

# Interactive Club/Chapter Android Application for College Students

Pravesh Jain, E Mail: [jainpravesh97@gmail.com](mailto:jainpravesh97@gmail.com); Vaishali Yegi, E mail: [vaishaliyegi@gmail.com](mailto:vaishaliyegi@gmail.com);

Mudit Gupta, E mail: [mudgpt@gmail.com](mailto:mudgpt@gmail.com) .

Professor Prabu S, E mail: [sprabu@vit.ac.in](mailto:sprabu@vit.ac.in)  
VIT UNIVERSITY, VELLORE, TAMIL NADU

## Abstract

The VITWale app is composed of two main components: a client-side application which will run on Android handsets, and a server-side application which will support and interact with various client-side features. The system is designed to facilitate the process of updating VIT Students about various events and workshops happening in VIT University and also other useful stuff like Clubs recruitments that will help students to remain updated every time.

**Keywords:** *Club/Chapter Application, Principal Component Analysis Firebase, Prototype Model, Digitisation, E-publicising*

## 1. INTRODUCTION

The Application will be a club based application, which will have all the information related to events and activities happening in and around VIT University. It will be based on android platform. To promote the effect of Digitisation all over our VIT campus by introducing an Application which will provide access to all the events and activities related to various clubs and chapters in our campus. It will be a platform which will enable the students and the staff to get to know about the events happening in VIT University.

The VITWale app is composed of two main components: a client-side application which will run on Android handsets, and a server-side application (FIREBASE) which will support and interact with various client-side features. The firebase online cloud storage is a platform where we can store the information on cloud server and there is no third-party application to fetch data. It reduces the backend pressure on the developer.

Since everyone has moved to smartphones so we've chosen android operating system to target maximum audience. The project is developed in Java Programming Language by using the Android Studio IDE (Integrated Development Environment). We use the Android Software Development Kit (SDK) which includes a variety of custom tools that help us develop mobile applications on the Android platform. The most important of these are the Emulator and the Android Development Tools (ADT) plug-in for Android Studio.

Firestore Real time database is a cloud hosted database that supports multiple platforms Android, iOS and Web. Data is stored in JSON format and if we do any changes in data then it is reflected immediately by performing a sync across all the platforms & devices. This allows us to build more flexible real time apps easily with minimal effort.

## 2. RELATED WORK AND MOTIVATION

Existing methodology in VIT for our project perspective is very inefficient as the resources such as paper are being over exploited and secondly students have to go and search for information here and there. Colleges at abroad like MIT, Coventry University uses such kinds of software application in publicizing their events happening in their campuses. So taking reference from that we are implementing this idea here at VIT.

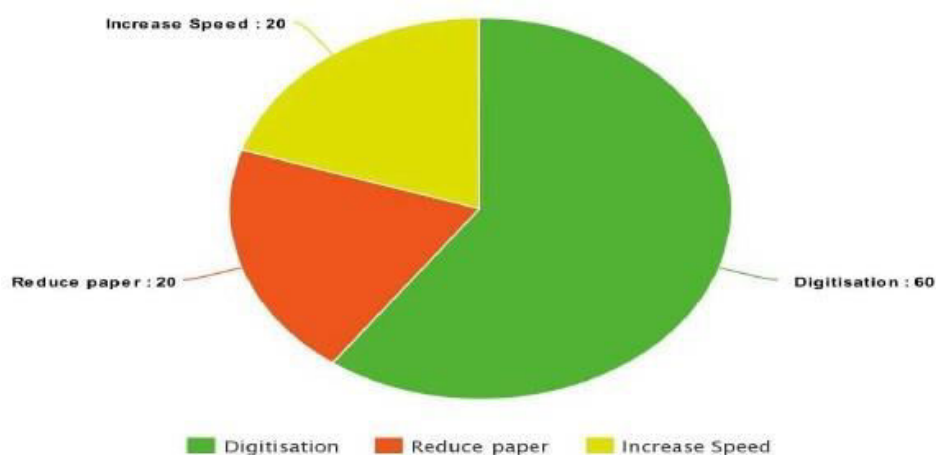
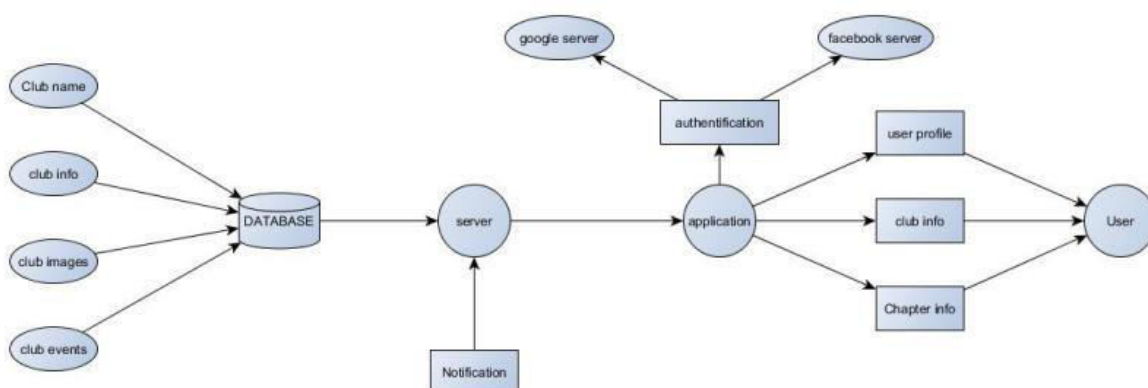


