KLE Society's
KLE Technological University

A Mini Project Report

On

Avoid Relapse Stay Sober Android Application

submitted in partial fulfillment of the requirement for the degree of

Bachelor of Engineering

In

Computer Science and Engineering

Submitted By

Name	USN
Shivani Gurnalli	01FE19BCS265
Madhura Nagaraj Nayak	01FE19BCS285
Soumya Jakkali	01FE19BCS288
SupriyaKhemalapure	01FE19BCS290

Under the guidance of

Dr. P.G Sunitha Hiremath

SCHOOL OF COMPUTER SCIENCE & ENGINEERING

HUBLI–580 031 (India).

Academic year 2021-22

KLE Society's
KLE Technological University

2021 - 2022

KLE Technological University
Creating Value
Leveraging Knowledge

SCHOOL OF COMPUTER SCIENCE & ENGINEERING

CERTIFICATE

This is to certify that Mini Project entitled Avoid Relapse Stay Sober is a bonafide work carried out by the student team Ms. Shivani Guranalli - 01FE19BCS265, Ms. Madhura Nagaraj Nayak – 01FE19BCS285, Ms. Soumya Jakkali -01FE19BCS288, Ms. SupriyaKhemalapure – 01FE19BCS290, in partial fulfillment of completion of Fifth semester B.E. in Computer Science and Engineering during the year 2021 – 2022. The project report has been approved as it satisfies the academic requirement with respect to the project work prescribed for the above said programme.

Guide **Head, SoCSE**

Dr. P.G Sunitha Hiremath **Dr. Meena S. M**

External Viva:

Name of the Examiners	**Signature with date**
1.	
2.	

ABSTRACT

Alcohol consumption is a major problem around the world. It not only affects the person who consumes but also affects his/her family. Many people who had quit drinking may relapse due to many triggering points. To keep them motivated and help them to stay sober, we developed a mobile application that has features to calculate the risk level based on volume of alcohol consumed, to keep track of sobriety days, to listen to motivational talks, bhajans and prayers, to get help from rehabilitation centers and SDM (The Shri DharmasthalaManjunatheshwara) rehab camps for admissions and for counseling. From our survey we have found these features for our application. The project aims at helping the alcoholics to stay sober. Before developing this we went through some already existing systems and understood the drawbacks of those systems and considered those to develop better system.

Modern-day mobile applications are many, but all are not available in the regional languages. So, we developed an application that can provide features in 5 languages. Users can set this app in their preferred languages and can use this app comfortably. We aim to reach this app mainly to rural people and they should benefit with this application.

ACKNOWLEDGEMENTS

Project becomes successful not only because of people who are working on that but also the guide and inspiration they get from the people who are supporting throughout the project and give better advice to enhance skills through the project. We take this opportunity to thank and appreciate the inspiration and the support we got from the people to complete this project.

This Mini Project report on Avoid Relapse and stay sober android application is the outcome of guidance, moral support of many and the team work. For this we, the team members acknowledge and express who have been a source of inspiration, guidance and teaching during the project.

First and foremost we thank Dr.P.GSunitha Hiremath, for guiding us throughout the project constantly and supporting us through her knowledge.

We thank Dr.AshokShettar, Vice-chancellor, KLE Technological University and Dr. Prakash Tewari, Principal, B V Bhoomaraddi College of Engineering and Technology, Hubli for this great opportunity.

We thank Dr. Meena S M, Head, School of Computer Science and Engineering for providing the project opportunity to get practical knowledge through this project and which enhances our knowledge.

1.INTRODUCTION

1.1Preamble

Alcohol is a beverage which is easily available, cheap and the only legal drug used all over the world. People use alcohol to celebrate, relax, enjoy and in sad or stressed situations because of this alcohol consumption has increased drastically. Alcohol consumption in India amounted to about 5.4 billion liters in 2016 and was estimated to reach about 6.5 billion liters by 2020 [1]. Overconsumption can cause serious health problems such as heart diseases, strokes, cancer, liver disease, weakening of the immune system and mental health problems and social problems. Low consumption of alcohol over a longer period also has adverse side effects.

In 2018 WHO has reported that 2.6 lakh people died in India due to alcohol consumption. One lakh deaths occur on India's roads every year are indirectly associated with alcohol. About 30000 deaths among cancerous patients can also be traced to use of alcohol. Nearly 1.4 lakh people die every year because of liver cirrhosis which is posed by alcohol use [2].

Many people are trying to overcome alcohol addiction but have failed to do so. Quitting alcohol is not easy, if a person drinks heavily for a long period and stops it suddenly then he or she will suffer from physical and mental problems called alcohol withdrawal symptoms. This is the most critical period for the person to move towards a new healthy life. Once he overcomes this there is another problem that is relapse.

Many rehabilitation centers are there in Karnataka. Jana JagratiVedike(J.J.Vedike) is one among them. It helps people to quit drinking and lead a beautiful life. But people are not aware of rehabilitation centers and camps that are being held in their areas. Sometimes even though the people are aware about the camps and attend the camps, most of them fail to continue a sober life. Relapse is the problem among such people. Over 30% of people who attempt to stop drinking relapse in their first year of sobriety. 21.4% of recovering alcoholics relapse in their second year in recovery, but only 9.6% relapsed in years three through five, and only 7.2% relapsed after five years in recovery. This means, more than 70% of people struggling with alcohol abuse will relapse at some point [3].

Person who tries to quit will relapse due to triggering factors. The triggers can be internal like craving, stress, etc., and external triggers like people, places, situations, etc.[4]. Triggers can also be negative like depression, fear, anger etc and positive triggers like functions, parties etc.[5]. Staying sober is a life changing step, it is a real challenge for a person. It not only improves the life of an addicted person but also gives peace to his family, friends and society.

Major methods followed to treat alcoholics are therapies like cognitive behavioral therapy, family therapy, psychotherapy etc. Rehabilitation centers and mobile health applications also play a major role in helping alcoholics. Mobile health is a rapidly expanding field in the digital health sector. Mobile health is a range of activities in both clinical and non-clinical populations. More than half of the population in India use smartphones. These have increased patient engagement and reduced costs. More than 1,65,000 health applications are available across the iTunes and Android app stores [6]. These can help friends and families to connect with people in addiction and help them relieve stress and avoid triggers.

In this project we are introducing four components in the app where each component of the app helps the alcoholics to quit alcoholism and lead a sober life. Each component of the project is developed by collecting the requirements from the sober people. So based on this problem statement is defined in the section 1.5

1.2 Motivation

Excessive alcohol consumption causes chronic health diseases and other problems such as depression, anger and it is damaging family relationships. Most people are unaware of methods to quit alcohol. One of the methods includes Rehabilitation Centre and camps.

The Shri Dharmasthalamanjunatheshwara(SDM) De-addiction and Research Centre at Ujire in Karnataka state, is organizing alcohol de addiction campsin different areas. The duration of the camp is 8 days with support of medical staff.

