MINI PROJECT

(2020-21)

“Women Security App”

Project Report

Institute of Engineering & Technology

Submitted By -

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Declaration

I/we hereby declare that the work which is being presented in the Bachelor of technology. Project **"Women Safety Idea"**, in partial fulfillment of the requirements for the award of the ***Bachelor of Technology*** in Computer Science and Engineering and submitted to the Department of Computer Engineering and Applications of GLA University, Mathura, is an authentic record of my/our own work carried under the supervision of **Mr. Akash Chodhary, Technical Trainer, Dept. of CEA,GLA University.**

The contents of this project report, in full or in parts, have not been submitted to any other Institute or University for the award of any degree.

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Android Application -bSAFE

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Certificate

This is to certify that the project entitled "Women Safety App", carried out in Mini Project – I Lab, is a bonafide work by Priya Maheshwari and is submitted in partial fulfillment of the requirements for the award of the degree Bachelor of Technology (Computer Science & Engineering).

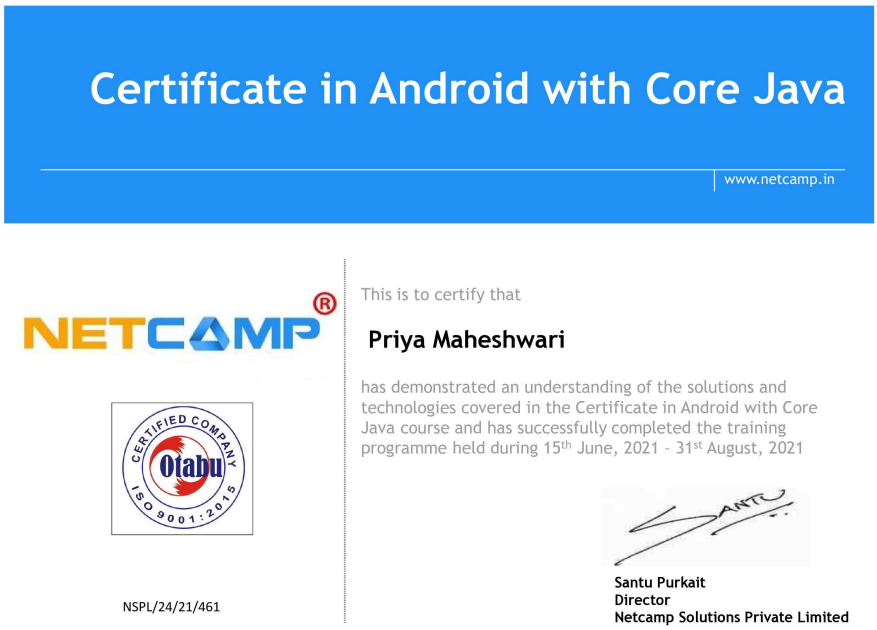
Signature of Supervisor:

Name of Supervisor: Mr.Akash Chodhary

Date:

Training Certificates

- **Priya Maheshwari**



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ACKNOWLEDGEMENT

Presenting the ascribed project paper report in this very simple and official form, we would like to place my deep gratitude to GLA University for providing us the instructor Mr Mandeep Singh, our technical trainer and supervisor.

He has been helping us since Day 1 in this project. He provided us with the roadmap, the basic guidelines explaining on how to work on the project. He has been conducting regular meeting to check the progress of the project and providing us with the resources related to the project. Without his help, we wouldn't have been able to complete this project.

And at last but not the least we would like to thank our dear parents for helping us to grab this opportunity to get trained and also my colleagues who helped me find resources during the training.

Thanking You

Sign: *PriyaMaheshwari*
Name of Candidate: Priya Maheshwari
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ABSTRACT

In this project, I am creating an android application, basically a Women Safety App which I have named bSAFE. This is user-friendly application that can be accessed by anyone who has installed it in their smart phones.
Our intention is to provide you with fastest and simplest way to contact your nearest help. In this system
user needs to feed three contact numbers, in case of emergency on moving the phone up and down thrice,
the system sends SMS and calls on one of the numbers feeded into the system with the location.
This app will basically help women in any suspicious situation any time to feel them secure. This will make them feel that there is someone with her if they need 24X7, they can easily inform their closed ones if they feel anyting bad happening.

