

**A**  
**Project Report**  
**On**  
**“Hotel Management System”**

Submitted in partial fulfillment of the requirements for the award of degree

**Bachelor of Computer Application-3<sup>rd</sup> Year**

From

Pt.Ravishankar Shukla University Raipur (C.G.)

Year: 2021-22



**Approved By:**  
**Dr.Devendra Chaphekar**  
(HOD Computer Science)

**Guided By:**  
**Neeraj Kumar Nage**  
Asst. Profesor

**Submitted by:**  
SUmeet Kumar sahu

Submitted to  
Seth Phoolchand Agrawal Smriti College Nawapara(Rajim)  
Pt.Ravishankar Shukla University Raipur (C.G.)



**SETH PHOOLCHAND AGRAWAL SMRITI COLLEGE**

**NAWAPARA**

**Pt.Ravishankar Shukla University,**

**Raipur (C.G.)**

**Dr. Devendra Chaphekar**

M.C.A., Mphil, Phd

HOD CS Department

web— [www.spcacollege.ac.in](http://www.spcacollege.ac.in)

Phone: 07701-234094

Date.....

**CERTIFICATE OF APPROVAL**

This is to certify that the project work entitled “**HybridApp Java**” is carried out by **SUmeet Kumar Sahu** a student of BCA-III YEAR at “**Seth Phoolchand Agrawal Smriti College Nawapara Rajim**” is hereby approved as a credible work in the discipline of Computer Science & Information Technology for the award of degree of **Bachelor of Computer Application** during the year 2021-22 from **Pt.Ravishankar Shukla University Raipur (C.G.)**

This project work has been carried out under my supervised.

**Dr.Devendra Chaphekar**  
(HOD Computer Science)



**SETH PHOOLCHAND AGRAWAL SMRITI COLLEGE**

**NAWAPARA**

**Pt.Ravishankar Shukla University,**

**Raipur (C.G.)**

website – [www.spcacollege.ac.in](http://www.spcacollege.ac.in)

Phone : 07701-234094

Date.....

**CERTIFICATE**

This is to certify that the project work entitled “**HybridApp Java**” at submitted to “**Seth Phoolchand Agrawal Smriti College Nawapara Rajim**” by **SUmeet Kumar sahu** is in partial fulfilment for the requirements relating to the nature and standard of the award of **Bachelor of Computer Application** degree by Pt.Ravishankar Shukla University Raipur (C.G.) for academic session 2021-22.

This project work has been carried out under my guidance.

**Mr. Neeraj Kumar Nage**  
(Asst. Professor)

## **CERTIFICATE OF EVALUATION**

This is to certify that the project work entitled “**HybridApp Java**” is carried out by **SUmeet Kumar sahu** a student of BCA-III at **SETH PHOOLCHAND AGRAWAL SMRITI COLLEGE NAWAPARA RAJIM (C.G.)**, after proper evaluation and examination, is hereby approved as a credible work in the discipline of Computer Science & Information Technology and is done in a satisfactory manner for its acceptance as a requisite for the award of degree of **Bachelor Of Computer Application** during the year 2021-2022 from **Pt. Ravishankar Shukla University, Raipur(C.G.)**.

**Internal Examiner**

**External Examiner**

## DECLARATION

This is to certify that the project report entitled “**HybridApp Java**” which is submitted by me in the partial fulfillment of the award of degree of **Bachelor In Computer Application (B.C.A.), Seth Phoolchand Agrawal Smriti College Nawapara Rajim (C.G.)**, Comprises the original work carried out by me.

I further declare that the work reported in this project has not been submitted and will not be submitted, either in part or in full for the the award of any other degree or diploma in this Institute or any other Institute or university.

Place :

**SUmeet Kumar Sahu**

Date :

## **ACKNOWLEDGEMENT**

Success is the manifestation of diligence, perseverance, inspiration, motivation and innovation. The completion of any interdisciplinary project depends on co-operation, co-ordination and combined efforts of several sources of knowledge, energy and time. Hence, I approach this matter of acknowledgement through these lines trying my best to give full credit wherever it is due.

I take immense pleasure in thanking HOD of Computer Department for having permitted me to carry out this project work.

I wish to express my deep sense of gratitude to my Guide, Mr. Neeraj Kumar Nage (Asst. Professor), who had been a source of inspiration and for his timely guidance and useful suggestions, which helped me in completing the project work, in time.

Words are inadequate in offering my thanks to the teachers, Project Trainees and Project Assistants, for their encouragement and cooperation in carrying out the project work.

Finally, yet importantly, I would like to express my heartfelt thanks to my beloved parents for their blessings, my friends/classmates for their help and wishes for the successful completion of this project and as always, nothing in my life would be possible without God, Thank You!

## **PREFACE**

Nowadays Smartphones has become an integral part of the human being. From 6-year-old child to 60-year-old elder citizen, everyone uses smartphones for various purposes.

The smartphone can be used in many ways. Students can use it to learn, adults can use it to earn, and old citizens can use it for entertainment.

My project “HybridApp Java” which is an android app, is multi-purpose software that deals with various usage mentioned above.

SUmeet Kumar Sahu

# CONTENTS

<b>1. INTRODUCTION</b>	<b>7-10</b>
• PURPOSE OF THE PROJECT	8
• PROBLEM IN THE EXISTING SYSTEM	9
• SOLUTION TO THIS PROBLEM	9
• SCOPE OF THE PROJECT	10
<b>2. SYSTEM ANALYSIS</b>	<b>11-13</b>
• STUDY OF THE SYSTEM	12
• HARDWARE AND SOFTWARE SPECIFICATIONS	13
<b>3. SOFTWARE REQUIREMENT SPECIFICATION</b>	<b>14-15</b>
• FUNCTIONAL REQUIREMENTS	15
• PERFORMANCE REQUIREMENTS	15
<b>4. TECHNOLOGY DESCRIPTION</b>	<b>16-23</b>
• Android Studio (Xml & Java) [Front End]	17-23
• Firebase, Admob, Github, Onesignal [Back End]	23
<b>5. SYSTEM DESIGN</b>	<b>24-32</b>
• ER DIAGRAM	25
• DATA FLOW DIAGRAM	26-27
• WORK FLOW DIAGRAM	28
• FLOW CHART	29
• SYSTEM MODEL [WATERFALL MODEL]	30-31
<b>6. SCREENS</b>	<b>32-36</b>



<b>7. PROJECT TESTING</b>	
• UNIT TEST	
• INTEGRATION TEST	
• WHITE BOX	
• BLACK BOX	
<b>8. FUTURE IMPROVEMENT</b>	
<b>9. CONCLUSION</b>	37
<b>10. BIBLIOGRAPHY</b>	38

## **Abstract**

The smartphone can be used in many ways. Students can use it to learn, adults can use it to earn, and old citizens can use it for entertainment. Nowadays Smartphones has become an integral part of the human being. From 6-year-old child to 60-year-old elder citizen, everyone uses smartphones for various purposes. My project “HybridApp Java” which is an android app, is multi-purpose software that deals with various usage mentioned above.

