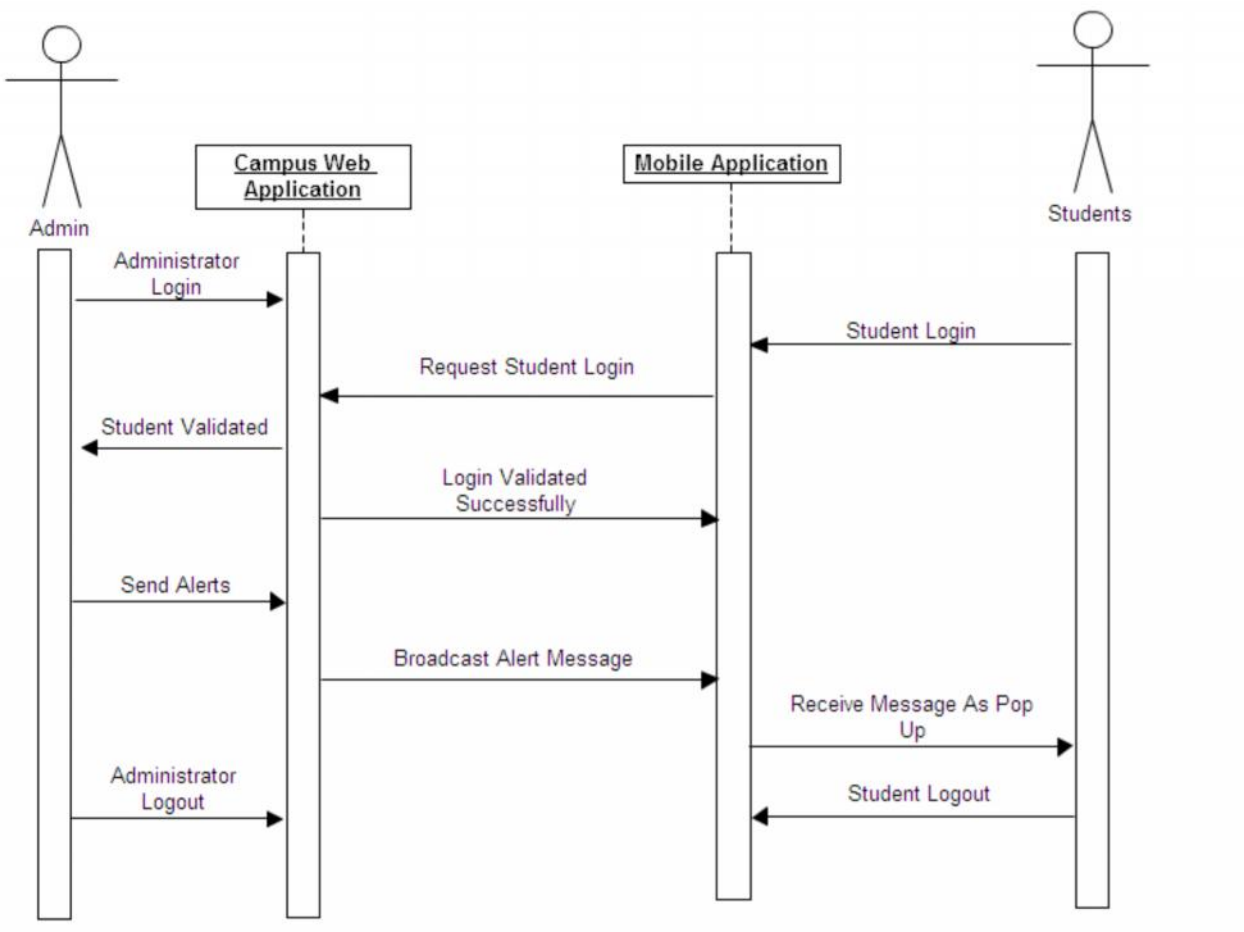


Fig 4.1 Sequence Diagram for Sending Alerts

Description:

This diagram shows 2 actors (lifelines) i.e. Admin & Student and there are 2 object (lifelines) Campus Web Application and Mobile Application. First, Admin Login's into the Web application. User Login's into the Mobile Application, then the request is send to the Web Application via Mobile Application, this in turn is send to the Admin for validation. Then if the Student is validated successfully, only then he/she is able to access the Application .If there are some alert messages for that particular student then Admin sends alert message to Web Application which in turn broadcast the Alert message to Mobile Application .The POP -UP Message is received by the Student.