Android App ecosystem is diverse and is changing people's life all over the world. Android users are expected to increase because of the advance changes of the operating system and the way it deals with issues and compatibility with other mobile devices. Furthermore designing solutions for the problems that we may face in future is essential. Like this application definitely stands the need of women for their safety.

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CHAPTER-1

INTRODUCTION

1.1 CONTEXT

This Android Application “bSAFE” has been submitted in partial fulfilment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering at GLA University, Mathura supervised by Mr.Mandeep Singh. This project has been completed approximately three months and has been executed in modules, meetings have been organised to check the progress of the work and for instructions and guidelines.

1.2 MOTIVATION

Women’s safety is a big concern which has been the most important topic till date.
Women safety matters a lot whether at home, outside the home or working place.
Few crimes against ladies particularly rape cases were terribly dread and fearful.
Most of the women of various ages, till this day are being subjected to violence, domestic abuse, and rape.

As ladies ought to travel late night generally, it’s necessary to remain alert and safe. Although the government is taking necessary measures for their safety, still, there are free safety apps for women that can help them to stay safe. Most of the females these days carry their smartphone with them, so it is necessary to have at least one the personal safety apps installed. Such a security app for ladies will definitely facilitate in a way or the opposite.

1.3 OBJECTIVE

The main objective of this application is to create a Women Safety App named “bSAFE” to provide women’s security in any unwanted situation. This will send emergency alert to their closed once and share their location to close ones.

This app also includes some tips to be followed in any unwanted situation to avoid them. And also it has some self defence short clips.

1.4 EXISTING SYSTEM

In the present scenario, we are dealing with manually click on the button after for SOS alert. There is no such feature in the present app that will send SMS alert to your closed once by just shaking the phone 2-3 times ups and down.

In some serious situation there can be the case that we don't have time to open the phone and do it manually. In such situation, we can do it automatically.

Here are the images of two existing women safety app:


RAKSHA
Women Safety App
SOS
100
Call Police
Message Family
84% 11:30 a.m
POLICE
Nearby Police
Staions
112
Emergency
Numbers
ChatBot
SOS
Alert

1.5 SOURCES

The source of our project (including all the project work, documentations and presentations) will is available at the following link :

https://github.com/PriyaMaheshwari26/Women-s-Safety-App-MiniProject-

CHAPTER -2

SOFTWARE REQUIREMENT ANALYSIS

2.1NEED OF WOMEN'S SAFETY IN DAILY LIFE

As we all know women is equally important to develop a family, a house, as well as a country, so their security is as important as any other serious problem to be solved. But these days as we see everyday in newspaper headlines rape, molestation other women have to face.
There is a huge increament in the crime rate against women. We have to take some serious steps towards this. We have to think about women's security. They should have some safety measurement with them all time in day as well as night.

Women safety matters a lot whether at home, outside the home or working place. Few crimes against ladies particularly rape cases were terribly dread and fearful. Most of the women of various ages, till this day are being subjected to violence, domestic abuse, and rape.

2.2 PROBLEM STATEMENT

Women's safety is a big concern which has been the most important topic till date. Women safety matters a lot whether at home, outside the home or working place. Few crimes against ladies particularly rape cases were terribly dread and fearful. Most of the women of various ages, till this day are being subjected to violence, domestic abuse, and rape.
As ladies ought to travel late night generally, it's necessary to remain alert and safe. Although the government is taking necessary measures for their safety, still, there are free safety apps for women that can help them to stay safe. Most of the females these days carry their smartphone with them, so it is necessary to have at least one the personal safety apps installed. Such a security app for ladies will

definitely facilitate in a way or the opposite.