Users can browse the web with a privacy-oriented search engine, can create a one-time To-do list, can know about the weather. They can play 100s of online games and enjoy watching memes.

I have used Android Studio by google to create my app. Java and XML have been used to create logic and UI / UX [Front End]. And Firebase(database), Admob(ads), Github(hosting web techs), and Onesignal (Push notifications) as [Back End].

# INTRODUCTION

## **PURPOSE OF PROJECT**

My project “HybridApp Java” which is an android app, is multi-purpose software that deals with various day-to-day needs of common people from age 6 to 60. Users can browse the web with a privacy-oriented search engine, can create a one-time To-do list, can know about the weather. They can play 100s of online games and enjoy watching memes.

My app brings a lot of tools or mediums of information or entertainment in one place.

## **PROBLEM IN THE EXISTING SYSTEM**

- The user needs to have multiple apps.
- Experience is not that Fluid.
- Frustrating in nature.
- Time-consuming while hopping.
- Resource-hungry.

## **SOLUTION OF THESE PROBLEMS**

- Multiple apps can be replaced with one with the functionality of all.
- Experience can be Fluid.
- Users will not Frustrat if will experience fluidity.
- Hopping will be seamless if it's being done inside the app.
- Resources can be saved as only one app will consume them.

## **SCOPE OF THE PROJECT**

### **Benefits to the Youngers:**

- Can play games from the library of more than 100 games.
- Can watch Memes.
- Browse the web with safety.

### **Benefits to the Elders:**

- Can play games from the library of more than 100 games.
- Can watch Memes.
- Browse the web with privacy.
- Can be more productive with the to-do list.
- Can know about the weather.

# SYSTEM ANALYSIS

## STUDY OF THE SYSTEM

Android Apps are Softwares that can be used for various purposes from texting and calling to image manipulation and video editing. And Information and Entertainment industry is heavily integrated with it on which my app works.

### Need and Objective of the System:

Today because of pandemics doing outdoor activities has become very dangerous. For needs like entertainment and information relating to digital mediums like smartphones is the safer and better option.

## H/W & S/W SPECIFICATION

Title: *HybridApp Java*

### Software Requirements:

Language used:	Java, XML .
Platform:	Operating System (Windows 10).
Software:	Android Studio (android sdk).
Front end:	Java & XML.
Back end:	Firebase, Admob, Github, Onesignal.

### Hardware Requirements:

Processor:	Arm processor 1.0GH or above
RAM:	2.00 GB
Storage:	Less then 24 Mb
Keyboard:	Any digital or physical.
Display:	Any touch screen display.

# **SOFTWARE REQUIREMENT SPECIFICATION**



The models such as DFDs, data dictionary, objects diagram etc. generally focus on the problem structure, not on the external behavior such as user interface, performance constraints, design constraints that contain the clear specification of the functional, performance, design and interface requirements of the proposed system.

## **FUNCTIONAL REQUIREMENTS**

This requirement is typically expressed in relational and state oriented notations that specify relationship among input, action, and output. These requirements should specify the given input, validation and corresponding outputs of operations, equation, or logical operations that must be used to transformed inputs into outputs. In addition, some abnormal inputs, system behavior for invalid input must be specified.

Here we use the validation on the field of Computer Code where we input only numbers, we can't use characters. We use also the range of the numbers for any users/admin/or faculty. This is the validation which is the most important part of the functional requirements. Here the user interface is also the important part for that system. We design the interface using swing java is user friendly and easy to handle. Illiterate person can also be used this system.

## **PERFORMANCE REQUIREMENTS**

There are two types of performance requirements: static and dynamic. Static requirements are required number of terminal to be supported, number of simultaneous users to be supported, the number of the files system has to process and their sizes etc.

The Dynamic requirements include execution time behavior of the system such as throughout, response time; execution time for the compilation of the operation acceptable ranges of different performance should be specified

Our project is not a big size so that is easy to install, less response time, and we can use easily and period of time specified. And it is the platform independent and there is performance is batter. This s/w use only storage of disk is max 24MB and this will be using very low memory of the system.

# TECHNOLOGY DESCRIPTION

## JAVA Xml [FRONT END]

Java supports the writing of many different kinds of executables: applications, applets, and servlets. And java is an object oriented language where we create our window application. Java is the most popular programming language. This language is used as a front end that means where we write our all coadings. Java is plateform independent, robust, easy to use, multithreaded, distributed, and safe and secure.

### PACKAGES:

Packages are java's way of grouping a variety of classes and/or interfaces together. The grouping is done according to functionally. Packages act as "containers" for classs.

### Java Packages:

```
1 package com.su.hybridappjava;
2
3 import static android.content.ContentValues.TAG;
4 import androidx.annotation.NonNull;
5 import androidx.appcompat.app.AppCompatActivity;
6 import android.content.Intent;
7 import android.os.Bundle;
8 import android.util.Log;
9 import android.view.View;
10 import android.webkit.WebSettings;
11 import android.webkit.WebView;
12 import android.webkit.WebViewClient;
13 import android.widget.Button;
14 import com.google.android.gms.ads.AdRequest;
15 import com.google.android.gms.ads.LoadAdError;
16 import com.onesignal.OneSignal;
17 import com.google.android.gms.ads.MobileAds;
18 import com.google.android.gms.ads.initialization.InitializationStatus;
19 import com.google.android.gms.ads.initialization.OnInitializationCompleteListener;
20 import com.google.android.gms.ads.interstitial.InterstitialAd;
21 import com.google.android.gms.ads.interstitial.InterstitialAdLoadCallback;
22 import com.google.android.gms.ads.AdRequest;
23 import com.google.android.gms.ads.AdView;
```

## INTERFACES:

XML: XML (Extensible Markup Language) is a markup language similar to HTML, but without predefined tags to use. Instead, you define your own tags designed specifically for your needs. This is a powerful way to store data in a format that can be stored, searched, and shared.

1. **`com.google.android.gms.ads.AdView`**

Used in order to display a banner ad from Admob. Can have various size and can be placed as per developer's wish.

2. **`WebView`**

Used in order to Display Web Components of the app. In my case I load web pages that I have hosted on my github.

3. **`com.google.android.material.button.MaterialButtonToggleGroup`**

It allows me to group all of the buttons in a ribbon shaped widget. Can be placed as per developer's wish. And helps us to implement material icons and themes easily.

4. **`Button`**

Used to create Buttons. Can be used to take user inputs.