The SDM deaddiction center keeps motivating the people by conducting motivational talks, speeches and other interesting programs. Even after the completion of the 8 day camp they connect with those people to support them to stay sober and help them by training them to set up their business.

1.3 Objectives

Objectives :

- To develop an android application in regional languages that provide information about nearby rehabilitation camps organized by SDM and doctors' numbers.
- To develop an android application to calculate the Alcohol risk level , keep track of sobriety days and get help from the trigger avoidance component.

1.4 Existing Systems

This section discusses the various mobile applications that address the issues related to alcoholism**.**

1.4.1 Mobile Applications

In order to remain sober, mobile applications help a lot. Few apps that we surveyed are I am sober, EasyQuit Drinking, Clean time counter, Iron will, AA Speaker Free, Sobriety Clock, No relapse and SoberPeer etc. But the problem arises when the rural people will not be able to use such apps as these apps are not available in regional language.

1.4.1.1 AA speaker

AA speaker Free is a Britain app released on 15 September 2014, developed by Marnistek, made in the United Kingdom. It is available for free and memory space required is 16.03 MB. This application has been downloaded by more than 100k people. Users of this app are UK people and those who are fluent in English. Features of this app are it has more than 500 speeches of recovery people, Joe and Charlie's big book study part by part 34 audios, audios of big book study alcoholic anonymous written by Bill Wilson, 12 steps and 12 traditions of alcoholic anonymous and audios of workshops that are held at different places. Drawbacks of this app are that people who do not know English are unable to use this app and there is no interaction between people.

1.4.1.2 Sobriety clock

Sobriety clock is an American app released on 22 September 2014, developed by Michael Tiffany. It is available for free and memory space required is 9.92 MB. This application has been downloaded by more than 100k people. Users of this app are people who read and understand English. Features of this app are it keeps track of how long a user has been sober. The 12 steps of recovery, the user can browse quotes, read quotes and add quotes and can set sponsor contact so that he or she can make a phone call in a single touch. Drawbacks of this app are rural people may find it difficult to use this app, illiterates cannot understand 12 steps of recovery since they are in English, if the user relapses then there is no option to reset or change the sober day count.

1.4.1.3 No Relapse

No relapse is an Indian app released on 25 April 2019, developed by Supervoid. It is available for free and memory space required is 16.03 MB. This application has been downloaded by over 10000 people. Users of this app are Urban educated people of India. Features of this app are it keeps track of sobriety day (that is from how many days the user has been sober) , reminds the most recent strike duration and time, it has inspirational quotes, images and posts to keep users motivated, users can save images on their phone and can share to anyone. The Drawback of this app is that the number of quotes are limited to 25 only.

1.4.1.4 Easy Quit Drinking

EasyQuitDrinking is a German app released on 17 December 2016, developed by Mario Herzberg. It is available for free and downloaded by more than 500k people. This app does not take any user information except date and time of quitting alcohol. Money spent weekly, drinks per week and currency symbol need to be set so that the app calculates how much money saved from the day of quitting. Mind games will help to distract his mind from triggers. Total health section contains 18 health conditions with the time to reach that health condition, it will decrease based on sobriety days count and show the percentage of improvement. We can add our craving for 10 marks and triggers. Its

history will be available to analyse. Some other features are helpful tips to avoid triggers, quit slowly mode, dairy to add our feelings, motivation section to add quotes or any motivational thoughts. Lifetime regained will be counted, based on achievement badges are given, we can add relapse count and start again by setting date or ignore relapse or shift quitting date to week or month. Drawbacks are all these features helpful for urban literate people but not for illiterates, not simple to use, there is no definite output for some features so that users should analyze on their own.

1.6.1.5Clean time counter

Clean time counter is a Russian app released on 23 January 2013, developed by topotApps. It is available for free and downloaded by more than 500k people. This app takes the date, time of quitting alcohol and options to select addiction type. We can add our name, gender, password and it is optional. It counts the sobriety time in days, hours, minutes and in seconds. Drawbacks are it has only one feature and no options to get connected with the sober community.

1.6.1.6 Iron Will

Iron will was released on 11 February 2019, developed by Emerald Isle studio. It is available for free and downloaded by more than 500k people. It counts sobriety in days, months and in years. Rank is given based on days of sobriety. Reset button is to set time again during this we can add reasons or short notes for relapse and this history is saved to analyze. Person can see his sober days on the home screen by changing the settings. Drawbacks are not counted in hours, minutes and in seconds and it is for the one who is willing to quit drinking.

1.6.1.7 I am sober

I am sober is an American app released on 18 February 2014. It is available for free and memory space required is 52.86 MB. More than 10L people are using this app. It takes a date from which a person is sober and it will set the track on it. It takes aim from the user and motivates him or her to quit alcohol. It makes him take pledge every day, sends notification everyday to take pledge and it gives motivational thoughts. Users can post photos and share their experience with other users. There is a provision for a personal diary where the user can write his personal things so that they can recap their past. Savings of money,time,calories can be calculated. It maintains the statistics of the

current pledge streak,longest pledge streak,total pledge,total reviews. This app has some drawbacks, since all the features are through texts, illiterates cannot use this. There is a chance of posting irrelevant posts.

1.6.1.8 Sober Peer

SoberPeer is a California based application, released on 2 May 2020.It is available for free and it has more than 500 users. It takes a daily survey from the user. Small groups can be created, meetings can be arranged to learn how to avoid addictions. Users can post their stories. Users can add their triggers like people or places on a map and that notifies them whenever they are in that location. Users can also choose a coach, chat with them, and join sessions. They can even find a sober peer friend. There is a provision for journals where they can write their experiences in personalized notes. This application has some drawbacks, like the survey does not provide any results. Sessions conducted by coaches are not free. Users cannot keep track of their sobriety period.

1.5 Problem Definition

To develop an application that helps people to calculate risk level, find information about rehabilitation centers, zone wise helpline number, to track sobriety days and techniques to avoid triggering factors in their regional languages.

2. PROPOSED SYSTEM

2.1 Description

The proposed system aims at building an android application named Avoid Relapse Stay Sober. The application provides certain set of features to users such as :

- The application is available in 5 languages. Users can select the required language.
- The user can track his sober days and can reset it whenever he/she relapses.
- The user can check the level of risk that will be caused by the amount of alcohol he consumes.
- The user can avoid his triggers by listening and watching videos of bhajans, prayers and motivational talks.
- The user can get information of all rehabilitation centers details of particular district.