Android Application - bSAFE

2.3 HARDWARE AND SOFTWARE REQUIREMENTS

Hardware Requirement

- Processor :intel i5
- Operating System :Any Operating System
- RAM : 8 GB (or higher)
- Hard disk : 256GB

Software Requirement

Software used: Android Studio

- Language used : Java, XML
- Database: sqLite
- User Interface Design : Android Application

2.4 MODULES AND FUNCTIONALITIES

- **Splash Screen**: The first screen with which the user interacts will be this screen containing the logo and the app name .This will disappear within 5 seconds after the app is displayed.

- **Login Page**: This page is for those users who have already registered themselves on the app and have a username and a password. There is also a way on this page for the new users to register themselves which will take them to the registration page.

- **Registration Page:** This is page is solely designed for the new users of the app who are willing to register themselves. This page takes input of the various details of the user and stores it in the database, later helping the user to login into the account with credentials they have provided.

  Forget Password Page: This page comes into picture when one of the user forgets the login credentials. In this case this page asks for the email-id with which the user has already registered. The app will check if there is any entry in its database with the id and if there a mail will be sent to the same id for recovering the credentials and notification will be given to the user.

- **Navigation Drawer**: This is the most important part of the application that provides interactivity within the app as it connects the various activities together like it is a side bar on which the profile, the dashboard, the favourites section, the FAQ section ,the About page of the page are linked and on clicking on each you can visit the pages.

- **Dashboard Page:** This is the page displayed for every user after entering the app successfully. Here user can see what are the features of the app.

- **Instructions**:In this, user can read instructions how to use the app. And how this app can help them and what this app can do.

- **Verify:** Initially the page is empty, but when the users save the contact of their closed ones, whom they want to inform in any suspicious situation. They can save their contact details here.

- **Profile**: This page will contain all the user details that the user entered while creating the account on the app. The user can update and make changes to all this information as desired.

- **Self-Defence:**This page contains why self-Defence is needed for women. It also contains some short clips of self-defence.

- **Laws**: This page contains some important laws that a women should know. This can help women to be more confident.

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2.5 bSAFE ON ANDROID APPLICATION

This is user-friendly application that can be accessed by anyone who has installed it in their smart phones.
Our intention is to provide you with fastest and simplest way to contact your nearest help. In this system
user needs to feed three contact numbers, in case of emergency on moving the phone up and down thrice,
the system sends SMS and calls on one of the numbers feeded into the system with the location.

This app will help the user in their safety. Not only women, everyone can use this app.

CHAPTER-4
TECHNOLOGY USED

4.1ANDROID

Android is a linux-based operating system designed primarily for touch screen devices such as smart phone tablets and computers. Released in 2008, is now owned by Google. So android is a operating system like Windows, Ubuntu and Mac OS and a lot number of devices use Android these days like mobile phones, watches, laptop and television. So we also created an android application “bSAFE”, a women safety app. Play Store is a market place for all the Android Apps. So we need to know what basically an android app is. An Android app is software running on a Android Platform. So this can be concluded that like all the software it is a combination of Backend and Frontend. Backend to design the logical parts of the app, for the functionality whereas Front End to develop the User Interface. And to implement the various parts of the android app, we require a number of tools and technologies which will come into picture. But first it would be great to see the three different type of Android Apps:-

- **Native Apps:** An executable program coded in the machine language of the hardware platform it is running in. **Native applications** are compiled into the machine language of that CPU. For example, **Windows** and Mac executable **apps** are in x86 machine language, while **mobile apps** are ARM based. Native apps are the most common. They're coded in a specific language like Swift for **iOS** or Java for Android. A popular example is WhatsApp.
- **Web Apps:** are accessed via the internet browser and will adapt to whichever device you’re viewing them on. They are not native to a particular system, and don’t need to be downloaded or installed. Due to their responsive nature, they do indeed look and function a lot like mobile apps — and this is where the confusion arises.
- **Hybrid Apps:** Hybrid apps are deployed in a native container that uses a mobile Web View object. When the app is used, this object displays web content thanks to the use of web technologies (CSS, JavaScript, HTML, HTML5).It is in fact displaying web pages from a desktop website that are adapted to a Web View display. The web content can either be displayed as soon