5. **`androidx.constraintlayout.widget.ConstraintLayout`**

With the help of constraintlayout we are able to make more seamless and pleasing UI. It helps us to specify the widget's place and let it stick to it with respect to other widgets attached with it.

## Firestore, Admob, Github, Onesignal [BACK END]

### 1. Firestore

**Firestore** is a Backend-as-a-Service (Baas). It provides developers with a variety of tools and services to help them develop quality apps, grow their user base, and earn profit. It is built on Google's infrastructure.

Firestore is categorized as a NoSQL database program, which stores data in JSON-like documents.

## 2. Admob

Google AdMob makes it easy for developers to earn money from their mobile apps with high-quality ads. AdMob maximizes the value of every impression by combining global advertiser demand, innovative ad formats, and advanced app monetization technology.

## 3. Github

Git is a **specific open-source version control system** created by Linus Torvalds in 2005. Specifically, Git is a **distributed version control system**, which means that the entire codebase and history is available on every developer's computer, which allows for easy branching and merging. According to a Stack Overflow developer survey, over 87% of developers use Git.

Although I used it for hosting my web-components ;-p.

## 4. Onesignal

OneSignal is a service that enables push notifications, abstracting details such as the platform the device is running on. With the OneSignal plugin, OutSystems applications can send and receive push notifications.

# **SYSTEM DESIGN**

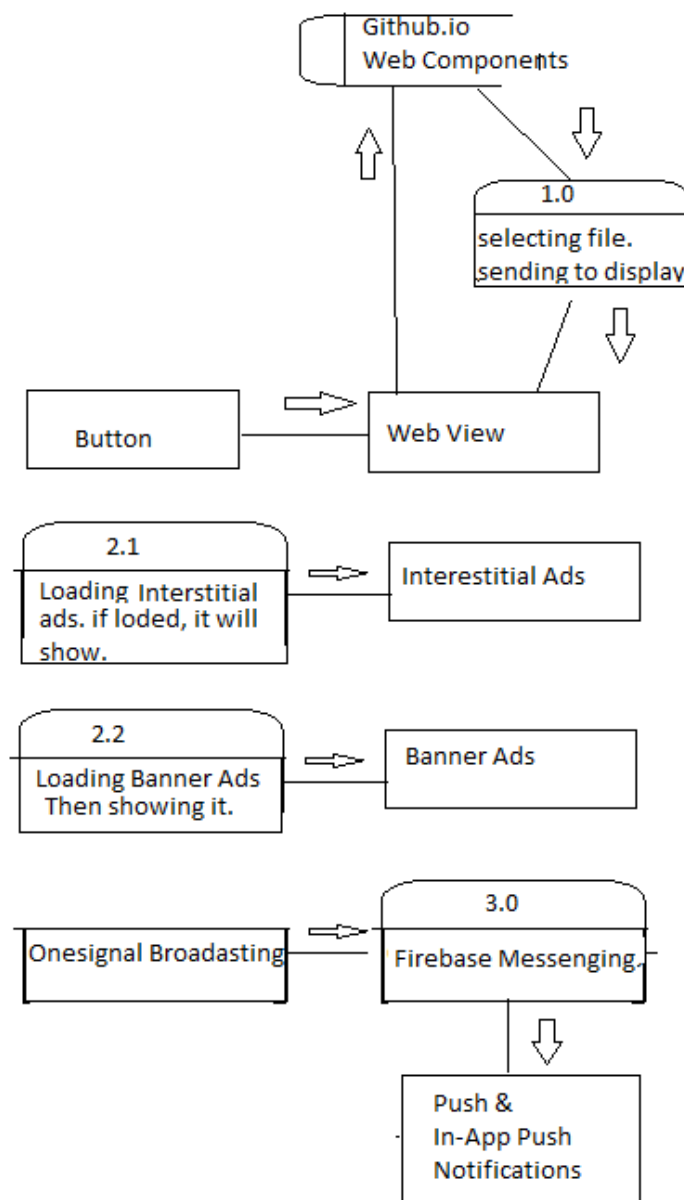
## ER-DIAGRAM

We can express the overall logical structure of a database graphically with an E-R diagram.

Its components are:

- Rectangles representing entity sets.
- Ellipses representing attributes.
- Diamonds representing relationship sets.
- Lines linking attribute to entity sets and entity sets to relationship sets.

In the text, lines may be directed (have an arrow on the end) to signify mapping cardinalities for relationship sets.



### Entity Relationship Model for “HybridApp Java”



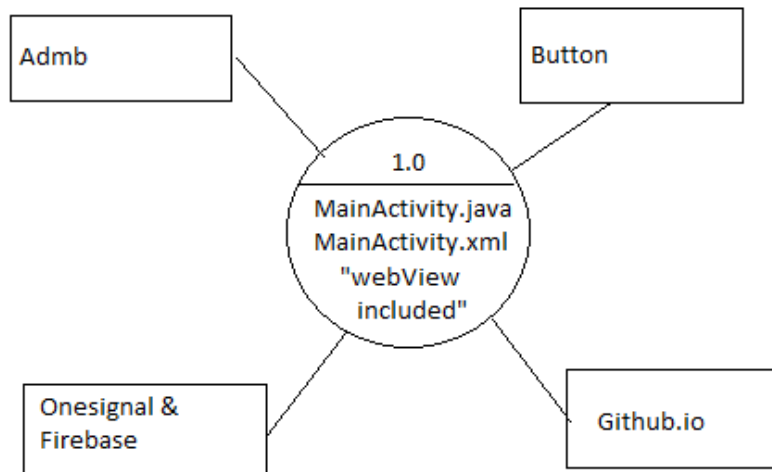
## DATA FLOW DIAGRAM

A data flow diagram is a graphical tool used to describe and analysis the movement of data through a system-manual or automated including the process, stores of data and the delay in the system. They are central tools and the basis from which other components are developed. It depicts the transformation of data from input to output through and the interactive between the processes.

Transformation data from input to output through process describes logically and independently of physical components ids called DFD. The physical DFD and workstation DFD are excellent mechanism for communicating with the customer during requirements analysis and are widely use for representing of external and top-level internal design specification.

Widely used for representing of external and top-level internal design specification.