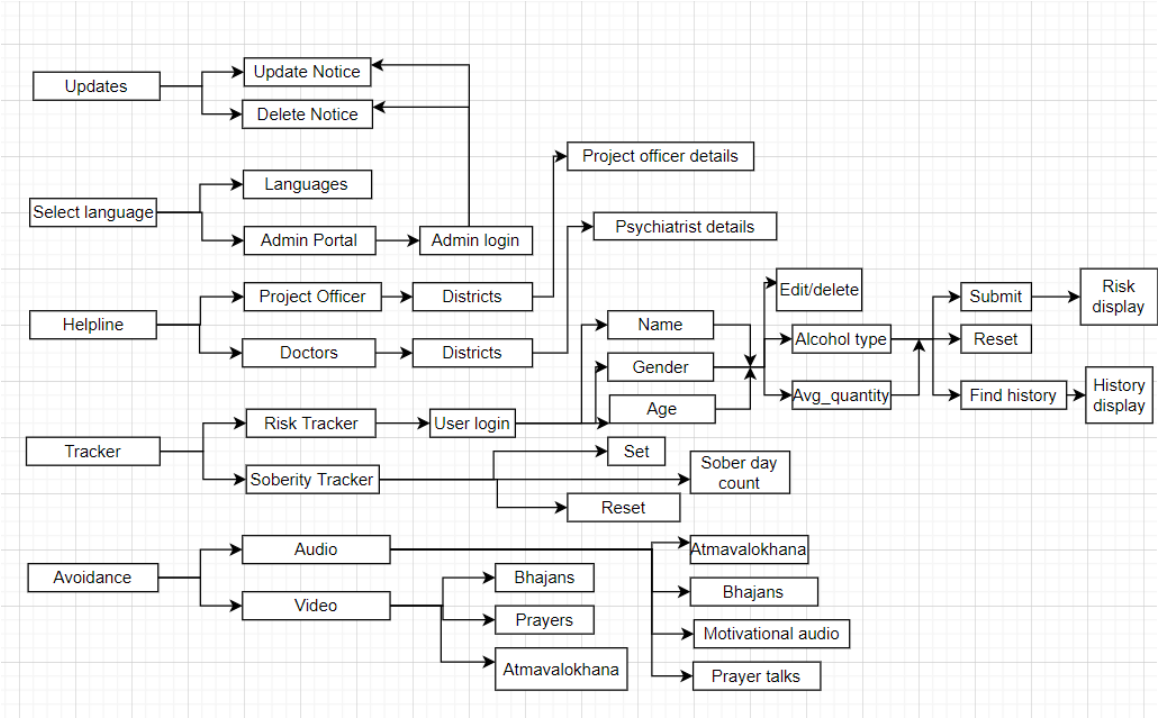


Fig 2.1: Flow diagram

2.2 Description of Target Users

The target users are people who have quit alcohol and the one who is trying to stay sober and rural people who are unaware about the rehabilitation center details. Our focus is more on rural people.

It is difficult to stay sober, as a person can get triggered to have alcohol.

Application can help them to get through these triggers to some extent and keeps them motivated to stay sober.

2.3 Advantages

The applications of our projects are:

- Android applications can be used to avoid triggers and find nearby rehabilitation centers and camps details.
- Android applications can be used to track your sobriety days count and calculate the Alcohol risk level.

2.4 Scope

- This application can be used by both sober people and the volunteer(one who wants to quit alcohol).
- Android mobiles' version should be greater than 7.
- Device should have an internet connection to access the videos.
- Devices should give call permission (Telephone access) to the app to get connected to calls.
- Admin should give file permission to upload images.

3. SOFTWARE REQUIREMENT SPECIFICATION

3.1 Overview of SRS

Every application has its specific requirements. The requirements describe the functioning of a developed application and prerequisites for it. The following are the requirements for the android application.

3.2 Requirement Specifications

Functional requirements are the functionalities to be provided by the application.

3.2.1 Functional Requirements

Following are the Functional requirements for the application:

- In ‘updates’ component :
    - Admin shall be able to add posts.
    - Admin shall be able to delete posts.
    - Users can view the posts.

- In Language component :
    - Users shall be able to select required language.
- In ‘Risk tracker’ component :
    - Users shall be able to enter username and gender.
    - Users shall be able to enter the amount of alcohol consumed in ml.
    - Users shall be able to enter the brand of alcohol.
    - Onclick users shall be able to calculate their risk level based on alcohol amount and brand of it and gender of the user.
    - Users shall be able to view his average alcohol consumption in view history.
- In ‘Sobriety tracker’ component :
    - Users shall be able to set the timer.
    - Users shall be able to reset the timer.
    - Users shall be able to view their Sobriety period.
- In ‘Trigger avoidance techniques’ component :

- Users shall be able to listen to Audios of bhajans, prayers, motivational talks.
- Users shall be able to watch videos of bhajans, prayers and motivational talks.

- In ‘Login’ component :
  - Admin can login by entering his email-id and password.
- In ‘Navigation bar’ :
  - Users shall be able to navigate through all 5 components by clicking

3.2.2 Use Case diagram

3.2.2.1 Update

In this module,Admin can post the updates related to SDM camps. Admin needs to login to post, update and delete the information in the update module. Users only have the permission to view the contents.

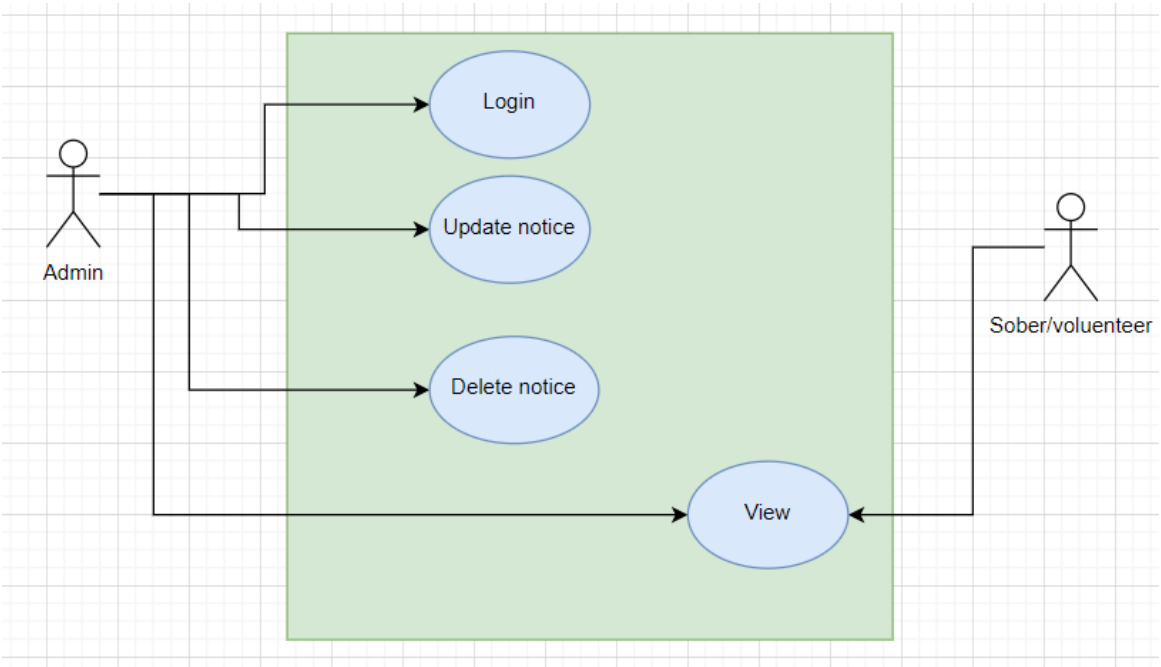


Fig 3.1: Update

3.2.2.2 Risk Calculator

In this module we are calculating risk level based on the amount and type of alcohol consumed using the following formula. In the risk tracker module, the user enters the type of alcohol consumed and Average quantity of alcohol and after clicking on the "Submit" button ethanol content in alcohol and risk level is displayed. If the user clicks on the "Reset" button, information entered by the users will be erased. If the user clicks on the "Find History" button, the app will direct the user to another page and their user can view the average risk level till date.