as the app is opened or for certain parts of the app only i.e. for the purchase funnel. In order to access a device's hardware features (accelerometer, camera, contacts…) for which the

native apps are installed, it is possible to include native elements of each platform's user interfaces (iOS, Android): native code will be used to access the specific features in order to create a seamless user experience. Hybrid apps can also rely on platforms that offer JavaScript APIs if those functionalities are called within a Web View

4.2 VERSION OF ANDROID

Each year Android releases a new version with better features, better security and better User Interface experience and a new symbol. Here is the table of list of versions

Figure-5: Android Kitkat

Code name	Version number	Initial release date
(No codename)	1.0	September 23, 2008
Petit Four	1.1	February 9, 2009
Cupcake	1.5	April 27, 2009
Donut	1.6	September 15, 2009
Eclair	2.0 - 2.1	October 26, 2009
Froyo	2.2 - 2.2.3	May 20, 2010
Gingerbread	2.3 - 2.3.7	December 6, 2010
Honeycomb	3.0 - 3.2.6	February 22, 2011
Ice Cream Sandwich	4.0 - 4.0.4	October 18, 2011
Jelly Bean	4.1 - 4.3.1	July 9, 2012
KitKat	4.4 - 4.4.4	October 31, 2013
Lollipop	5.0 - 5.1.1	November 12, 2014
Marshmallow	6.0 - 6.0.1	October 5, 2015
Nougat	7.0 - 7.1.2	August 22, 2016
Oreo	8.0 - 8.1	August 21, 2017
Pie	9.0	August 6, 2018

Table -1: Versions of Android

4.3 TOOLS AND LANGUAGES

Tools used to build the Android App are:-

- **Android Studio**: Android Studio is an environment that help us create and edit Android applications. It is the official IDE for Android App Development. It has intelliJ's powerful code editor and developer tools and various features that enhance productivity while developing apps.

- **Software Development Kit (SDK)**: Android Studio requires a collection of libraries and data therefore SDK is mandatory.

Languages used in building an Android Application are classified as per the Front End and Back End. For designing the Front End of an application we have used XML and for designing the Back End we have used Kotlin.

- **XML:** XML is the extensible Markup Language. It is the met language which allows users to define their own customized markup language especially in order to display documents on Internet. It is the language that contains tags that store information. And the tags can be used to present data on the screen.

Kotlin: Java is a programming language and computing platform first released by Sun Microsystems in 1995. It has evolved from humble beginnings to power a large share of today's digital world, by providing the reliable platform upon which many services and applications are built. New, innovative products and digital services designed for the future continue to rely on Java, as well.

4.4 BASIC TERMINOLOGY

- **Layout:** Layout is the parent of view. It arranges all the views in a proper manner on the screen.

- **Activity**: An activity can be referred as your device's screen which you see. User can place UI elements in any order in the created window of user's choice.

- **View**: A view is an UI which occupies rectangular area on the screen to draw and handle user events.

- **Emulator**: An emulator is an Android virtual device through which you can select the target Android version or platform to run and test your developed application.

- **Manifest file**: Manifest file acts as a metadata for every application. This file contains all the essential information about the application like app icon, app name, launcher activity, and required permissions etc.

- **API:** Short for Application Programming Interface. APIs are functions that developers can call on to access specific features by calling upon programs, code, and services that others have written. For example, if a developer wants to draw a button on the screen, she can insert a small bit of code that says "draw this kind of button, with this color and size and style, at this location" instead of dozens of lines of code that tells the graphics processor, in detail, exactly how to draw a button. If the application wants your location, it can use the location API to "get the device's location" and let Google's code handle the rest, instead of requiring the developer to build an entire location service from scratch just for her own app. There are thousands of APIs in Android, covering everything from drawing interface elements, to the cameras, to location access, to accessing storage, to 3D graphics (see: OpenGL ES) and much more.