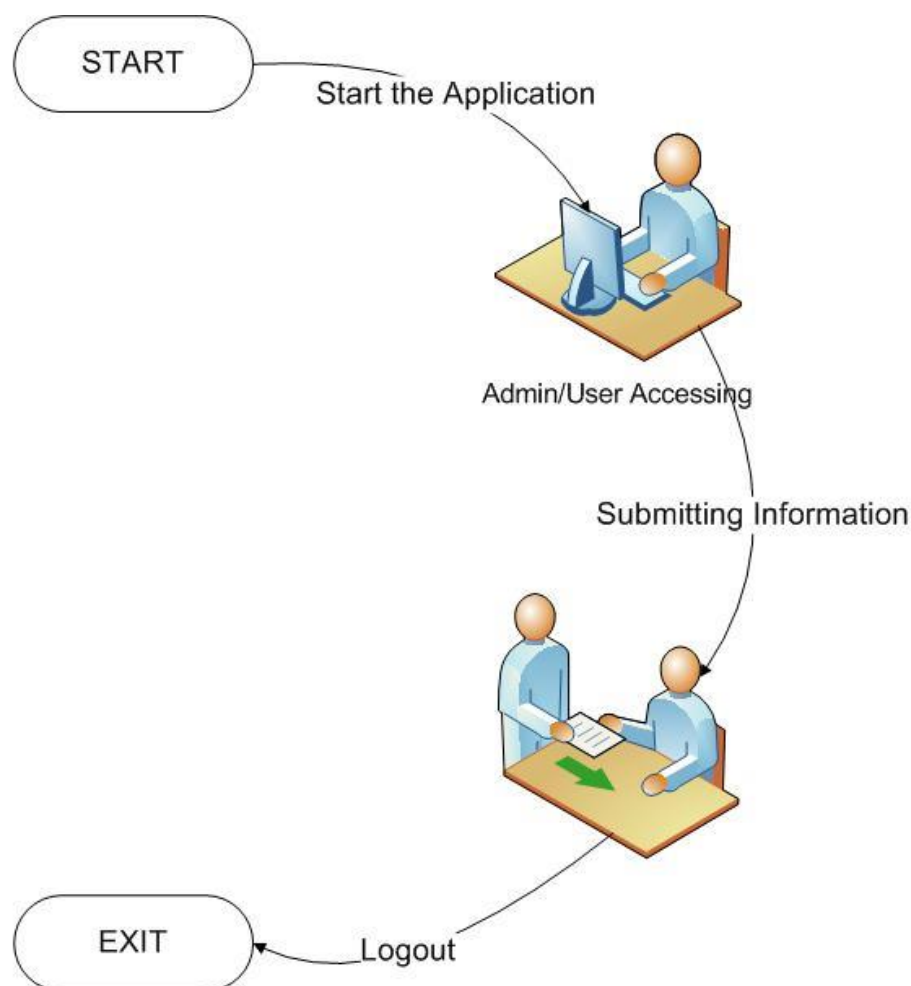
A DFD is also known as bubble chart has the purpose of clarifying system requirements and identifying major transformation that will become joined by the lines. The bubble represents data transformation and line represents data flow in the system.



## DATA FLOW OF “HOTEL MANAGEMENT SYSTEM”

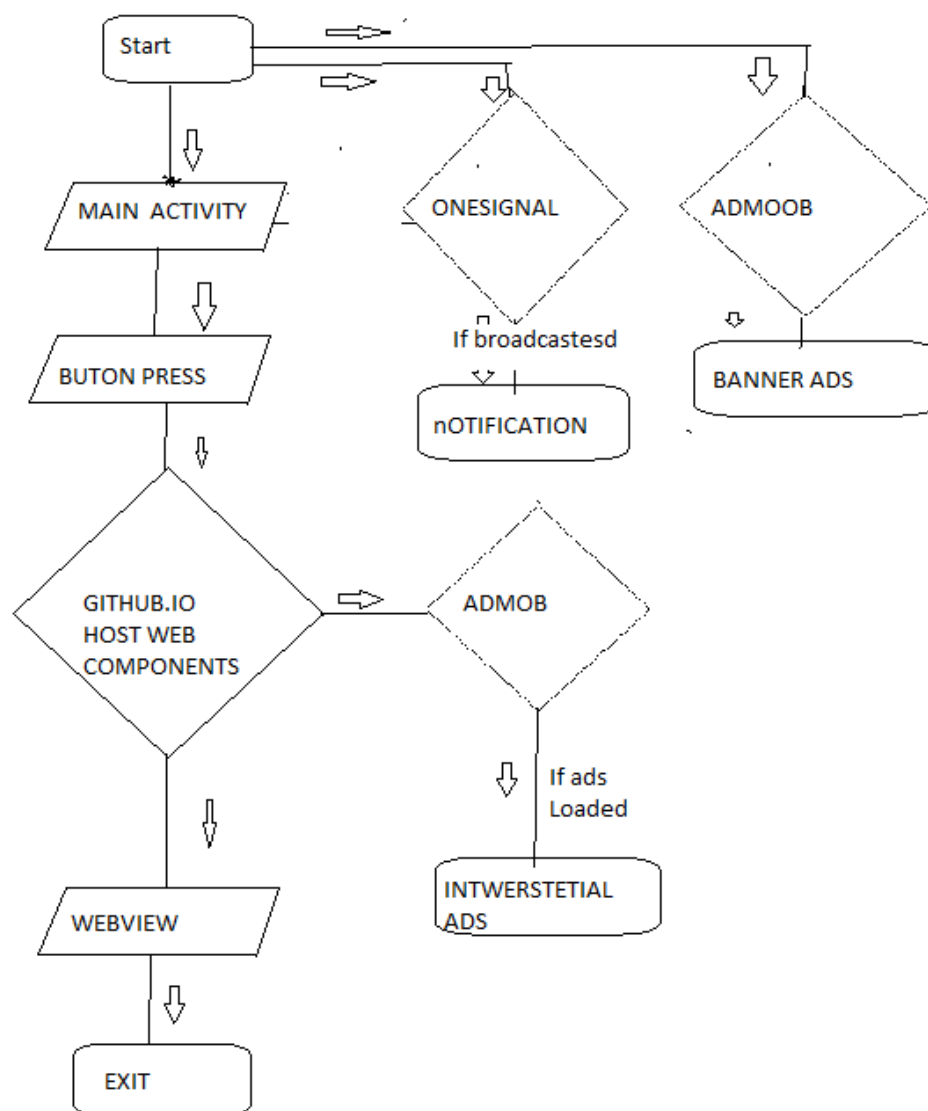
## WORK FLOW

The workflow represents the transferring of data, documents and tasks during the work. Often it is not easy to trace the path of a concrete task or a document. To make easier the study and analysis of working processes and for presenting them in a simple visual manner workflow diagrams are used. With the help of such diagram it is possible to see the path of the task in a workflow, the person who is responsible for its execution on each stage, which documents the task is accompanied by and which resources it needs. Workflow diagram of our system as follows:



## FLOW CHART

The Flow chart represents the transferring of data, documents and tasks during the work. Often it is not easy to trace the path of a concrete task or a document. To make easier the study and analysis or working processes and for presenting them in a simple visual manner workflow diagrams are used. With the help of such diagram it is possible to see the path of the task in flow, the person who is responsible for its execution on each stage, which documents the task is accompanied by and which resources it needs. Such diagrams as follows:



## SYSTEM MODEL [WATERFALL MODEL]

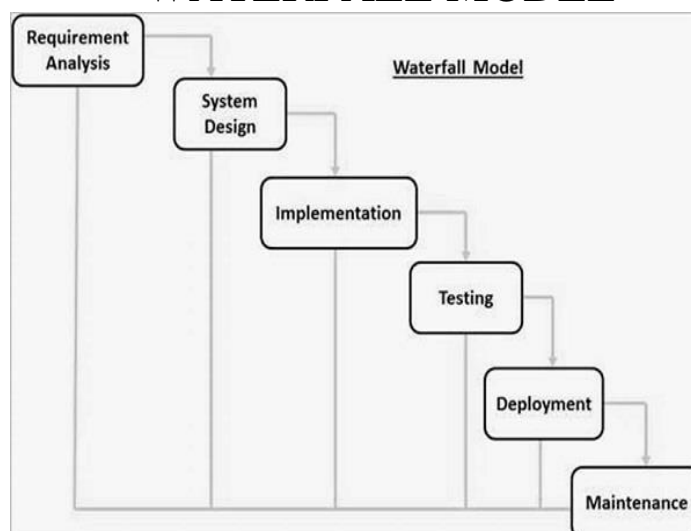
There are various software engineering model, which are used for specialized project such as Waterfall Model, Prototyping Model, Evolutionary Model, Incremental Model, Spiral Model, RAD Model so on.

But waterfall model is the simplest model in model group and very impassive, therefore we are using the Waterfall model to develop project.

Waterfall Model states that the phase is organized in a linear order. There are various variation of the waterfall model depending on the flow of activities and the flow of controls between them. In a typical model, the sequence of activities performed in a software development project is : requirement analysis, project planning, system design, detailed design, coding and unit testing, system integration and testing.

Linear ordering of activities has some important consequence, first to clearly identify the end of the beginning of the next; some certification mechanism has to be employed at the end of each phase. This is usually done by some verification and validation means that will ensure that the output of a phase is consistent with its input and that the output of the phase is consistent with the overall requirement of the system.

### WATERFALL MODEL



## **Modules**

- ❖ Web View Module- We can display the web components and pages.
- ❖ Version control and hosting Module- We can host our main Logical web components on git so that we can edit it as per our need without editing the android app.
- ❖ Admob ads Module-We can display banner and interstitial ads and track analytics with the help of admob dashboard.
- ❖ Notification Module -We can send push and in-app push notification with onesignal dashboard to Make announcements or increase user interaction.
- ❖ Menu Module-We can link other activities which may contain privacy policy, about us etc. together, it will improve User Experience UX.

## **TESTING**

### **1. UNIT TESTING:-**

Unit Testing is normally considered as an adjunct to the coding steps. After source level has been developed, reviewed, and verified for correct syntax. Unit testing begins. A review design information provides guidance for establishing test cases that are likely to uncover errors in each of the categories.

- 2. INTRIGATION TESTING :-** Integration Testing is a systematic way of technique for constructing the programmed structure while conducting tests to uncover errors associated with interfacing. The objective is to take unit tested modules and build of programmed structure that has been dictated in the design.

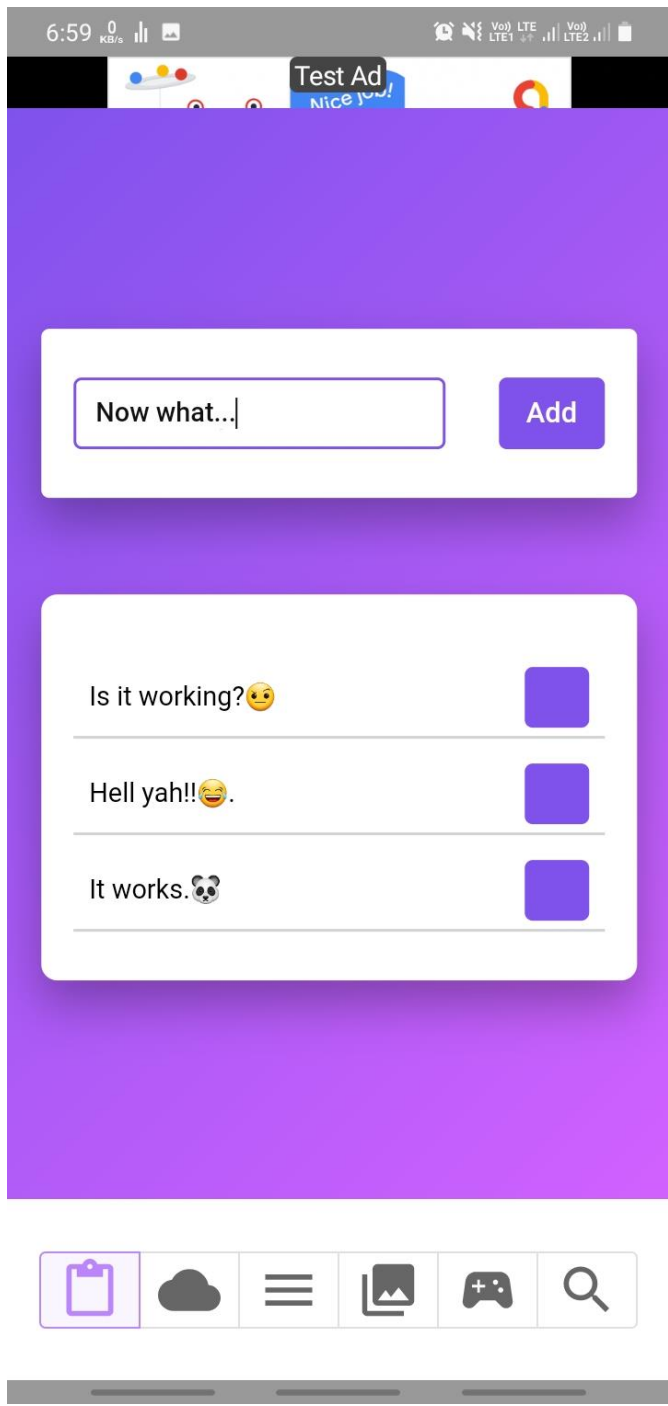
**White Box Testing:** - In this testing technique the internal structure of s/w component is tested. White box testing is also known as glass box testing. It is a test case, design method that uses the control structure of the procedural design test cases.

**Black Box Testing:** - In black box testing, the structure of the program is not considered. Test case is decided on the basis of requirement or specification of the program or modeling and the internals of the modules or the program are not considered for selection of cases.