Fig 1. Objectives of Android Application

### 3. PROPOSED SYSTEM DESIGN

#### 3.1. ARCHITECTURE AND DESIGN



The Application will be a club based application, which will have all the information related to events and activities happening in and around VIT University. It will be based on android platform.

To promote the effect of Digitisation all over our VIT campus by introducing an Application which will provide access to all the events and activities related to various clubs and chapters in our campus. It will be a platform which will enable the students and the staff to get to know about the events happening in VIT University.

The VITWale app is composed of two main components: a client-side application which will run on Android handsets, and a server-side application which will support and interact with various client-side features. The system is designed to facilitate the process of updating VIT Students about various events and workshops happening in VIT University and also other useful stuff like Clubs recruitments that will help students to remain updated every time.

#### OPERATING ENVIRONMENT

Since everyone has moved to smartphones so we've chosen android operating system to target maximum audience.

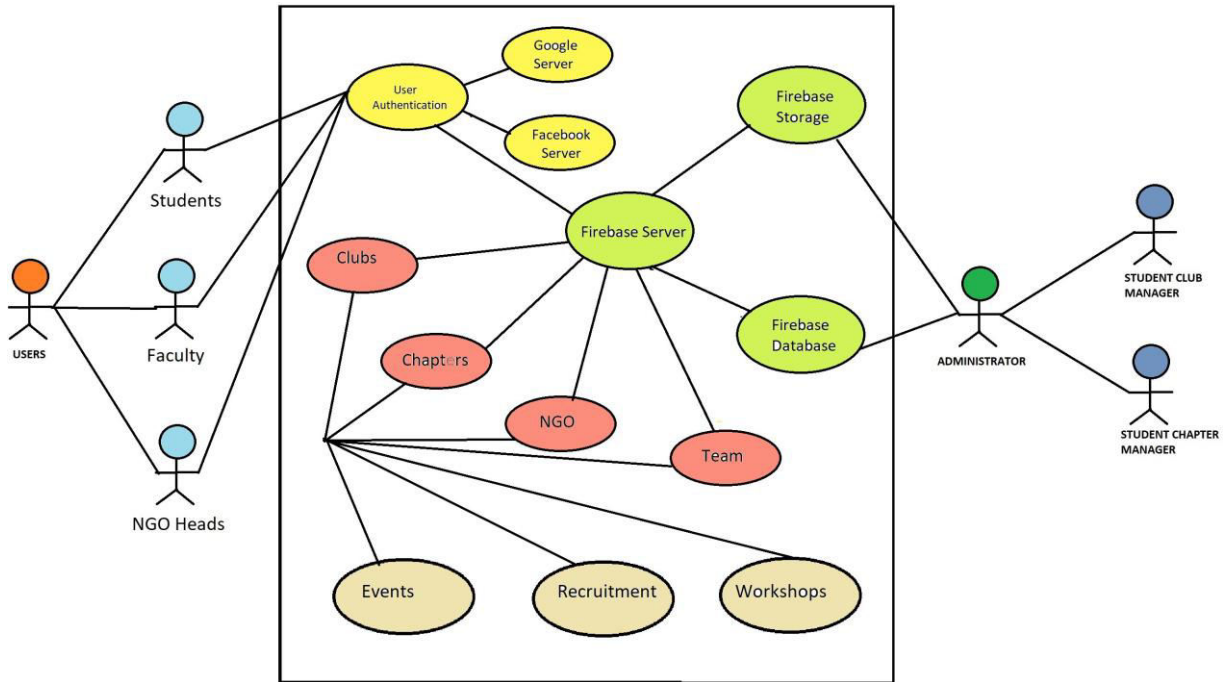
#### FIREBASE DATABASE

The data will not be stored in the app, but will be separately created as Firebase environment. Attributes will be connected to Firebase to fetch Data from it. Each attribute will be in connection to this cloud server based online database, there will be a notification feature in our application which will send notification on modification of any

attribute or addition of attributes. Specifically, here if any new event or activity is added by the club, students will receive a notification regarding it.