- **Intent:** Intents are an essential part of the Android ecosystem. They are used to express an action to be performed. Intents allow you to interact with components from the same applications as well as with components contributed by other applications. It can be classified into implicit and explicit intents.

- **Implicit intent:** It does not name a specific component, but instead declare a general action to perform, which allows a component from another app to handle it.
- **Explicit Intent:** It specifies the component to start by name. You'll typically use an explicit intent to start a component in your own app, because you know the class name of the activity or service you want to start.

- **APK**: Short for "Android application package." The extension used in Android app installation files (e.g., app.apk). Similar in nature to an EXE file on Windows.

- **SDK:** Short for "Software Development Kit." As it pertains to Android, the SDK is a set of tools such as code libraries, a debugger, and a handset emulator that can be run on Windows, Mac, or Linux to facilitate the creation of Android apps by developers. While the SDK is generally intended for use by developers, end users can install the software on their home computer to execute ADB and Fast boot commands.

- **Action Bar**: The action bar is an important design element, usually at the top of each screen in an app that provides a consistent familiar look between Android apps. It is used to provide better user interaction and experience by supporting easy navigation through tabs and drop-down lists.

- **Navigation bar**: Android Navigation Drawer is a sliding left menu that is used to display the important links in the application. Navigation drawer makes it easy to navigate to and fro between those links. It's not visible by default and it needs to opened either by sliding from left or clicking its icon in the Action Bar.

Fragment: A Fragment represents a behavior or a portion of user interface in a Fragment Activity. You can combine multiple fragments in a single activity to build a multi-pane UI and reuse a fragment in multiple activities.

SQLite: SQLite is a C-language library that implements a small, fast, self-contained, high-reliability, full-featured, SQL database engine. SQLite is the most used database engine in the world. SQLite is built into all mobile phones and most computers and comes bundled inside countless other applications that people use every day.

The SQLite file format is stable, cross-platform, and backwards compatible and the developers pledge to keep it that way through the year 2050. SQLite database files are

commonly used as containers to transfer rich content between systems and as a long-term archival format for data. There are over 1 trillion (1e12) SQLite databases in active use

SQLite source code is in the public-domain and is free to everyone to use for any purpose.

Android Application -bSAFE

CHAPTER -5
IMPLEMENTATION AND USER INTERFACE

Creating an app concept design with screen sketches and functional flow diagrams is the best way to communicate your vision to the mobile app developer. Making the concept clear to the developer is probably the most important factor in successful mobile app development. Yet it is one of the most common problems or obstacles in a mobile app development outsourcing project.

No matter what the marketing and profit goals are or if you are outsourcing an app for your personal use, you need to fully design and document the app concept if you expect a programmer to make your vision a reality. Developers are not mind readers and even descriptions given during conversations can be very fleeting or interpreted differently. Fully documenting your concept, therefore, leaves little to chance. The two most important things to do are: A) make a comprehensive description of how the app works and what it does (functionality) and B) create a comprehensive description of what the user sees and does (look and feel).

5.1 Implementation of the bSAFE:

Implementation of bSAFEis taken place in various phases. Firstly we build the login interface then Navigation drawer i.e. make fragment for each of the list item using the Navigation view and the make various layout for the supporting features and connect the app with sqLite for dasabse storage.

5.1.1 Step to be followed to develop the app:

1. Firstly we create the splash screen with animated text using XML and linked it with the main Activity through JAVA.
2. After that we create login phase which comprises of various phases that are mentioned below:
    - Login Page: allows user to login into the app if the user is existing one
    - Register Page: If the user is new to our app then firstly he/she have to register themselves on the app.