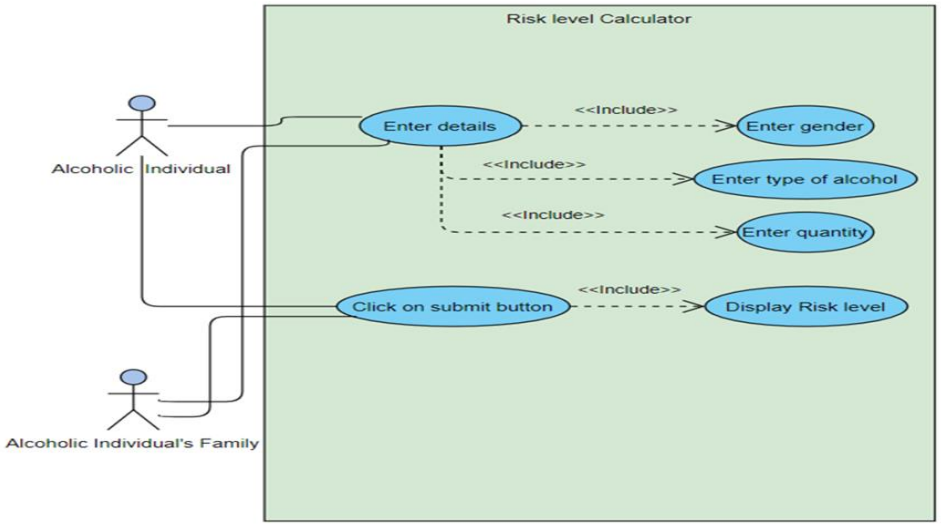


Fig 3.2: Risk calculator

3.2.2.3 Sobriety counter

When the user can set the date and time, the timer starts to count the sobriety days and when the user clicks on the okay button it displays the sobriety period of the user. Users can reset the date and time to restart the timer.

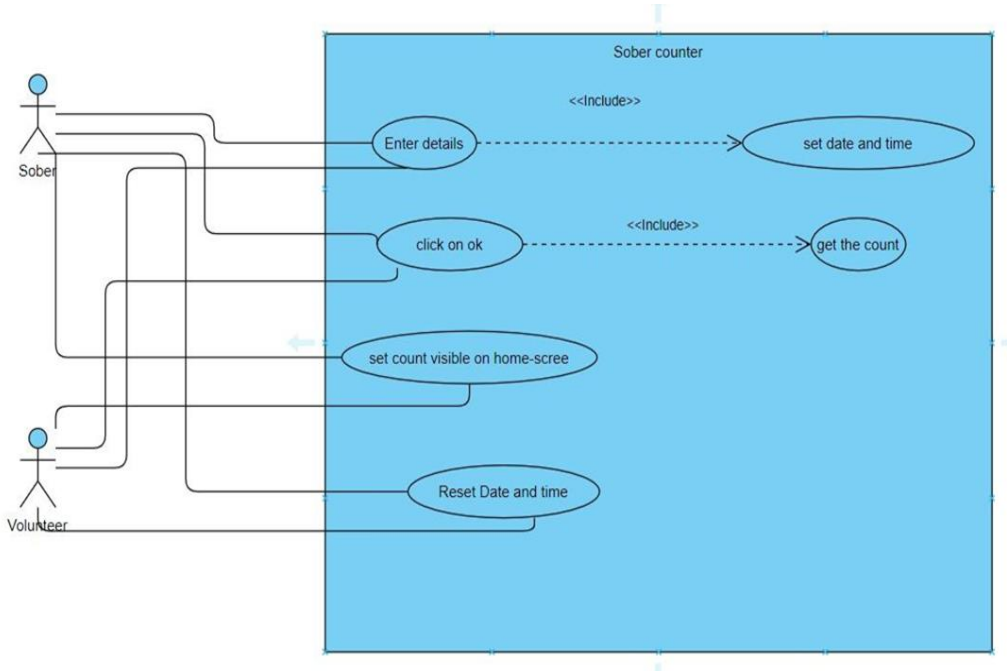


Fig 3.3: Sobriety counter

3.2.2.4 Trigger avoidance techniques

In this module users can get their preferred audios and videos list for avoiding themselves from the relapse. In this module if the user clicks on the “audio” button then the user gets a list of audios in the selected language. If the user clicks on the “video” button then the user gets a list of videos.

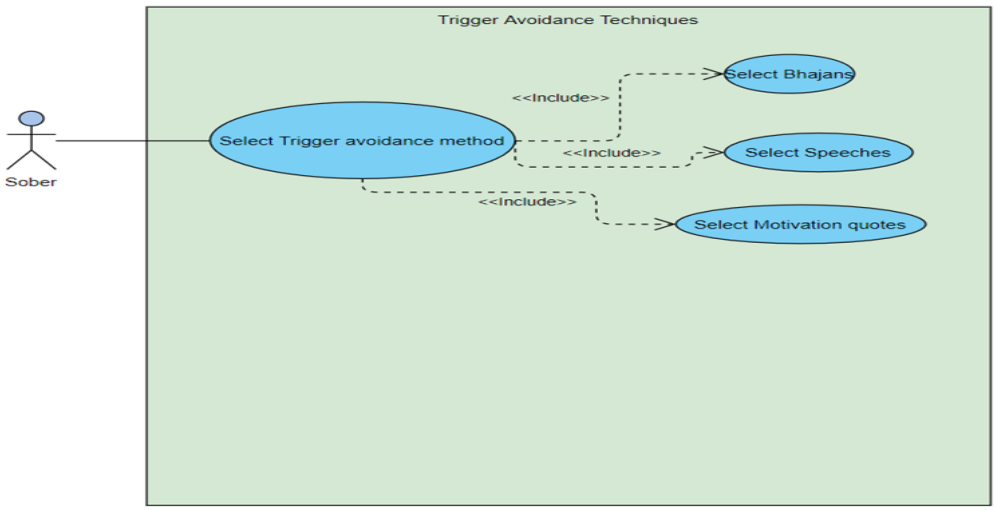


Fig 3.4: Trigger avoidance techniques

3.2.2.5 Helpline

Here the user can get contact details of the coordinators of camps held by SDM and users can also get address and contact details of all rehabilitation centers of a selected