Since we are using firebase so there would be an Authentication mechanism using either by Google server or Facebook server. Application layer will be a medium in between server and end users. Data will be stored for user account profiles, various information regarding clubs and chapter, not only text but also images will be stored.

### USE CASE DIAGRAM FOR PROPOSED PROJECT



### UI STRUCTURE

A first-time user of the mobile application should see the log-in page when he/she opens the application. If the user has not registered, he/she should be able to do that on the log-in page. After the login, the user will be redirected to the Home Screen of the app where various clubs’ information shall be provided along with the daily updates.

### BACKEND STRUCTURE

For storing data, we are using an online cloud database named as FIREBASE, instead of implementing the old methodologies of storing data on Application itself which causes: Large application size  
 Slow access of information.

### DATA DICTIONARY

Basically there will be different modules included in this project connected to server. Here we have

- Clubs,
- Chapter,
- NGO,
- Team

Under each section comes sub modules, under Clubs the major Modules are:

- Events,
- Recruitments,
- Workshops

Similarly in NGO and chapters also. Further they are divided into many attributes like venue, date etc. Here the modules are connected to the online cloud Database called Firebase, which provides faster plus secure access of data.

#### 4. PROPOSED METHODOLOGY

##### PROCESS MODEL SELECTED

Process model adopted by our project is “Prototype mode”, here the final product is a prototype, based upon the suggestion from the audience (customers) modifications are made to obtain a new updated version of the software application. We have chosen this model because we don't have all the requirements details. As the software will be used based upon the suggestions of the clients we will modify our application.

In this model the developer and client interact to establish the requirements of the software. Since our project is based upon clubs and chapter related activities in VIT University so we will seek the requirement from the clubs and chapter point of view.

This is followed up by the quick design, in which the visible elements of the software, the input and the output are designed. The quick design stresses the client view of the software.

The costumers then evaluates the prototype and provides its recommendations and suggestion to us. The process continues in an iterative manner until the all the user requirements are met.

##### COMPONENT DESIGN

Here we create the user interface for clubs and then design a database and then connection is made using Firebase platform, then database for student is made (just the tables). Then a final connection to server to Application is made for use.

The major components in this application are:

- User interface,
- Firebase database for backend

##### 4.2.1 OVERVIEW OF USER INTERFACE



A first-time user of the mobile application should see the log-in page when he/she opens the application. If the user has not registered, he/she should be able to do that on the log-in page. After the login, the user will be redirected to the Home Screen of the app where various clubs' information shall be provided along with the daily updates.

##### NOVELTY

In order to analyze the performance of our application, we distributed the Software to 50 Students and asked them to use it to the fullest. And feedback was noted down after that, followed by detailed analysis.

##### Easy To Handle App

Since everything in our project is graphically designed so it becomes very easy for a user to handle.

##### Less Battery Consumption

Battery consumption of a device depends upon three factors.

- 1- Length of Code used
- 2- Database Storage Mechanism
- 3- Functionalities Used

Here, we have used the Android Studio platform to develop the application using Java. And we tried to implement the code in such a way that the code length is minimized.

And secondly we are using the online cloud storage called “FIREBASE” which provides a platform to store data in cloud instead of increasing the size of the Application. So since the data is stored in cloud so Application size is reduced thus ensuring less battery consumption.

### Highly Secure

Here we have used Google authentication for users to get logged in on our application, which not only provides security but also prevents unnecessary users to get signed in.

### FEATURES

Push notification and Daily Events updates: The most important system features of our project.

Necessary Info: Users will get the information about the new events of the club and chapters. All things at the same place: Users and clubs get a common platform to share the information. Clubs and chapters info: App contains all the information regarding clubs and chapters of VIT University.