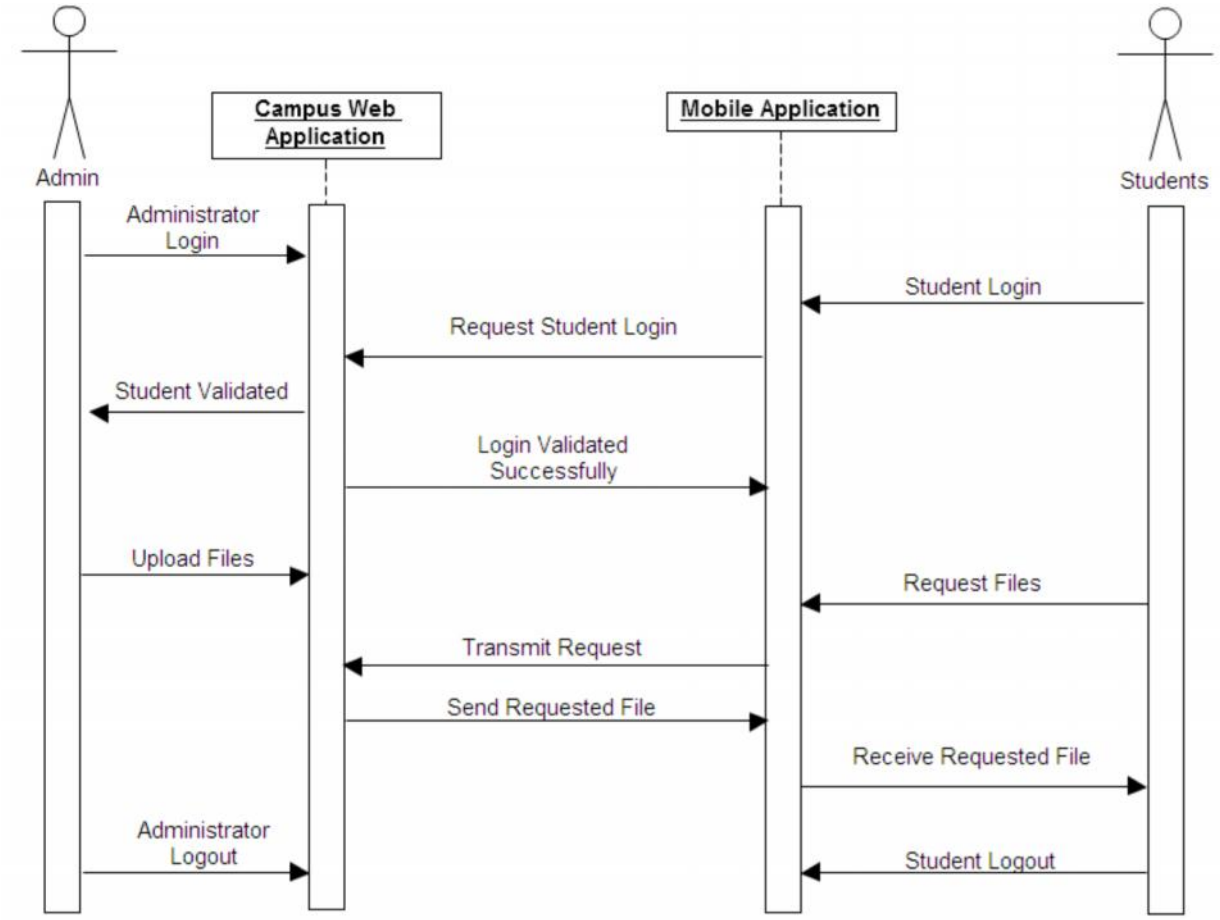


Fig 4.2 Sequence Diagram for Requesting Files

Description: This diagram shows 2 actors (lifelines) i.e. Admin & Students and there are 2 object (lifelines) Campus Web Application and Mobile Application. First, Admin Login's into the Web application. User Login's into the Mobile Application, then the request is send to the Web Application via Mobile Application, this in turn is send to the Admin for validation. Then if the Students is validated successfully, only then he/she is able to access the Application. Then if Student needs File, so he/she will request for the file to Mobile Application .Then Mobile Application will transmit the request to the Campus Web Application. The Admin will upload the Requested Files and then send the requested file to Mobile Application from Web Application. The Students will receive the Requested File. The Administrator and the Student both Logouts their respective applications.

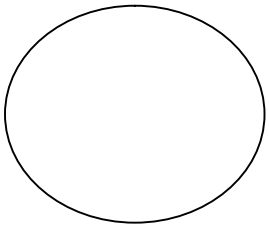
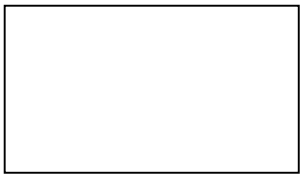
4.2 Data Flow Diagrams

Data flow diagram (DFD) represents the flows of data between different processes in a business. It is a graphical technique that depicts information flow and the transforms that are applied as data move form input to output. It provides a simple, intuitive method for describing business processes without focusing on the details of computer systems. DFDs are attractive technique because they provide what users do rather than what computers do.

Representation of Components

DFDs only involve four symbols. They are:

- Process
- Data Flow
- Data Store
- External entity

Symbols	Description
	**Process** A process or task that is performed by the system. Transform of incoming data flow(s) to outgoing flow(s).
	DataFlow Movement of data i.e. flow of data in the system
	**DataStore** A data store, a place where data is held between processes It may be as simple as a buffer or a queue or a s sophisticated as a relational database
	**ExternalEntity** Sources of destinations outside the specified system boundary. An entity is a source of data or a destination for data.

1) DFD Level -0

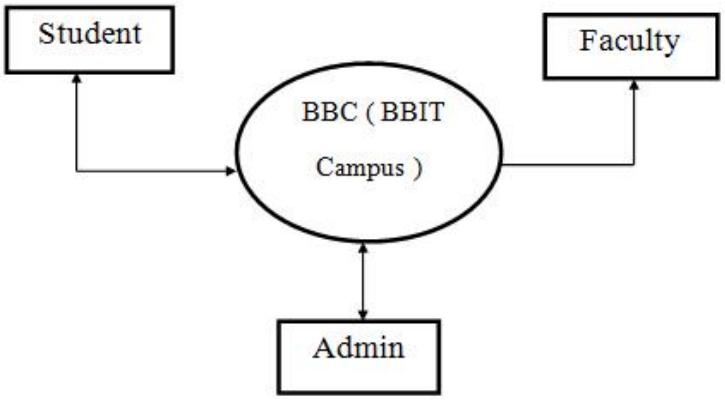


Fig 4.3DFD Level-0

Description :

There are 3 entities Student ,Faculty and Admin .All these entities i.e. Student ,Faculty and Admin are connected to the BBC application .