district. Here users can make direct call to coordinators or rehab centers

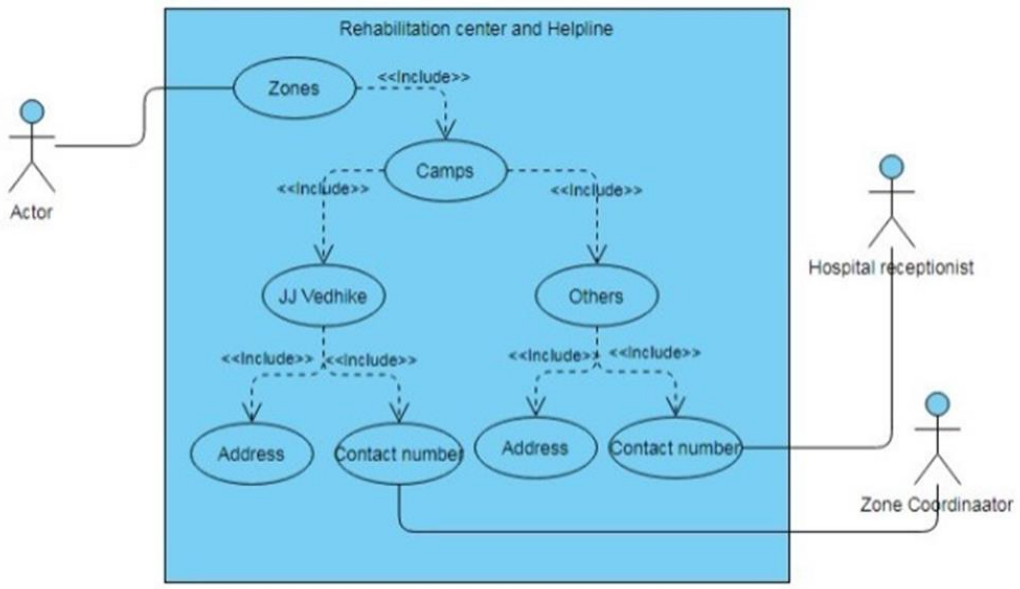


Fig 3.5: Helpline

3.2.3 Use Case descriptions using scenarios

3.2.3.1 Use case description of risk tracker

Actors	Alcoholic person, alcoholic person's family member.
Pre-condition	Users should get logged in. Users need to enter the inputs(type of alcohol and quantity of alcohol).
Main Scenario	On submitting the required inputs the risk level of user and ethanol content in alcohol will get displayed on screen.
Exception Scenario	Risk level should not display until all the inputs are given.
Post-condition	On submitting the inputs, the risk level of the user is displayed on screen with ethanol content in alcohol.

Table 3.1: Use case description of risk tracker

3.2.3.2 Use case description of sober day counter

Actors	Sober, volunteer.
Main Scenario	Keeping track of soberdays. User can reset the count whenever he gets relapsed.

	Timers need to keep on updating the day count until the user wishes to reset the count.
Exception Scenario	On clicking the ***SOBER DAY COUNT*** without setting the count ,an error message should display to set the timer.
Post-condition	On clicking the sober day count, the updated timer will get visible on screen. On clicking the ***RESET*** button timer sets to 0.

Table 3.2: Use case description of sober day count

3.2.3.3 Use case description of trigger avoidance techniques

Actors	Sober.
Pre-condition	Mobile should have internet connection.
Main Scenario	Users get audio and video options. On selecting the audio option users can hear music and motivational audio clips, and from the video section users can see motivational videos.
Exception Scenario	If the device is not connected to the internet then videos should not play.

Table 3.3: Use case description of trigger avoidance techniques

3.2.3.4 Use case description of helpline

Actors	Sober, alcoholic person, psychiatrists, project managers.
Pre-condition	Users need to give permission to the telephone, to connect the calls.
Main Scenario	Users get options to connect with JJ Vedhike's project manager and other psychiatrists based on selected districts.On clicking the options users get districts lists and based on the selected district contact details get displayed on screen.
Exception Scenario	If the ***call***button is clicked without giving call permission to the app, then the app stops and no call will get connected.
Post-condition	On clicking the***call***button, the call gets connected to the selected doctor or project manager.

Table 3.4: Use case description of helpline

3.2.3.4 Use case description of updates

Actors	Sober, Admins.
Pre-condition	Mobile should have internet connection.
Main Scenario	Admin login to his account Admin can Post the photos, stories and any other updates related to the camps conducted by J.J.Vedhike, and users can view the posts.

Table 3.5: Use case description of helpline

3.2.4Non Functional Requirements

Non functional requirements are the functionalities which the application must perform. These are mandatory functions. Following are the non-functional requirements for the application.

- Portability: App should be compatible with different devices.

3.3 Software and Hardware requirement specifications

Software requirements:

- Android studio 2020.3.1 (Arctic Fox)
- Operating system : Windows
- SDK tools

Hardware requirements:

- Android mobile

4. SYSTEM DESIGN

4.1 Architecture of the system

The application uses MVVM architecture. It is one of the most industrially used architectures. The architecture mainly contains 3 major components: Model, View and View Model. Model and view model helps to get the data from the user and save it. View takes the user's actions and sends this information to ViewModel so it is the main input point and it does not contain any application logic. UI events related details are sent to ViewModel. ViewModel reads the data from the Model whenever it is required. This architecture helps in easy modification of the application. This architecture simplifies the addition and removal of application features.

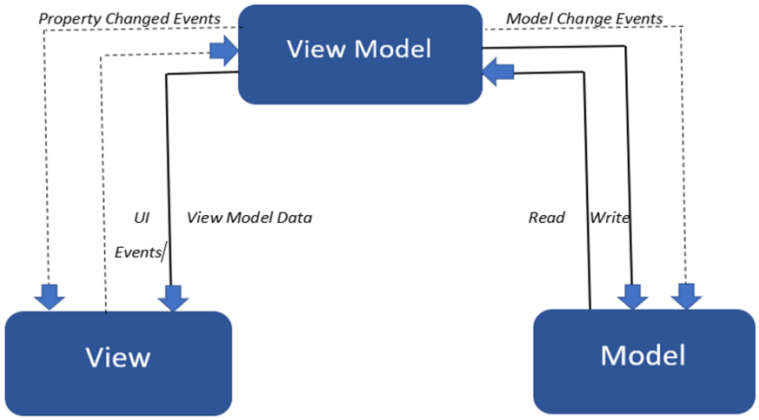


Fig 4.1: MVVM architecture

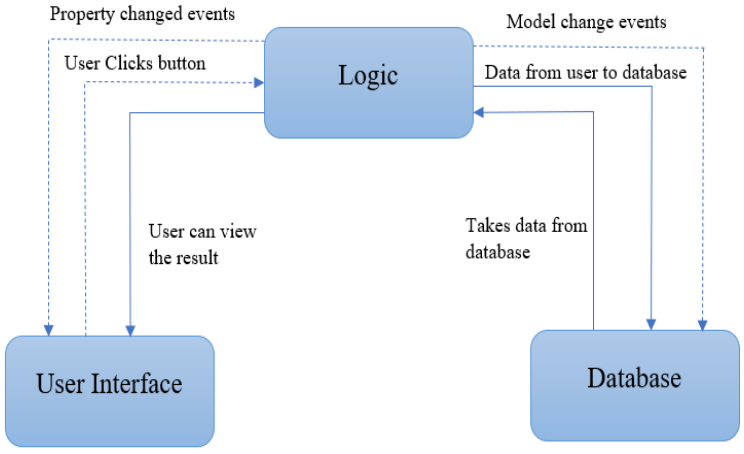


Fig 4.2: MVVM architecture

5. IMPLEMENTATION

5.1 Proposed Methodology

We employed an Agile approach, and because the needs were constantly changing, we were obliged to alter the models on a regular basis to accommodate the new requirements.