- Forgot Password: allows user to reset the password if it forget the previous password.
- **For authenticating the user we have used sqLite databse.**

3. Now, we are going to create Navigation drawer for that purpose we have used following functionality of android:
    - Fragments(SupportFramentManager)
    - Menu – items
    - Drawer header
    - Hamburger icon
    - ActionBarDrawableToggle (help to create navigation Bar)
4. .Creating fragment for each of the menu item. Our Menu items are:
    - Dashboard
    - Profile
    - Instructions
    - Display
    - Tips
    - Laws
    - Self-Defence
5. Now we have created various activities like Instructions, Display, GPSTracker and many more.
6. In the description Activity there are various functionality. Some of them are mentioned below
    - Preview: We have set OnClickListener to this. With the help of this if user clicks on this button it will redirect the user to the Instruction page.
    - Laws:Here we can read the laws in women wellfair.

5.1.2 Step to be followed by the user

1. Firstly, we have build splash activity to start the application.
2. Then, we have the Login activity which consists of following steps
    - Register : for new User
    - Login: For existing as well as new user
    - Forgot Password: To reset your password
3. We authenticate and store the user information from the SQLite.
4. After that, we made a Drawer layout of our bSAFE app which includes various functionality
    - Profile Fragment: To check the profile and update the database.
    - Dashboard Fragment: Show the book on the genre basis and it is open by default.
    - Sign-out Fragment: Remove/logout you from the app.

5.2 User Interface

- **Splash Screen**

Figure-7: Splash Screen

- **Register Page**

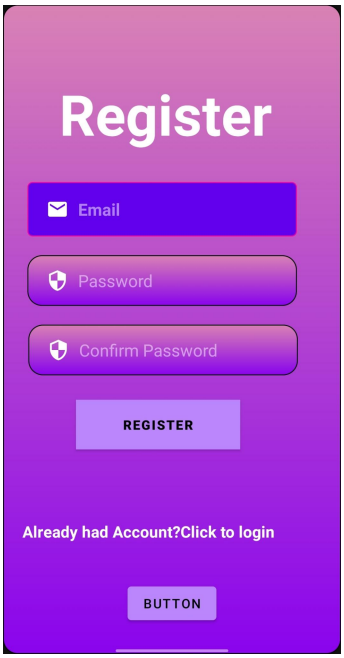
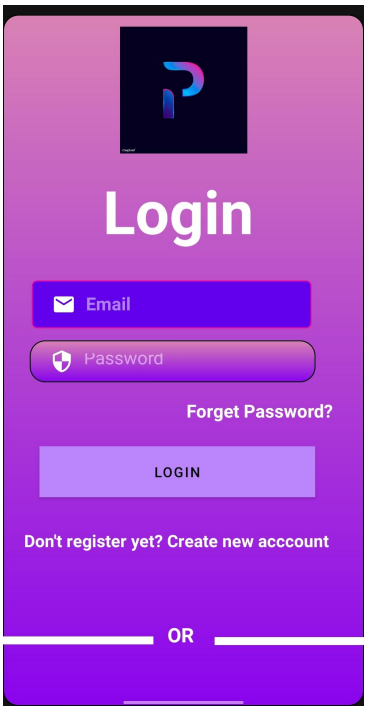


Figure-8: Register Page

- **Login Page**


Login
Email
Password
Forget Password?
LOGIN
Don't register yet? Create new acccount
OR

- **Navigation Drawer**

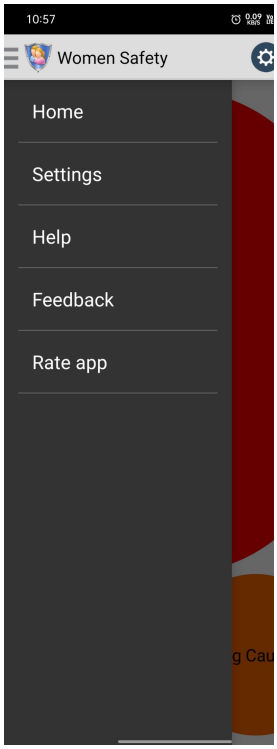


Figure-11: Navigation Drawer

CHAPTER - 6
TESTING

Once source code has been generated, software must be tested to uncover as many errors as possible before delivery. It is very important to work the system successfully and achieve high quality of software. Testing include designing a series of test cases that have a high likelihood of finding errors by applying software-testing techniques.