2) DFD Level-1

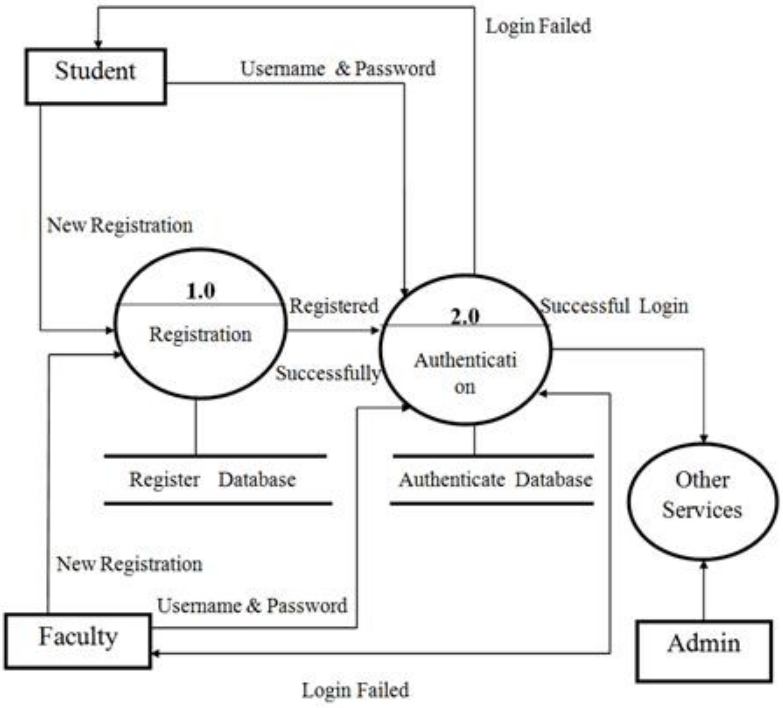


Fig 4.4 DFD level-1

Description :

Here, there are 3 entities Student, Admin and Faculty. There are 3 processes, they are Registration, Authentication and Other Services. There are 2 databases connected with the two processes, they are Register Database and Authenticate Database connected Registration and Authentication Processes. If the student registers, the values are stored into the Register Database and is then registered successfully tries to authenticates and stores the values username and password in the authenticate database and then the user is successfully login in to the application and then the user can use the application .And if the username and password does not match to the values into the Authenticate Database, Login fails.

3) DFD Level-2

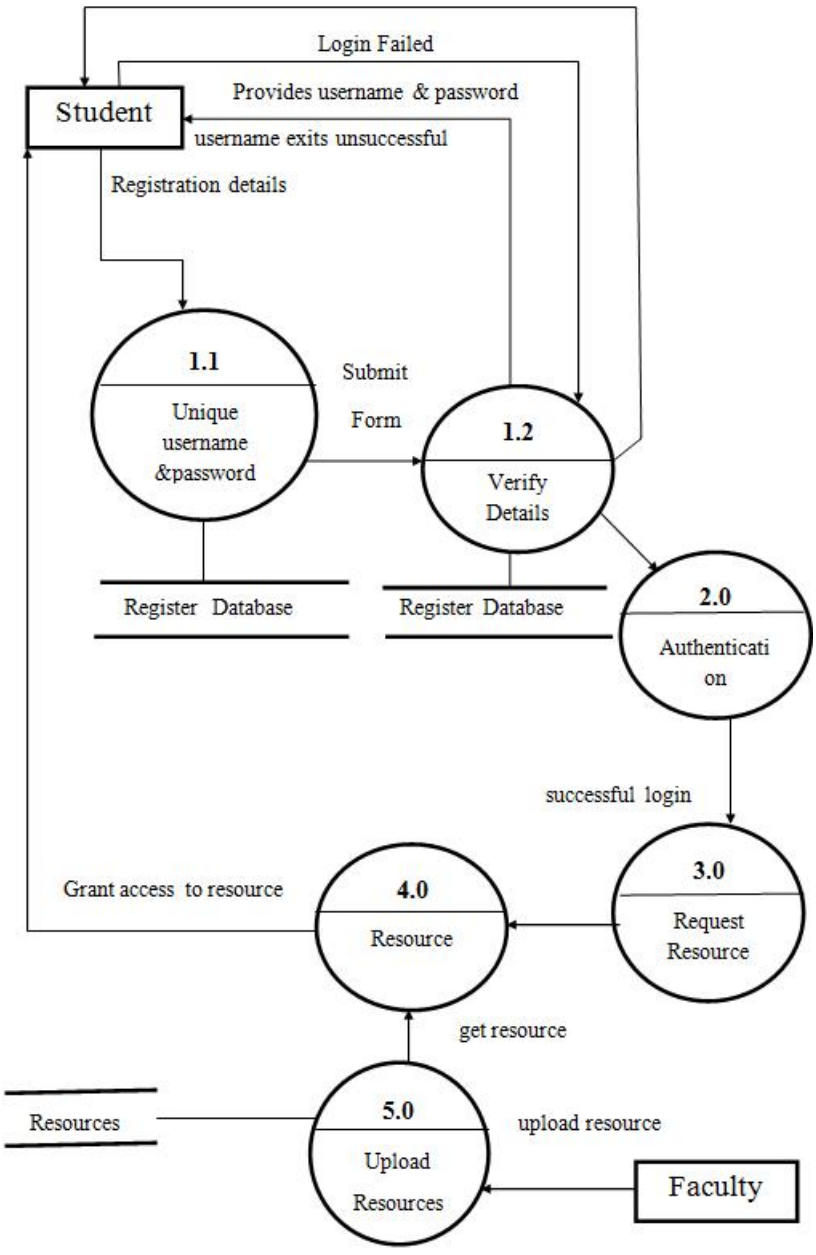


Fig 4.5 DFD level - 2

Description :

Student registers into the application and stores the value into the Register Database and Submit form to the verify detail process which will check whether username exists or not.If username exits,then login failed and if the username doesnot exits then the value will be stored into the Authenticate Database and then the user will be authenticate to login into the application

If the user requests for any resource and resource will be uploaded by the Faculty members and and the resource will be stored into the Resource table and then the resource will be accessed by the Student.

4.3 Data Dictionary

1. Table Name: **Admin_Mstr**

Description: This table contains information about admin username and password

No.	Field Name	Data Type	Constraint	Description
1	Unm	Varchar(50)	-	User Name
2	Pwd	Varchar(50)	-	Password

2. Table Name: **Faculty_Mstr**

Description: This table contains information of Faculty with their full Details.