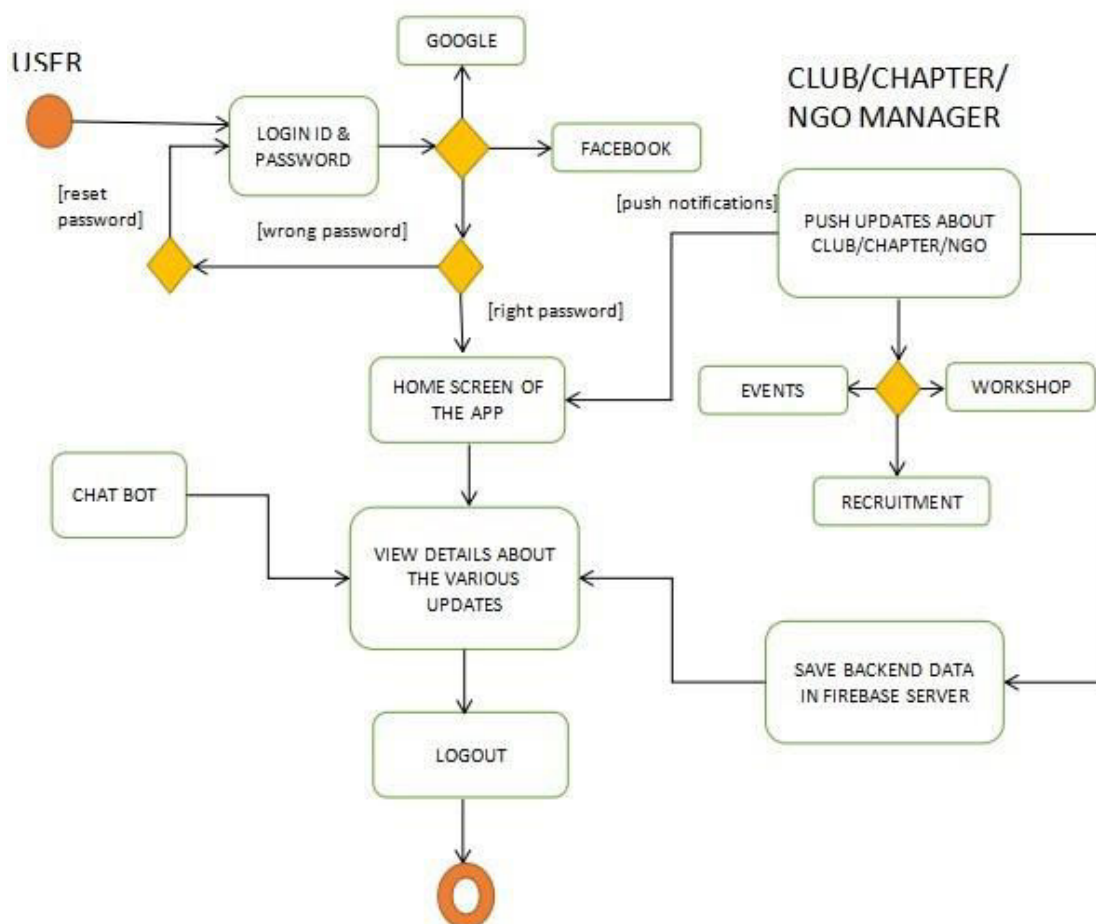
OS support: This App is for android version 4.4.0 (kit-Kat) and above.

Required authentication: This app is unauthorized protected. User can use facebook or gmail to login in the app.

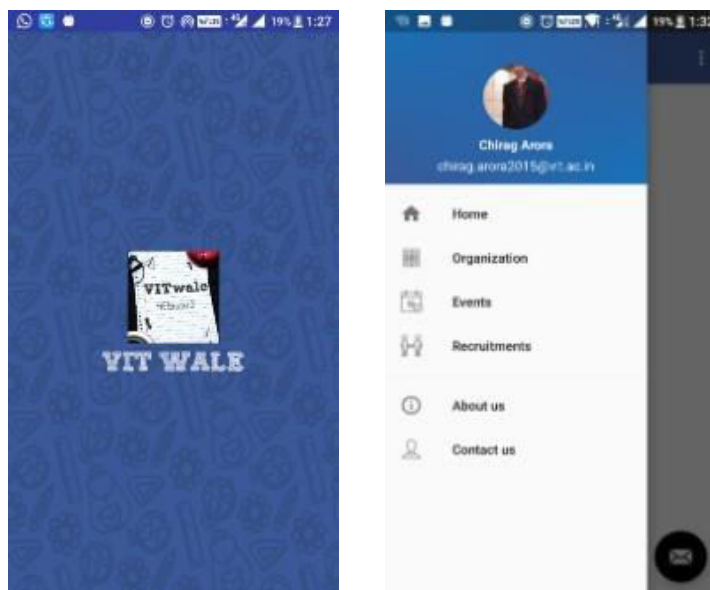
Contact us form: Users can contact or send feedback to us.