# **Input & Output Activities**

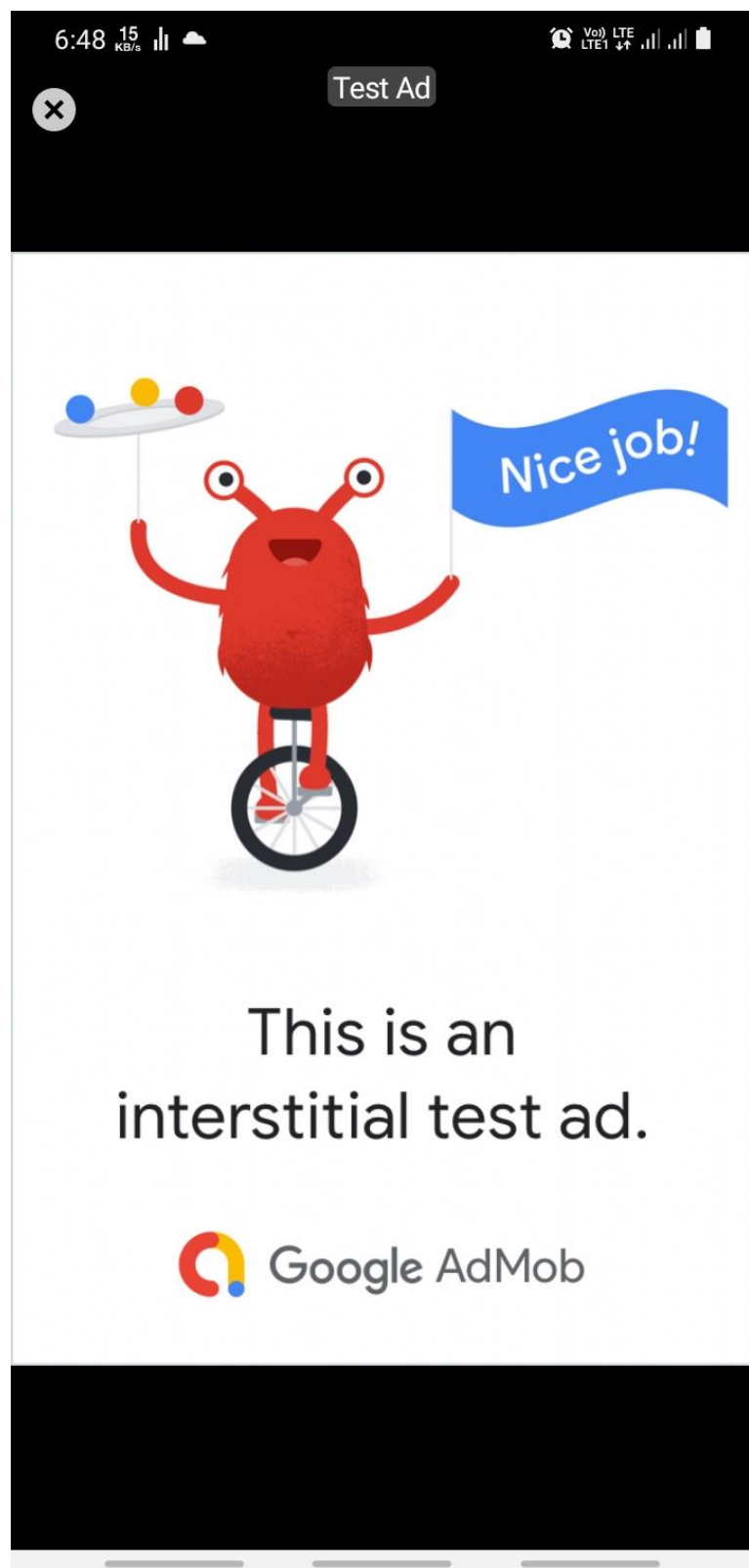
## User Manual

### To-Do Activity:-





Interstitial ads:-



## Weather Activity:-

6:55 3 KB/s

VoLTE LTE

Test Ad  
Nice You!