No.	Field Name	Data Type	Constraint	Description
1	Fac_Id	Int	Primary Key	Hold The Faculty Id
2	Fac_Nm	Varchar(50)	-	Contain Faculty Name
3	F_Nm	Varchar(50)	-	Contain Faculty Father Name
4	M_nm	Varchar(50)	-	Contain Faculty Mother Name
5	Dob	Varchar(50)	-	Contain Birth Date of Faculty
6	gen	Varchar(8)	-	Contain Faculty Gender
7	cst	Varchar(50)	-	Contain Cast of faculty

8	Mno	char(10)	-	Contain Mobile number of faculty
9	E_ID	Varchar(50)	-	Email Id Of Faculty
10	Doj	Varchar(50)	-	Contain Date of Join of Faculty
11	Corr_Add	Varchar(max)	-	Contain Corresponding Address
12	Per_Add	Varchar(Max)	-	Contain Permanent Address
13	Sal	Numeric(18,2)	-	Contain Salary of Faculty
14	Design	Varchar(max)	-	Contain Faculty Designation
15	Qualif	Varchar(max)	-	Contain faculty Qualification
16	Unm	varchar(50)	-	Contain faculty User Name
17	Pwd	varchar(50)	-	Contain faculty Password
18	Cpwd	varchar(50)	-	Contain faculty Confirmed Password

3. Table Name:- **Registration_Mstr**

Description: This table contains information of Student with their full Details.

No.	Field Name	Data Type	Constraint	Description
1.	S_No	Int	Primary key	Contain Student Number
2.	S_Nm	Varchar(50)	-	Contain Student Name
3.	F_nm	Varchar(50)	-	Contain Student Father Name
4.	M_nm	Varchar(50)	-	Contain Student Mother Name
5.	Dob	Varchar(50)	-	Contain BirthDate of Student
6.	gen	Varchar(8)	-	Contain Student Gender
7.	Mno	char(10)	-	Contain Mobile number of Student
8.	E_ID	Varchar(50)	-	Email Id Of Student
9.	C_name	Varchar(50)	-	Contain Student Course Name
10.	Corr_Add	Varchar(max)	-	Contain Corresponding Address
11.	Per_Add	Varchar(Max)	-	Contain Permanent Address
12.	Qualif	Varchar(max)	-	Contain Student Qualification

13.	Unm	varchar(50)	-	Contain Student User Name
14.	Pwd	varchar(50)	-	Contain Student Password
15.	Cpwd	varchar(50)	-	Contain Student Confirmed Password

4. Table Name:- **Book_mstr**

Description: This table contains information of Book with their full Details.

No.	Field Name	Data Type	Constraint	Description
1	b_id	Int	Primary Key	Hold The Book ID
2	b_title	Varchar(50)	-	Contain Book Title
3	b_auth	Varchar(50)	-	Contain Book Author Name
4	b_pub	Varchar(50)	-	Contain Book Publisher Name
5	b_pr	char(10)	-	Contain Book Price
6	cvr_ph	Varchar(50)	-	Contain Book Cover Photo
7	b_desc	Varchar(Max)	-	Contain Book Description

5. Table Name:- **Education_mstr**

Description: This table contains information of Student Education with Details.

No.	Field Name	Data Type	Constraint	Description
1	id	Int	Primary Key	Hold The Education ID
2	edu	Varchar(50)	-	Contain Student Education

6. Table Name:- **Course_mstr**

Description: This table contains information of Student Course with Details.

No.	Field Name	Data Type	Constraint	Description
1	c_id	Int	Primary Key	Hold The Course ID
2	Edu	Varchar(50)	-	Contain Student Education
3	c_name	Varchar(50)	-	Contain Student Course Name

7. Table Name:- **Gallery_mstr**

Description: This table contains information of photo with Details.

No.	Field Name	Data Type	Constraint	Description
1	Id	Int	Primary Key	Hold The Photo ID
2	photo	Varchar(50)	-	Contain Photo

3	Descry	Varchar(max)	-	Contain Photo Description

8. Table Name:- **Material_mstr**

Description: This table contains information of Student Material Details.

No.	Field Name	Data Type	Constraint	Description
1	m_id	Int	Primary Key	Hold The material ID
2	m_ name	Varchar(50)	-	Contain Material Name
3	c_ name	Varchar(50)	-	Contain Course Name
4	m_type	Varchar(50)	-	Contain Material Type
5	m_upload	Varchar(max)	-	Contain Material upload

9. Table Name:- **Video_mstr**

Description: This table contains information of Video with Details.

No.	Field Name	Data Type	Constraint	Description
1	Id	Int	Primary Key	Hold The Video ID

2	v_title	Varchar(50)	-	Contain Video title
3	descr	Varchar(MAX)	-	Contain Video Description
4	v_url	Varchar(MAX)	-	Contain Video URL

10. Table Name:- **Order_book_mstr**

Description: This table contains information of Book Order with Details.

No.	Field Name	Data Type	Constraint	Description
1	b_id	Int	Primary Key	Hold The Book ID
2	b_title	Varchar(50)	-	Contain Book Title
3	b_pr	numeric(18, 0)	-	Contain Book Price
4	Qty	char(10)	-	Contain Book Quantity

11. Table Name:- **Feedback_mstr**

Description: This table contains feedback from student or Faculty with Details.

No.	Field Name	Data Type	Constraint	Description
1	Id	Int	Primary Key	Hold The student or faculty ID

2	Name	Varchar(50)	-	Contain Student or Faculty Name
3	Email	Varchar(50)	-	Contain Student or Faculty Email id
4	Feedback	Varchar(MAX)	-	Contain Feedback from student or faculty

12. Table Name:- **Contact_mstr**

Description: This table contains information of Admin with Details.