The Agile method necessitates several cycles to complete a fully functional application. After each iteration, we can test that stage and summaries the results so that any additional changes can be implemented in subsequent iterations. The discussions simplified and clarified the work. Work is divided in agile methodology, so work is completed in a timely and efficient manner. Even client feedback will be considered here.

As a result, we divided our Android application project into four sprints. As a result, each component can be analyzed separately, and errors can be easily detected.

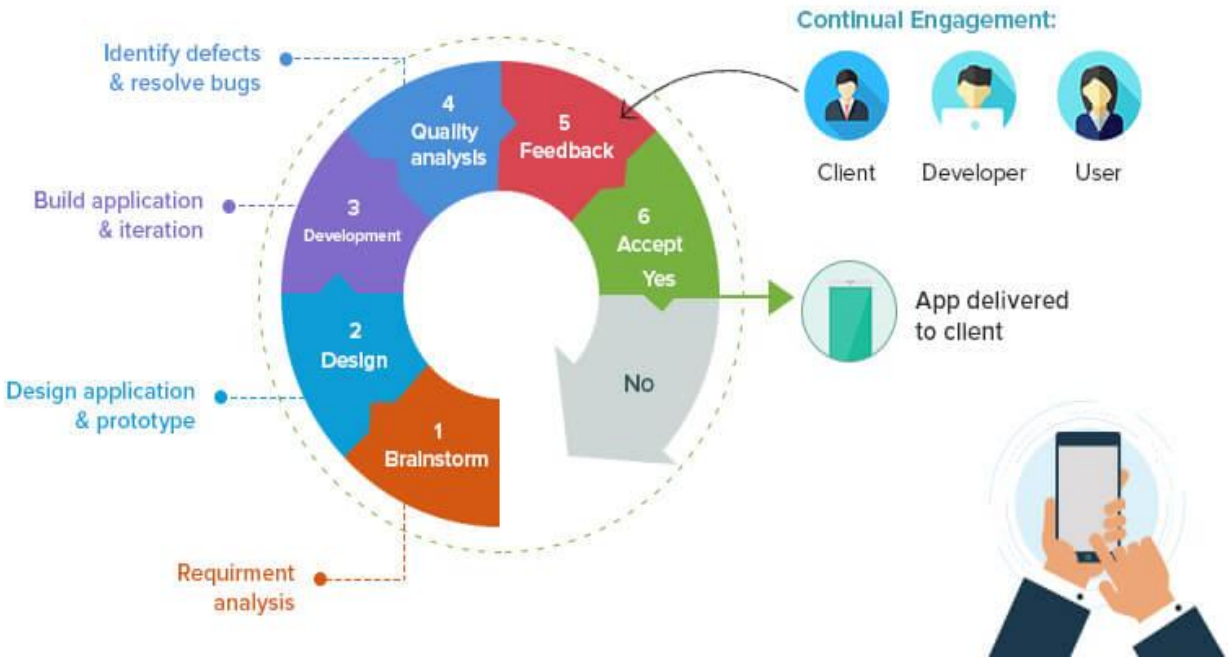


Fig 5.1: Agile Methodology

5.2 Description of Modules

Splash Video module:

When you launch the app, a 7-second splash screen appears. The splash screen includes images of Mahatma Gandhi and Shri Dr. D.VeerendraHeggade. The splash page features the KLE Tech college and J.J.Vedike logos, as well as a soothing background tune of "Raghupatiragava raja ram."The tag line on the splash screen is "Kudita Beda"(ಕುಡಿತಾಬೇಡ) to encourage users to avoid drinking.This splash screen appears every time the app is launched.

CODE:

```
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
getWindow().setFlags(WindowManager.LayoutParams.FLAG_FULLSCREEN,Window
Manager.LayoutParams.FLAG_FULLSCREEN);
setContentView(R.layout.activity_splashvideo);
video = (VideoView)findViewById(R.id.videoview);
Uri splash_video = Uri.parse("android.resource://" + getPackageName() +"/" +
R.raw.intro_correction_audio);
video.setVideoURI(splash_video);
video.setOnCompletionListener(new MediaPlayer.OnCompletionListener() {
@Override
public void onCompletion(MediaPlayermp) {
startActivity(new Intent(SplashActivity.this, feed.class));
finish();
}
});
video.start();
}
```

Feed Module:

The admins use a component named Updates to distribute the messages to the users. Messages could include J.J.Vedike's latest news, camp information, or any programs organized by SDM.Users can only view the messages and posts posted by admins. The posted photos can be maximized.

Input:

CODE:

```
private void getNotice() {
dbreference.addValueEventListener(new ValueEventListener() {
@Override
public void onDataChange(@NonNull DataSnapshotdataSnapshot) {
list = new ArrayList<>();
for (DataSnapshot snapshot :dataSnapshot.getChildren()){
NoticeData data = snapshot.getValue(NoticeData.class);
list.add(0,data);
}
note_adapter = new NoticeAdapter(feed.this,list);
note_adapter.notifyDataSetChanged();
progressBar.setVisibility(View.GONE);
deleteNoticeRecycler.setAdapter(note_adapter);
}
@Override
public void onCancelled(@NonNull DatabaseErrordatabaseError) {
progressBar.setVisibility(View.GONE);
Toast.makeText(feed.this,databaseError.getMessage() ,
Toast.LENGTH_SHORT).show();
}
});
}
```

Update and Delete Module:

Only admins have the ability to create and delete posts.Admins need to log in, to post or to delete the posts. The deleted posts disappear from the Update field.The posts get stored in the database, when the admin deletes the posts then it will be removed from the database.