Device support: This app is supported by android mobile and tablets with version 4.4.0

### ACTIVITY DIAGRAM OF THE SYSTEM

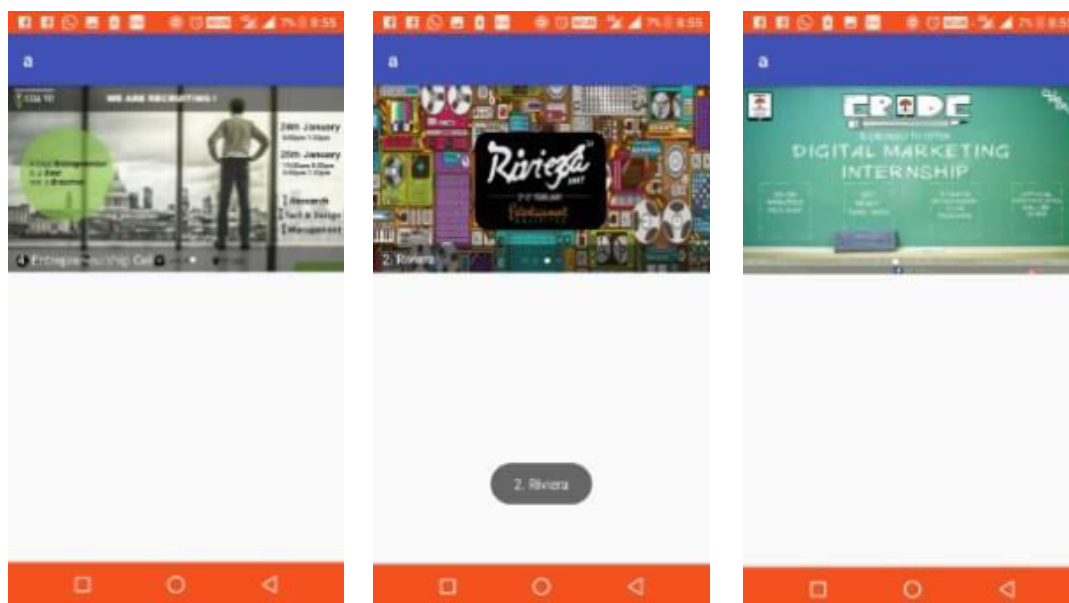


## 5. Implementation



The above images depicts the Splash Screen and the navigation drawer, from where user can access various other options like Organizations, Events, Recruitment, About us and Contacts.

### 5.1 SCREEN OBJECTS & ACTIONS



This intro slider will be used to preview the “What’s Trending in VIT” where the most useful events will be shown.

## 6. RESULTS

We have implemented the Application which provides all the information about the clubs, chapters, NGO of VIT University.

Students can view the events, Recruitments organized by various clubs, chapters and Ngo of VIT and register them accordingly. Push notification and Daily Events updates are sent to the user as per the modifications done. User gets a platform for getting information of clubs, chapters, NGO’s at one go , Their events, Recruitments information is



included in a very attractive way. This App is for android version 4.4.0 (kit-Kat) and above. Security: This app is unauthorized protected. User can use Facebook or Gmail to login in the app. This app is supported by android mobile and tablets with version 4.4.0 Very Minimal size of application has been built with the help of Cloud storage platform Firebase.

## **7. PROJECT CONCLUSION**

The VITWale app is composed of two main components: a client-side application which will run on Android handsets, and a server-side application which will support and interact with various client-side features. The system is designed to facilitate the process of updating VIT Students about various events and workshops

## **REFERENCES**

- [1] <https://www.ijsr.net/archive/v3i2/MDQwMjE0MDE=.pdf>
- [2] <http://research.ijcaonline.org/rtfem2016/number1/rtfem45109.pdf>
- [3] <https://dspace.mah.se/bitstream/handle/2043/10721/AndroidApplicatcionDevelopmen t.pdf?sequence=1>
- [4] <http://developer.android.com/guide/basics/whatisandroid.html>
- [5] [http://www.tutorialspoint.com/android/android\\_architect ure.html](http://www.tutorialspoint.com/android/android_architect ure.html)
- [6] <http://www.slideshare.net/VijayRastogi/ppt2-introandroidarchitecturecomponentsd6>