No.	Field Name	Data Type	Constraint	Description
1	Id	Int	Primary Key	Hold The admin ID
2	Name	Varchar(50)	-	Contain Admin Name
3	Address	Varchar(MAX)	-	Contain Admin Address
4	Mno	char(10)	-	Contain admin Mobile number
5	email	Varchar(50)	-	Contain admin email id

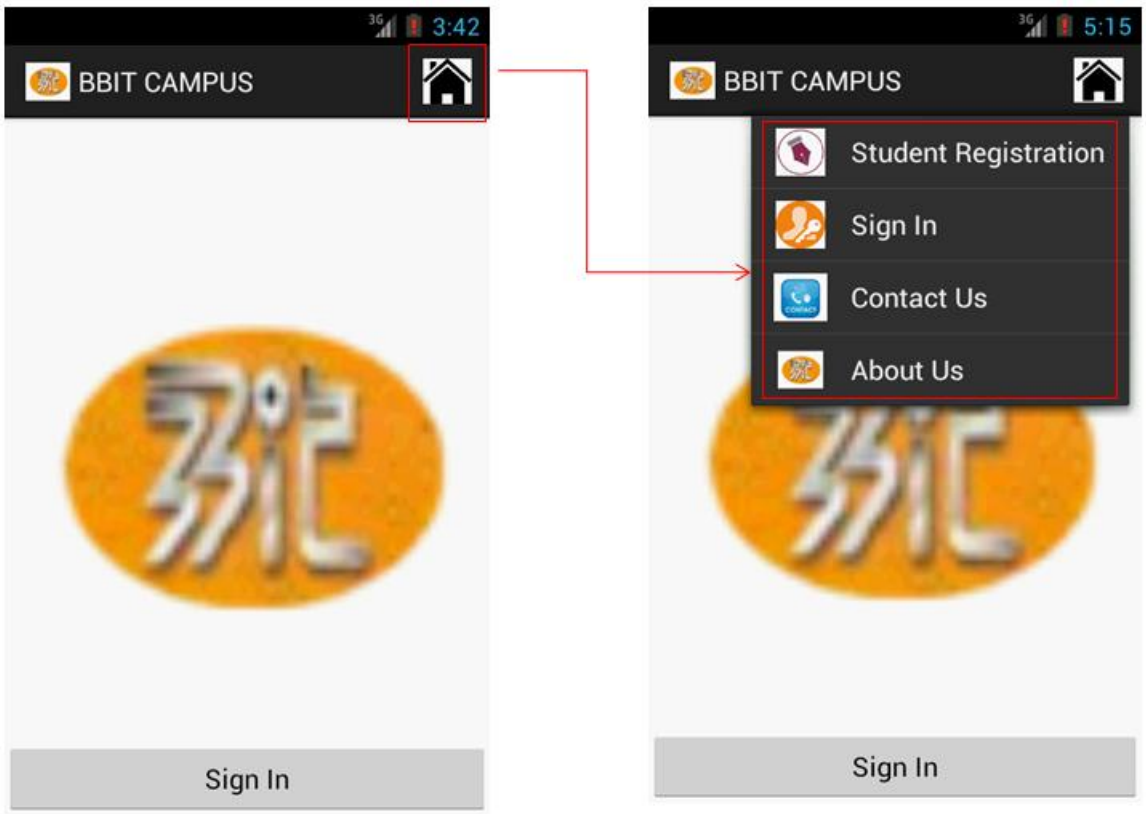
13. Table Name:- **About_mstr**

Description: This table contains information about website with detail

No.	Field Name	Data Type	Constraint	Description
1	Id	Int	Primary key	Hold The ID
2	Detail	Varchar(50)	-	Contain Detail About website