CODE:

```
update_btn.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
```

```
MyDatabasemyDB = new MyDatabase(UpdateActivity.this);
name=name_ip.getText().toString().trim();
age=age_ip.getText().toString().trim();
gender=gender_ip.getSelectedItem().toString().trim();
myDB.updateData(id, name, age, gender);
Intent MainActivity =new Intent(UpdateActivity.this,User_activity.class);
startActivity(MainActivity);
}});
delete_btn.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
confirmDialog();
}});
getAndSetIntentData();
}
void getAndSetIntentData(){
if(getIntent().hasExtra("id") &&getIntent().hasExtra("name")
&&getIntent().hasExtra("age")&&getIntent().hasExtra("gender")){
id = getIntent().getStringExtra("id");
name = getIntent().getStringExtra("name");
age = getIntent().getStringExtra("age");
gender = getIntent().getStringExtra("gender");
name_ip.setText(name);
age_ip.setText(age);
gender_ip.getSelectedItem().toString().trim();
}
else {
Toast.makeText(this, "no data", Toast.LENGTH_SHORT).show();
}
}
```

Tracker Module:

Sober day count is the feature that helps the users to have a track on their sober days. when the user clicks on “Set” then the timer starts. User can view his/her sober day count on screen. Whenever he/she gets relapsed then they can use the button “Reset” to stop the

counter .At this time stopper gets stopped and sets to 0.If user wishes to set it again, need to click on “Set” again.

CODE:

```
public void onClick(View v){
switch (v.getId()){
case R.id.btn_risk:
openActivity1();
break;
case R.id.btn_sober:
openActivity2();
break;
}
public void openActivity1(){
Intent intent = new Intent(this, User_activity.class);
startActivity(intent);
overridePendingTransition(0,0);
}
public void openActivity2(){
Intent intent = new Intent(this, Sobriety_tracker.class);
startActivity(intent);
overridePendingTransition(0,0);
}
```

Risk tracker module:

In this module we are calculating risk level based on the amount and type of alcohol consumed using the following formula. In the risk tracker module, the user enters the type of alcohol consumed and Average quantity of alcohol and after clicking on the “Submit” button ethanol content in alcohol and risk level is displayed. If the user clicks on the “Reset” button, information entered by the users will be erased. If the user clicks on the “Find History” button, the app will direct the user to another page and their user can view the average risk level till date.

Risk Level = Average quantity of consumption * ethanol content * density of ethanol

Male	Female	Alcohol risk level
1 to 40 g	1 to 20 g	Low risk
41 to 60 g	21 to 40g	Medium risk
61 to 100 g	41 to 60 g	High risk
101+ g	60+ g	Very high risk

Table 5.1: Risk level chart

Input : Type of alcohol = Gin

Average quantity (per day in ML) = 200

Output : Ethanol Content in Alcohol : 67.85g

Risk level: High Risk

CODE:

```
public void risk_calculation(View v) {
int i = 0;
if (dropdown.getSelectedItem().toString().equals("") ||
dropdown.getSelectedItem().toString().equals("Type of Alcohol")) {
i++;
Toast.makeText(getApplicationContext(), (R.string.Please_select_type_of_Alcohol),
Toast.LENGTH_LONG).show();
dropdown.setFocusable(true);
}
double result = 0;
if (dropdown.getSelectedItem().toString().equals(getString(R.string.Vodka)) &&
!t1.getText().toString().equals("")) {
int t2 = Integer.parseInt(t1.getText().toString());
result = 0.675 * t2 * 0.789;
}
 if (dropdown.getSelectedItem().toString().equals(getString(R.string.Gin)) &&
!t1.getText().toString().equals("")) {
int t2 = Integer.parseInt(t1.getText().toString());
```

```
result = 0.43 * t2 * 0.789;
}

}

.

.
if ((Gender.getText().toString().equals(R.string.male)) {

if (result < 1) {
ethonol_content = result;
Toast.makeText(getApplicationContext(), (R.string.Please_enter_correct_input),
Toast.LENGTH_LONG).show();
t4.setText(R.string.Insufficient_input);
t3.setText("");
}
else if (result >= 1 && result <= 40) {
ethonol_content = result;
t3.setText(R.string.Low_Risk);
t4.setText(String.format(Locale.US, getString(R.string.Ethenol_Content_in_Alcohol) +
"\n %.2f g", result));
}

.

.
}
}
if ((Gender.getText().toString().equals(R.string.female)) {
if (result < 1) {
ethonol_content = result;
Toast.makeText(getApplicationContext(), (R.string.Please_enter_correct_input),
Toast.LENGTH_LONG).show();
t4.setText(R.string.Insufficient_input);
t3.setText("");
}
```

```
else if (result >= 1 && result <= 20) {
ethonol_content = result;
t3.setText(R.string.Low_Risk);
t4.setText(String.format(Locale.US, getString(R.string.Ethenol_Content_in_Alcohol) +
"\n %.2f g", result));
}
.

.
}
if (i == 0) {
DB = new DataBase_saver(this);
String Id = User_id.getText().toString();
String gen = Gender.getText().toString();
String type_of_alcohol = dropdown.getSelectedItem().toString();
int quant = Integer.parseInt(t1.getText().toString());
Long timestamp = System.currentTimeMillis() / 1000;
DB.insertuserdata(Id, gen, type_of_alcohol, quant, timestamp, ethonol_content);
}
}
```

Average Quantity Calculation :

In the average calculation function, average ethanol consumption and risk level is calculated. So that person can find his previous alcohol consumption.

Input : 1. Type of alcohol = Gin
Average quantity (per day in ML) = 150
Ethanol content in alcohol = 50.49 g
2. Type of alcohol = Whiskey
Average quantity (per day in ML) = 100
Ethanol content in alcohol = 33.93 g
3. Type of alcohol = Brandy
Average quantity (per day in ML) = 200
Ethanol content in alcohol = 73.96 g

Output : Average Risk level till date : Medium Risk (53g)

CODE:

```
if(Gender.getText().toString().equals(R.string.male))
{
Double new_avg = 0.0;
ArrayList<Double> average = DB.average_ethonol(User_Id.getText().toString());
int i;
for(i = 0;i<average.size();i++ )
{
new_avg = new_avg + average.get(i);
}
new_avg = new_avg/ average.size();
String risk_level = null;
if (new_avg>= 1 &&new_avg<= 40) {
risk_level = getString(R.string.Low_Risk);
}
else if (new_avg>= 41 &&new_avg<= 60) {
risk_level = getString(R.string.Medium_Risk);
}

 •


 •
 }
(R.string.Dont_drink_be_sober_You_can_do_it),Toast.LENGTH_LONG).show();
 }
```

Sobriety Tracker Module:

This module calculates sobriety period. In the sobriety tracker module, the user sets the timer by clicking the "Submit" button. When the user clicks the "Sober day count" button, the sobriety period is displayed. Users can reset the timer by clicking on the "Reset" button and the motivational quote will be displayed after reset.

Input : Click "Set" button
Output : Timer starts, "Timer is set" toast will be displayed.
Input : Click "Sober Day Count" button

Output : Sobriety period is displayed.

Input : Click “Reset” button

Output : Timer stops and Motivational quote will be displayed.

CODE:

```
void calculate_time(long sys, long cur)
{
Context context1 = getApplicationContext();
CharSequence text = "Timer is Reset";
int duration = Toast.LENGTH_SHORT;
Toast toast1 = Toast.makeText(context1, text, duration);
toast1.show();
Long cal = cur - sys;
String cal_string = cal.toString();
tview.setText("");
if (cal>= 120) {
t1view.setText(getString(R.string.Forget_whats_gone));
}
else if (cal> 0) {
t1view.setText(getString(R.string.Dont_drink_be_sober_You_can_do_it));
}
}
```

Trigger Avoidance Module:

In this module users can get their preferred audios and videos list for avoiding themselves from the relapse. In this module if the user clicks on the “audio” button then the user gets a list of audios in the selected language. If the user clicks on the “video” button then the user gets a list of videos.