# Get The Weather For a Location

Enter Your Location

Submit







### Tokyo

Highs of 286.87. Lows of 280.74

In Kelvin

Weather conditions are described as: few clouds

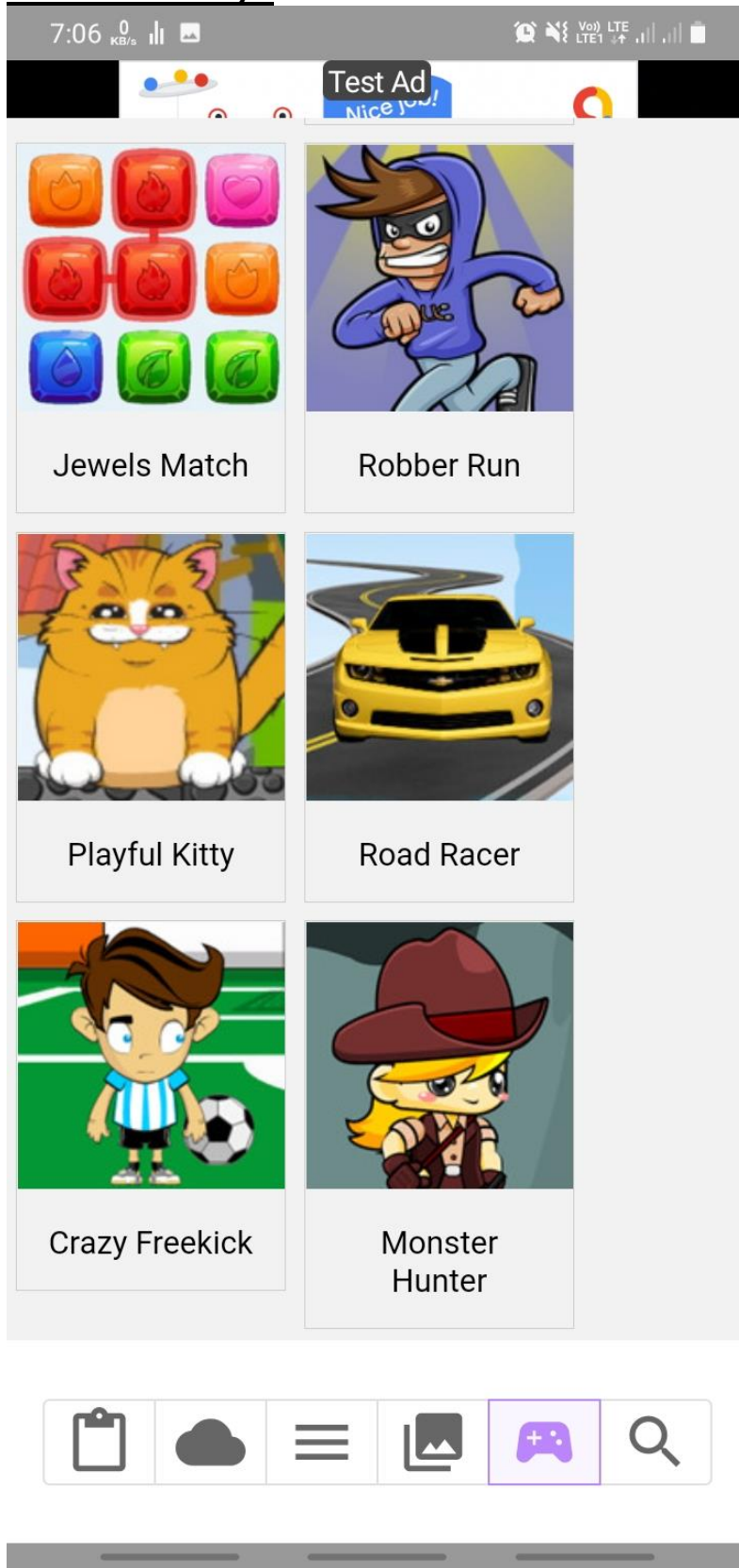
HybridAppJava Weather.js ©



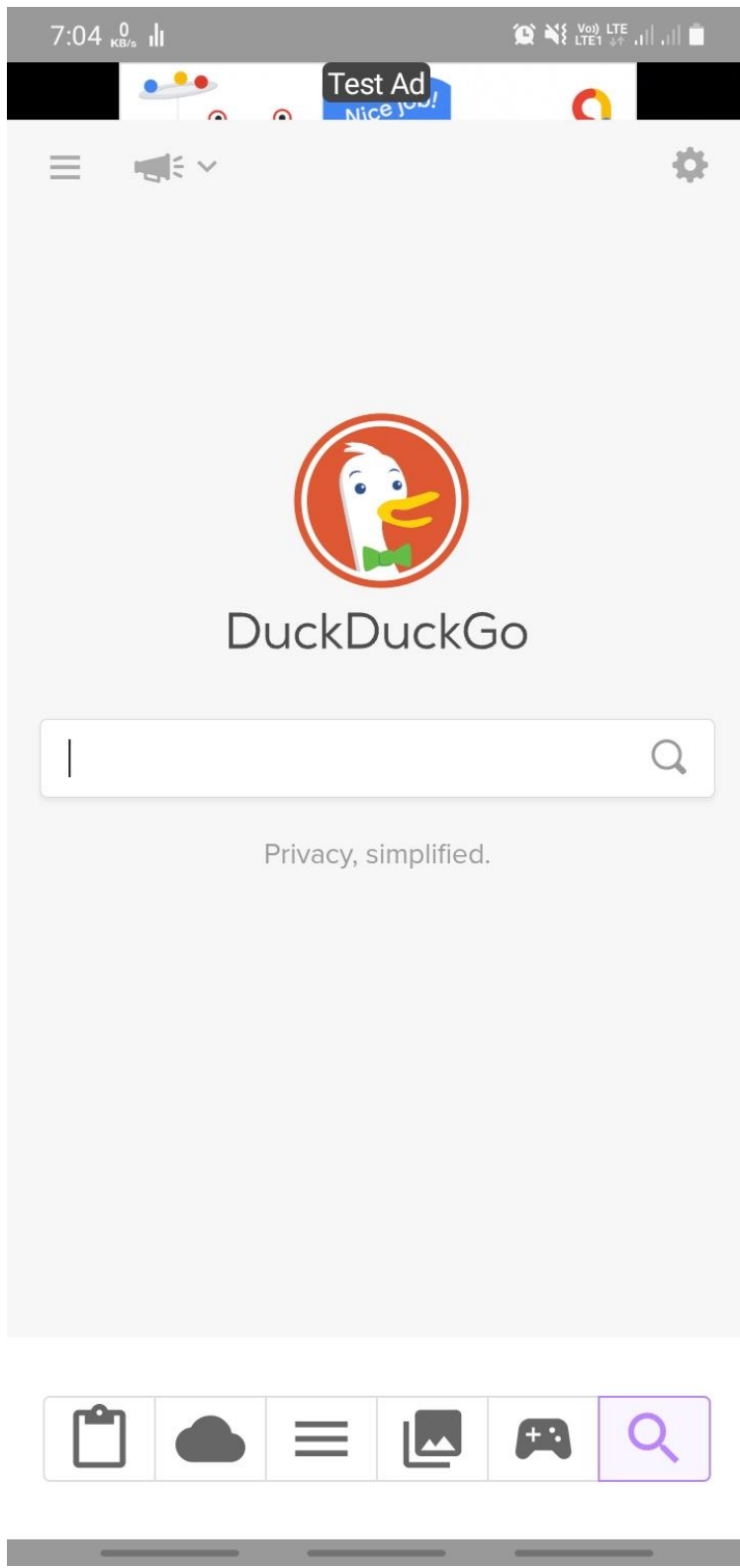
## Memes Activity:-



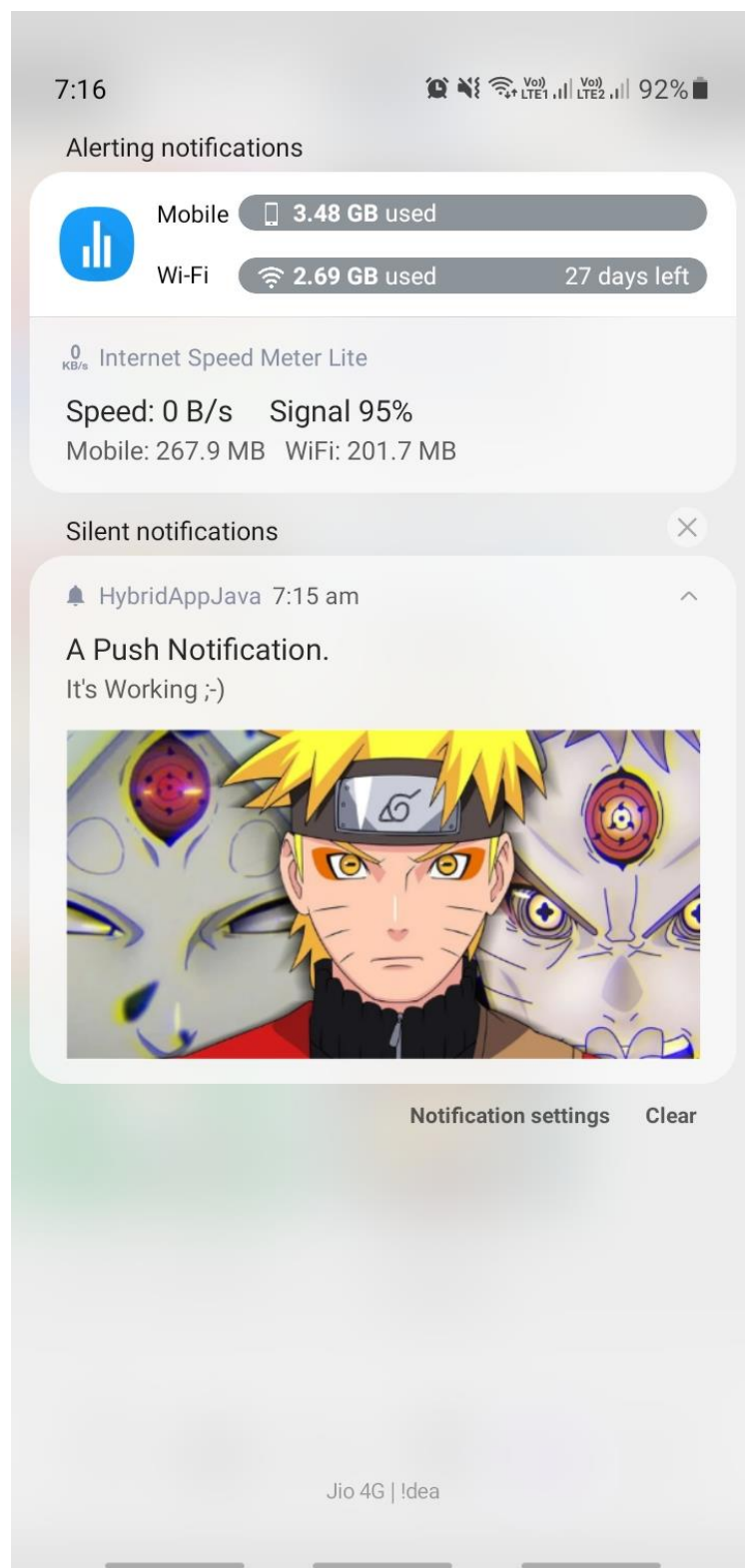
## Games Activity:-



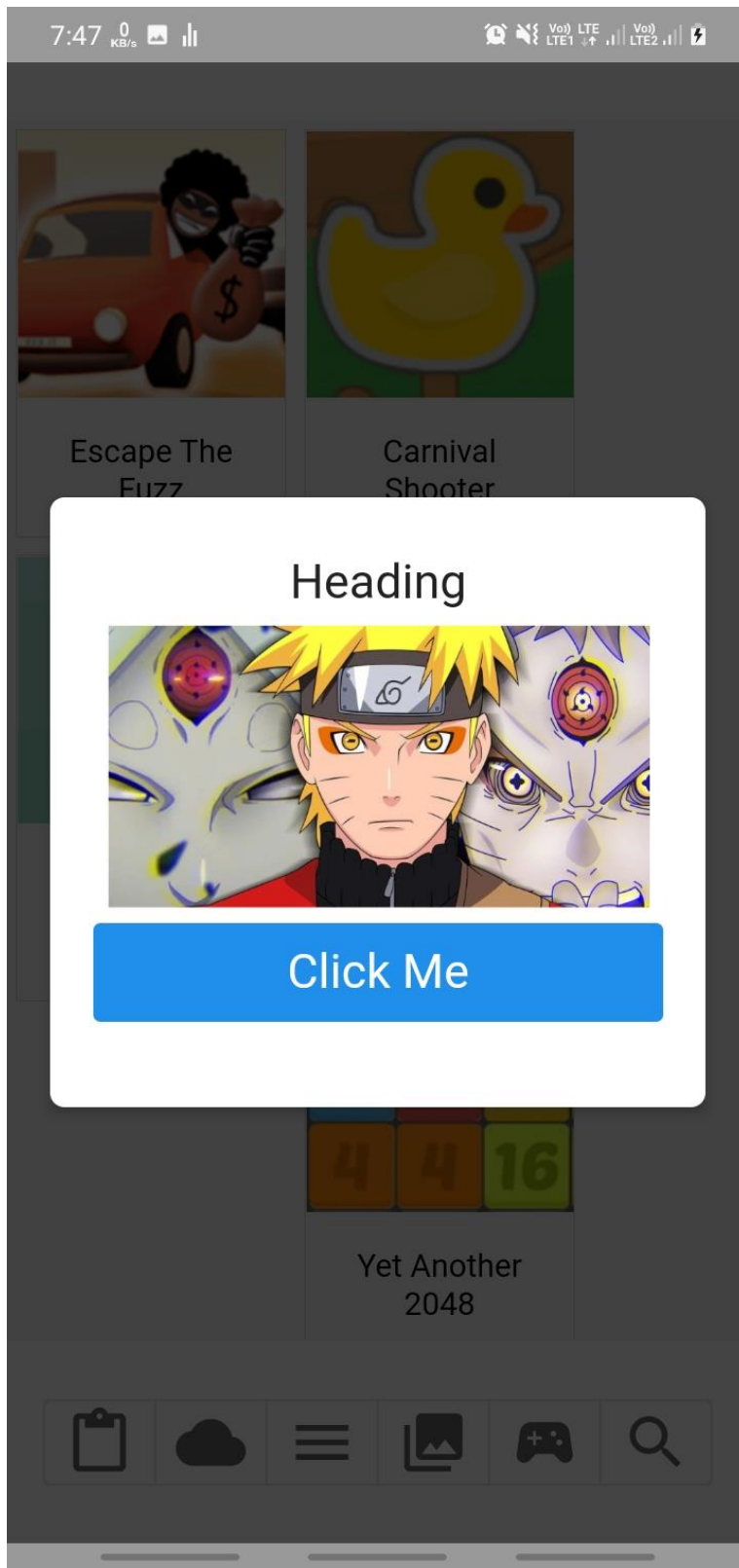
## **Browser Activity:-**



## Push Notification:-



## In-App Push Notification:-



## **CONCLUSION**

**The system's capability is to keep track of all the on-line information in its main feature, which helps the management to know the current position of the organization activities by just glancing through system, generated details.**

**The system has been developed considering every single quality factor. Due to this reason the system is highly secure from the crash down problem. Moreover, the system is highly reliable and due to the security and integrity features, provides for the system, unauthorized users cannot access the system.**

### **SCOPE FOR FUTURE WORK**

This system is ever ready to attend the following needs of future:

- Interaction with external software.
- Cross platform functionality.
- Facility to send any report by E-mail.
- Any other feature that client needs.



## **BIBLIOGRAPHY**

### **Internet Research:**

- [Google.com](https://www.google.com)
- [Youtube.com](https://www.youtube.com)
- [Developer.android.com/docs](https://developer.android.com/docs)
- [Stackoverflow.com](https://stackoverflow.com)