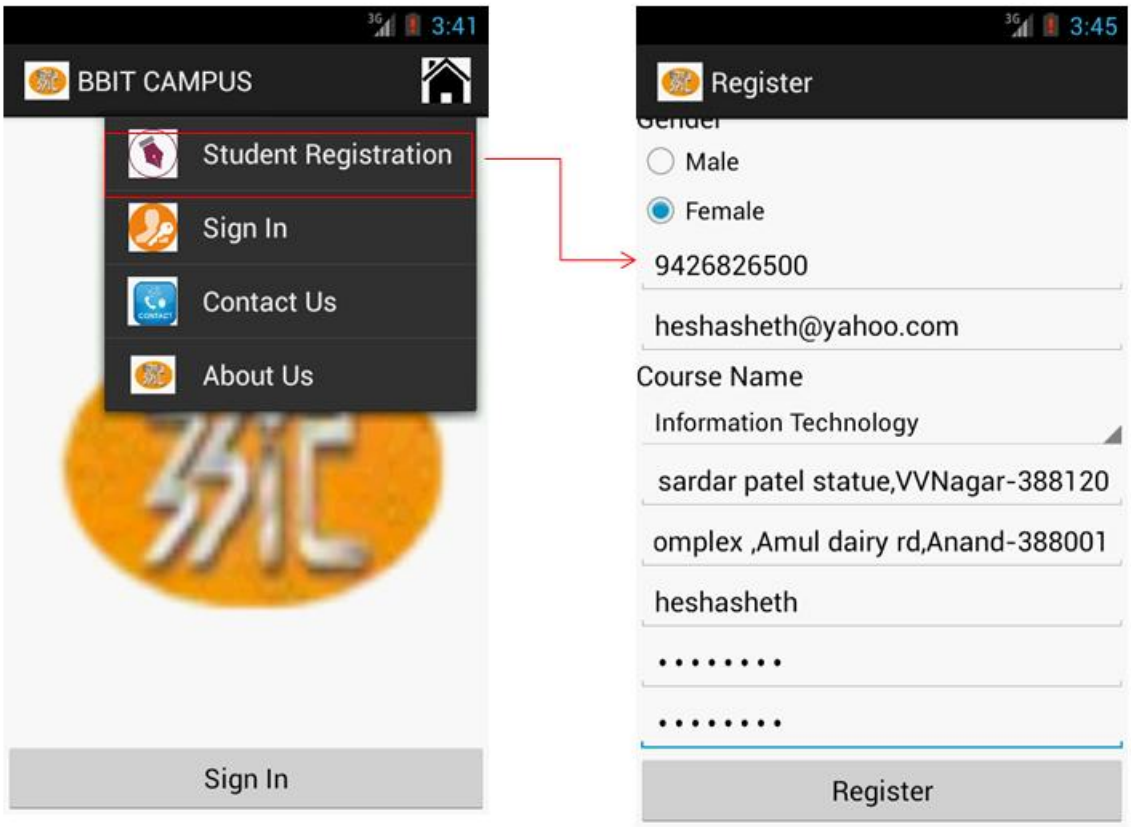
CHAPTER: 5 SCREENSHOTS OF THE APP

1. Registration



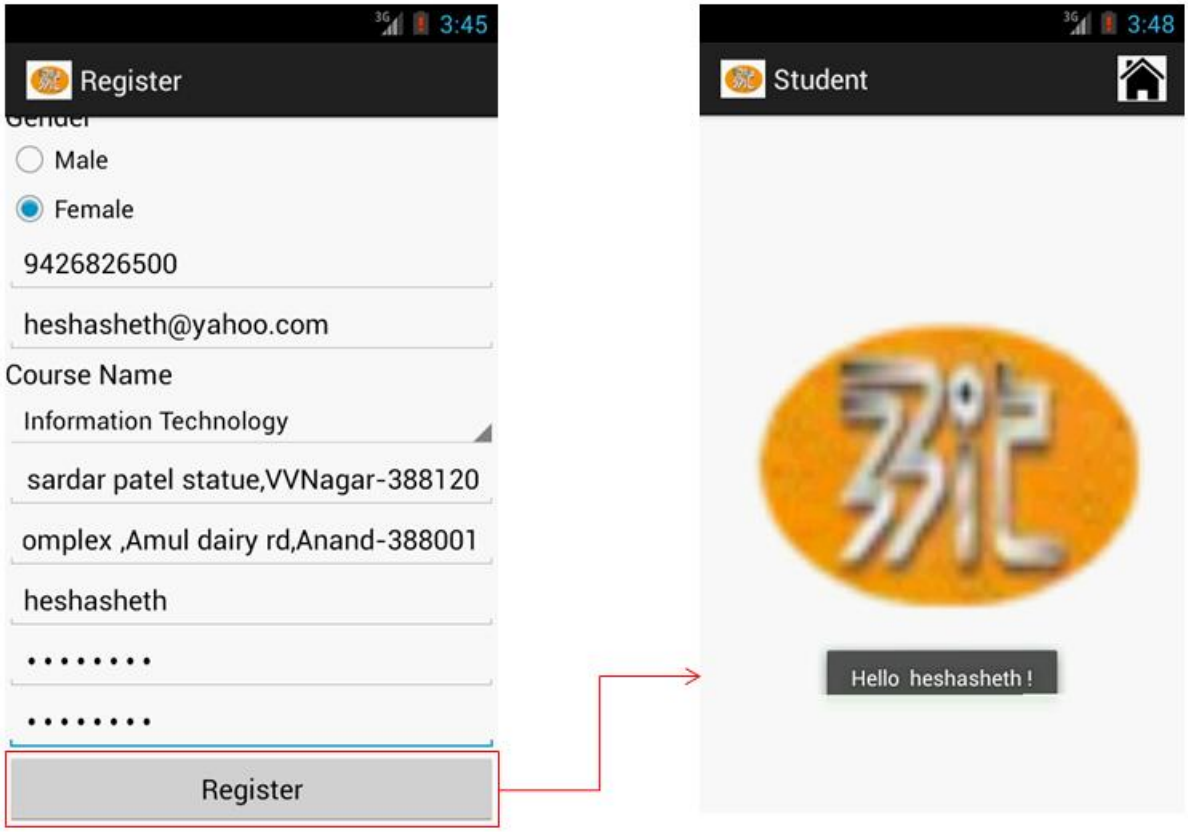
Description :

The above left side activity is the main activity i.e. the main page/form. Then after clicking the menu icon on the right side .Then the following menu will be opened shown in next activity.



Description:

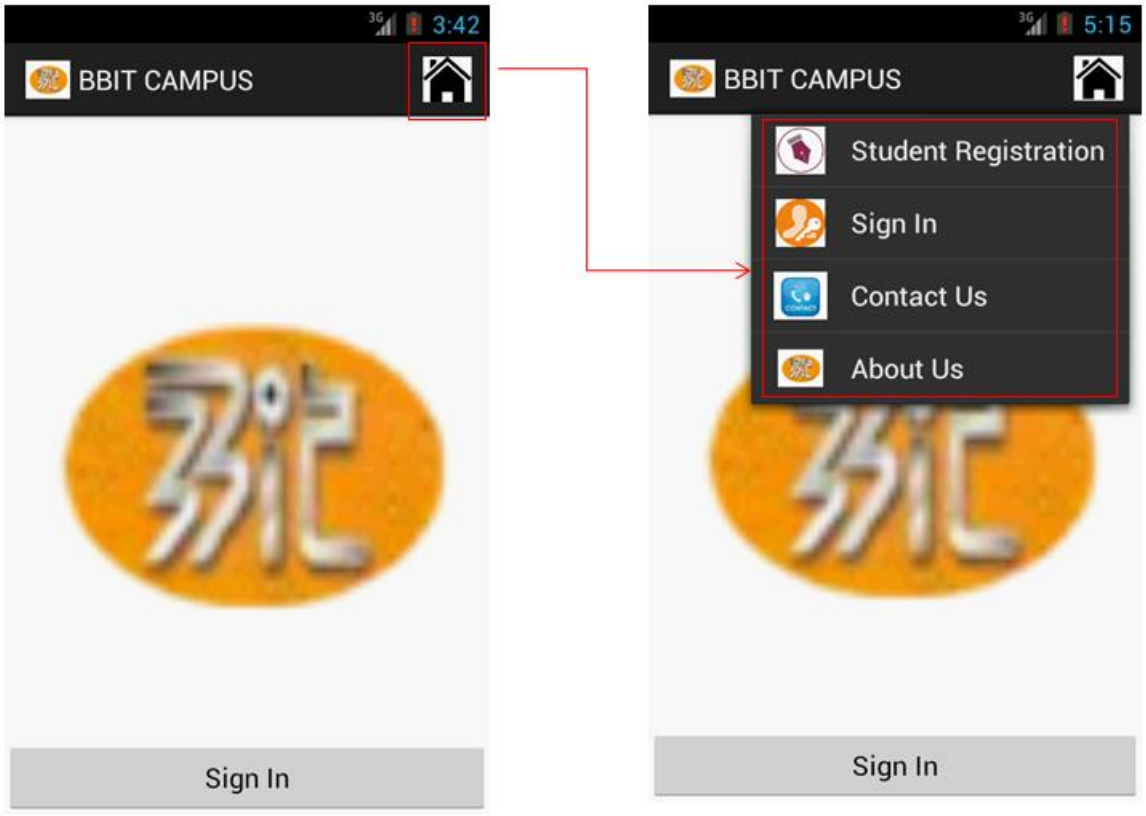
Then after selecting the Student Registration menu item of the Menu, the Register activity will be opened.