System testing makes logical assumptions that if all the parts of the system are correct, the goal will be successfully achieved. The system should be checked logically. Validations and cross checks should be there. Avoid duplications of record that cause redundancy of data.

In other Words, Testing is the process of evaluating a system or its component(s) with the intent to find whether it satisfies the specified requirements or not. It is executing a system in order to identify any gaps, errors, or missing requirements in contrary to the actual requirements.

The Android framework includes an integrated testing framework that helps you test all aspects of your application and the SDK tools include tools for setting up and running test applications. Whether you are working in Eclipse with ADT or working from the command line, the SDK tools help you set up and run your tests within an emulator or the device you are targeting.

There are different types of testing some of them are listed below:

6.1 Installation Testing:

There are two types of apps on an Android device i.e., Pre-installed applications and the applications which are installed later by the user.

For both of the above, installation testing is carried out by our teammates. It is ensuring smooth installation of the application without ending up in errors, partial installation etc.

6.2 Unit Testing

It focuses on smallest unit of software design. In this we test an individual unit or groups of inter related units. It is often done by programmer by using sample input and observing its corresponding outputs. In this testing technique we are primarily focuses on

- Loop methods and function is working fine or not.
- Misunderstood or incorrect Arithmetic precedence
- Incorrect Initialization
-

Unit Testing of the app:

Test cases	Description	Expected Outcome	Result
1	Start Page – Launch Screen	Should display splash screen with animated text	Pass
2	Register Screen	Should display register activity where you need to fill the required details	Pass

6.3 User Testing

User testing is the process through which the interface and functions of a website, app, product, or service are tested by real users who perform specific tasks in realistic conditions. The purpose of this process is to evaluate the usability of that website or app and to decide whether the product is ready to be launched for real users.

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This app was tested by our team mates and friends who are using different mobile phones (and having different android version) also tested on different emulator to check its performance and it seems to be working fine and users of this app are satisfied with the facilities and performance of the app and like the way how the app is worked.

6.4 Performance Testing

In this type of testing we have checked the performances of our application under some peculiar conditions are checked. Those conditions include:

- Low memory in the device.
- The battery in extremely at a low level.
- Poor/Bad network reception.

Performance is basically tested from 2 ends, application end, and the application server end. Our app is also performing well in this phase of testing as well. And we are getting positive feedback from user of our app.

6.5 Compability Testing

This application was tested and used on different devices like LG G3, Google Nexus 4. The application worked fine and is stable. The application worked fine in portrait mode and there isn't any problem with compatibility.

On all types of testing (that we have performed above) our performing well on our app i.e. bSAFE.

CHAPTER -7
CONCLUSION

Proposed bSAFE App is an android application that will allow users to search for books by title, author name or subject name. This application takes in a user input and searches the Google Books API with the user input and gets a list of published books based on the users search query. Search result screen will contain a list of book with following details: Author of the Book, title, average, rating Price of the Book. To get the information of the particular book user can click upon the book from the list and then will be taken to the new tab where description and other information related to the book will be available. Users can also add the book to the favourites.

This application has wide range of scope in the upcoming era. It is impossible to arrange the hard copies of every book so this type of application can reduce the barrier to get knowledge at any place in a cost effective, productive way. For students who are interested in learning online can use this application and keep all the books they want to learn from at one place (in favourites section) and can create their own personal E-library. Even individual book stores can have this system of book apps promoting their brand name as Digital Marketing and can gain number of customers.

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Google Maps: http://code.google.com/android/add-ons/google-apis/maps-overview.html