Description:

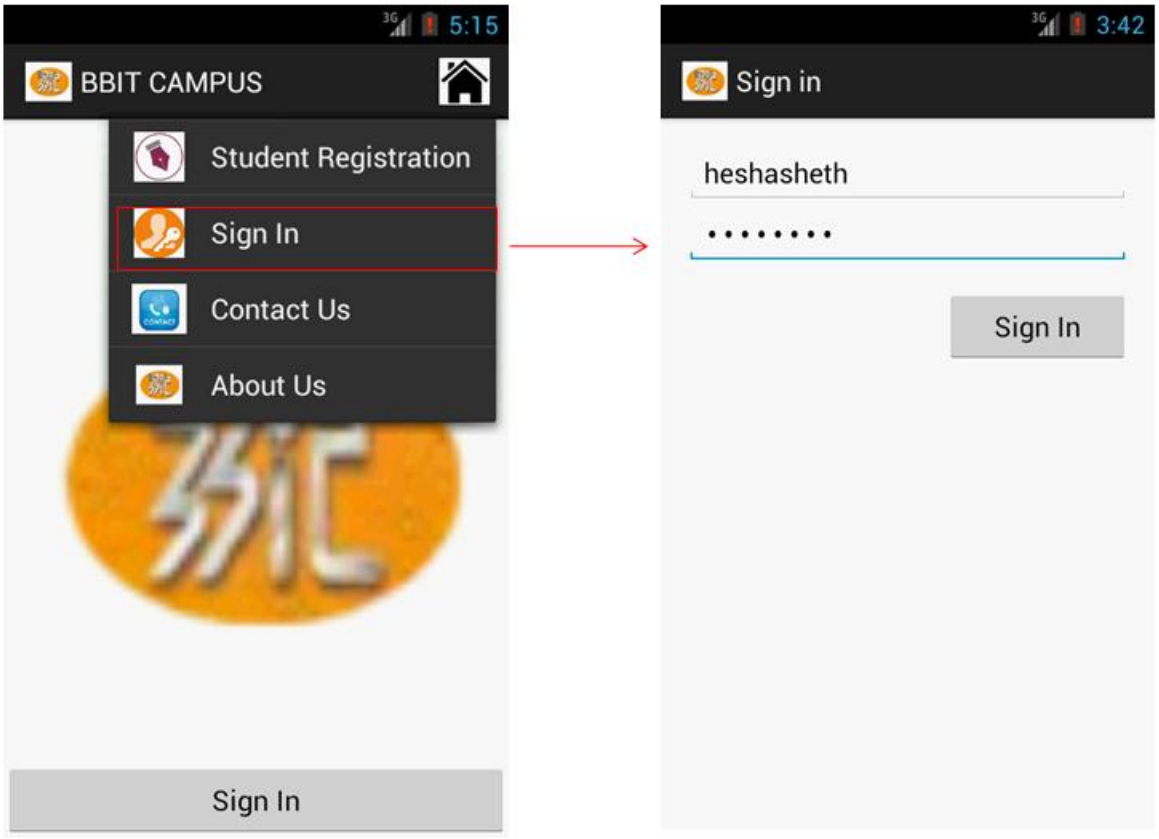
After adding the details of student to register into the app and then clicking the Register button. The next activity which is Student activity will be opened.

2. Login



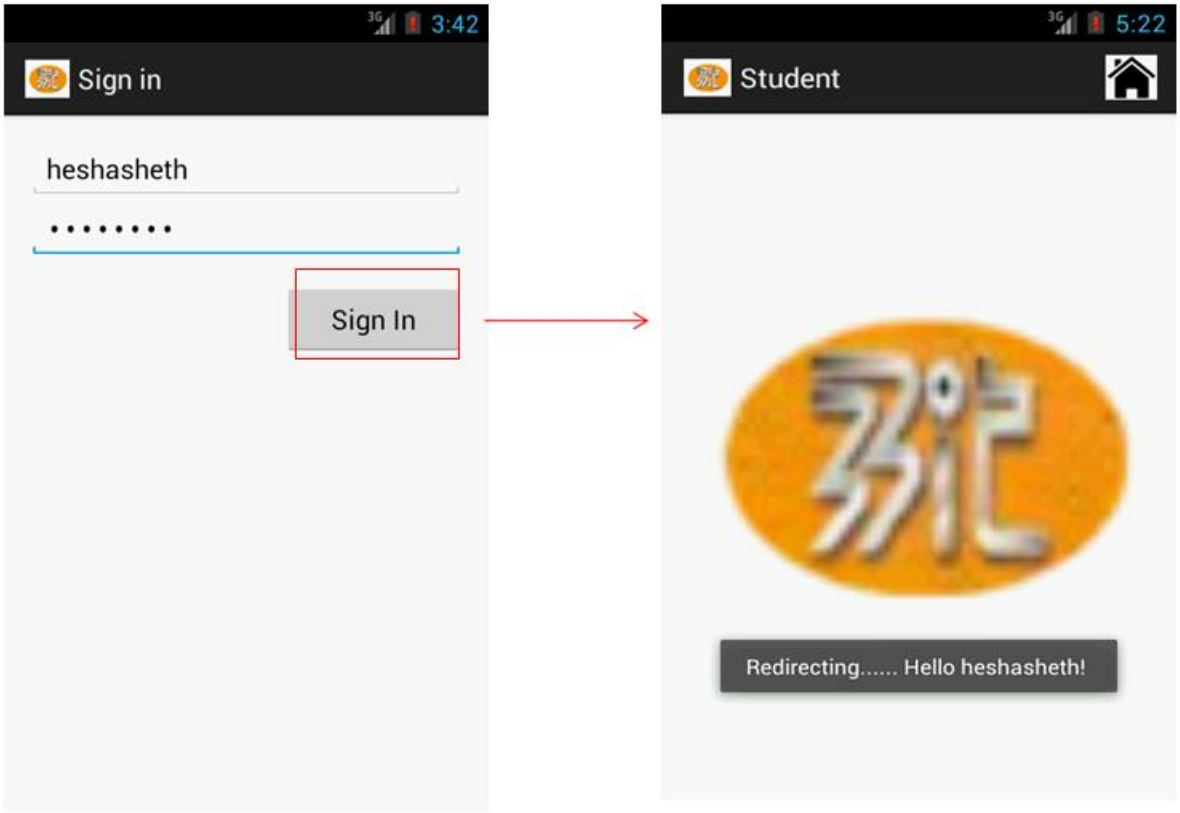
Description :

The above left side activity is the main activity i.e. the main page/form. Then after clicking the menu icon on the right side .Then the following menu will be opened shown in next activity.



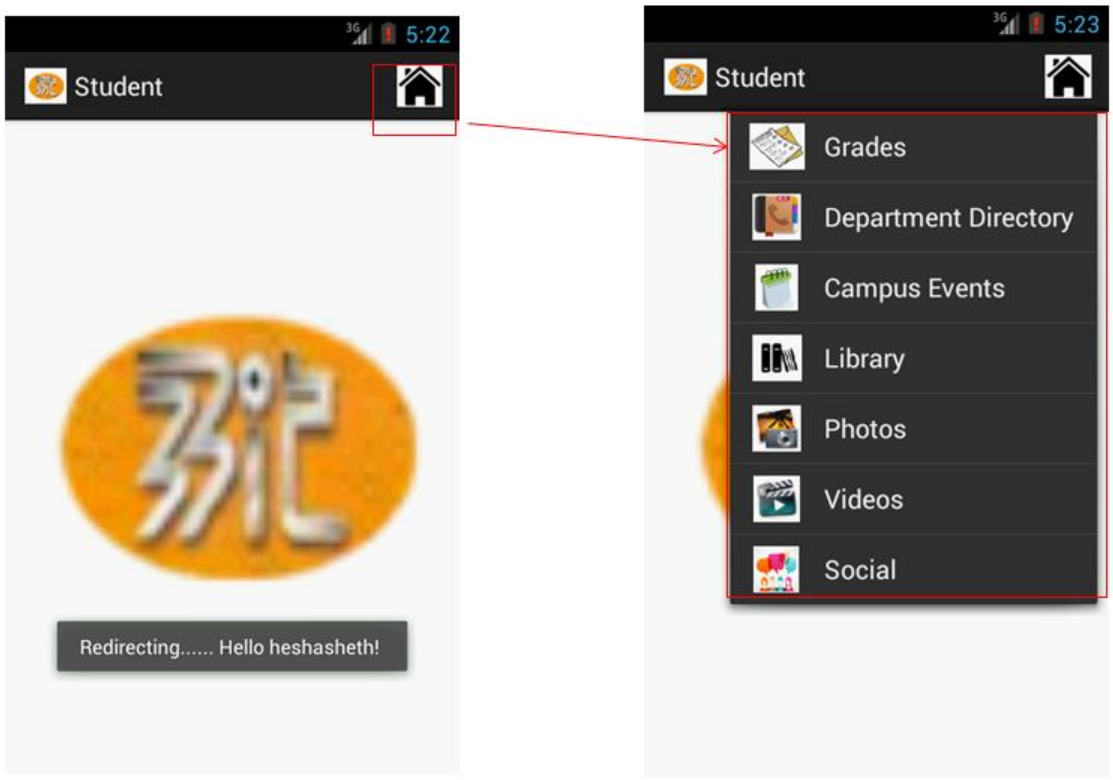
Description:

Then after selecting the Sign in menu item of the Menu, the Sign in activity will be opened.



Description:

After adding the valid username and password and clicking the Sign in button. The next activity which is Student activity will be opened.



Description:

There is a Menu in the Student activity. By clicking on the menu icon, the following menu is opened.

CHAPTER: 6 ADVANTAGES

1) This App is especially for BBIT students .Students can get their study related information at one place. They can download study materials, eBooks, etc. They can know their results, rank in their college, etc.
2) Easy way and a new way of interaction between students and teachers.
3) Simple and convenient to use; Simple user interface and user-friendly.
4) It provides mobility and compatibility to Android mobiles.

CHAPTER: 7 FUTURE ENHANCEMENT

1. After developing the application, the application can be extended to support IOS devices.
2. Many functionalities can be added such as payment of fees.

CHAPTER: 8 CONCLUSION

Thus I have developed a novel approach to share information between students, lecturers and the administration in order to enhance quality of information in campus environment. The concept to develop BBC is to access information anywhere and at one place.

BIBLOGRAPHY

- **www.anddev.org**
- **www.stackoverflow.com**
- **Beginning with Android Application Development by Wei-Meng Lee**