CODE:

```
audio_btn.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
```

```
Intent MainActivity =new Intent(anv.this,Avoidance_select3.class);
startActivity(MainActivity);
}});

video_btn.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
 Intent MainActivity1 =new Intent(anv.this,Avoidance_select4.class);
startActivity(MainActivity1);
}});
```

Audio Module:

Audio module comes in the Avoidance component,this helps the user to maintain his/her concentration. Some of the selected songs and motivated audios are added in this module. There are 4 sub-categories in this module,Bhajans, Atmavalokana talks, Motivational audio clips, and Prayer talks.There are some selected audios which are preferred by J.J.Vedike.These helps the user to keep him motivated towards his goal.

CODE:

```
btn_bajan.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
Intent bhaj=new Intent(Avoidance_select.this,BhajanActivity.class);
startActivity(bhaj);
}});

btn_motiv.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
Intent motiv=new Intent(Avoidance_select.this,AudioMotivationalActivity.class);
startActivity(motiv);
}});
btn_prayer.setOnClickListener(new View.OnClickListener() {
@Override
```

```
public void onClick(View v) {
Intent pray=new Intent(Avoidance_select.this,AudioPrayerActivity.class);
startActivity(pray);
}});
btn_atma.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
Intent pray=new Intent(Avoidance_select.this,AudioAtmavalokanaActivity.class);
startActivity(pray);
}});
```

Atamavalokana Talks, Bhajans, Prayer and Motivational Speech Audio module:

These are the subcategories of the Audio module. These contain some selected audio clips and songs.These are preferred by J.J.Vedike. These have a ‘play’ button the user needs to click on to play the audio. Users can change the songs whenever they wish.

CODE:

```
public void loadTracks(){
trackList = new TrackModel[]{
new
TrackModel(R.raw.swayam_motivation,getString(R.string.swayam_motivation),false),
new
TrackModel(R.raw.always_take_challenges,getString(R.string.always_take_challenges),f
alse),
new
TrackModel(R.raw.accept_your_mistakes,getString(R.string.accept_your_mistakes),false
),
new TrackModel(R.raw.mentally_strong,getString(R.string.mentally_strong),false)};
adapter = new TrackAdapter(AudioAtmavalokanaActivity.this,trackList);
listView.setAdapter(adapter);
adapter.notifyDataSetChanged();
}
```

Video Module:

Video module comes in the Avoidance component,this helps the user to keep themselves motivated. It contains 3 subcategories, Bhajans, Atmavalokhana talks and Prayer talks. Each of them consists of several video clips.

CODE:

```
video_bhajan.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
Intent bhajan=new Intent(Avoidance_select_video.this, Bhajan_1.class);
startActivity(bhajan);}
});
video_atma.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
Intent atma=new Intent(Avoidance_select_video.this, Atmavalokana_talks1.class);
startActivity(atma);
}});
video_prayer.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View v) {
Intent pray=new Intent(Avoidance_select_video.this, Prayer_video.class);
startActivity(pray);
}});
```

SDM Project Officer Module:

This module comes under the Helpline component. SDM Project Officer module is specifically designed for SDM, where project officers are assigned with particular districts. On selecting the districts based on selected districts assigned project officers contact details gets visible (Name, contact number). On clicking the button “Call”, the call gets connected to the project officer.

CODE:

```
public void getsdmdetail() {
if (getString(R.string.Bagalkot).equals(destination)) {
Person1 = getString(R.string.name1);
contact1 = "XXXXXXXXXX";     // Phone number
Person2 = getString(R.string.name2);
contact2 = "XXXXXXXXXX";
}
else if (getString(R.string.Belagavi).equals(destination)) {
Person1 = getString(R.string.name1);
contact1 = "XXXXXXXXXX";
Person2 = getString(R.string.name2);
contact2 = "XXXXXXXXXX";
}
.
.

textResult.setText(String.valueOf(Person1));
person1.setText(String.valueOf(contact1));
textResult2.setText(String.valueOf(Person2));
person2.setText(String.valueOf(contact2));
}
```

Doctors Details Module:

This module comes under the Helpline component. In this module psychiatrist's details are fed. Based on the selected districts psychiatrist's details(Name, Contact number) from the selected district will be displayed. On clicking the button "Call", the call gets connected to the project officer.

CODE:

```
public void getdtrdetails() {
if (getString(R.string.Chikkamagaluru).equals(destination)) {
Person1 = getString(R.string.name);
contact1 = "XXXXXXXXXX";
addr1 = getString(R.string.address);
time1 = getString(R.string.time);
```

```
Person2 = getString(R.string.name2);
contact2 = "XXXXXXXXXX";
addr2 = getString(R.string.adress2);
time2 = getString(R.string.time2);
}
else if (getString(R.string.Dharwad).equals(destination)) {
Person1 = getString(R.string.name1);
contact1 = "XXXXXXXXXX";
addr1 = getString(R.string.adress2);
time1 = getString(R.string.time2);
Person2 = getString(R.string.name2);
contact2 = "XXXXXXXXXX";
addr2 = getString(R.string.address);
time2 = getString(R.string.time);
}
.
.
person1.setText(String.valueOf(Person1));
textResult1.setText(String.valueOf(contact1));
address1.setText(String.valueOf(addr1));
timing1.setText(String.valueOf(time1));
person2.setText(String.valueOf(Person2));
textResult2.setText(String.valueOf(contact2));
address2.setText(String.valueOf(addr2));
timing2.setText(String.valueOf(time2));
}
```

6.TESTING

6.1 Performance Testing

Table 1: Performance test plan

Test id	**Input Description**	**Expected output**	**Actual output**
1.	Open the app on an android device.	Application opens within 3 seconds.	The application starts within 3 seconds.
2.	Click on button to set the language	App contents should display in the selected language.	App contents displayed in the selected language
3.	On click on any one of the four components	Selected component should open.	Selected component Opened.
4.	Select any icon on the navigation bar.	Selected components should display.	Selected Component displayed.

Table 6.1: Performance test plan

6.2 Installation Testing

Table 2: Installation Testing:

Test id	Input Description	Expected output	Actual output
1	Android device with version greater than 7.	The app should run properly.	App supported on the devices with version greater than 7.

Table 6.2: Installation test plan

6.3 Usability Testing

Table 2: Usability Testing:

Test id	Input Description	Expected output	Actual output
1.	Press the submit button without filling the required details.	Application should not open the next page.	Application does not redirect to the next page if details are not filled properly.
2.	click on video buttons without the internet.	videos should not appear till the app get connected	videos are not accessible.

Table 6.3: Usability test plan

7. RESULTS AND DISCUSSIONS

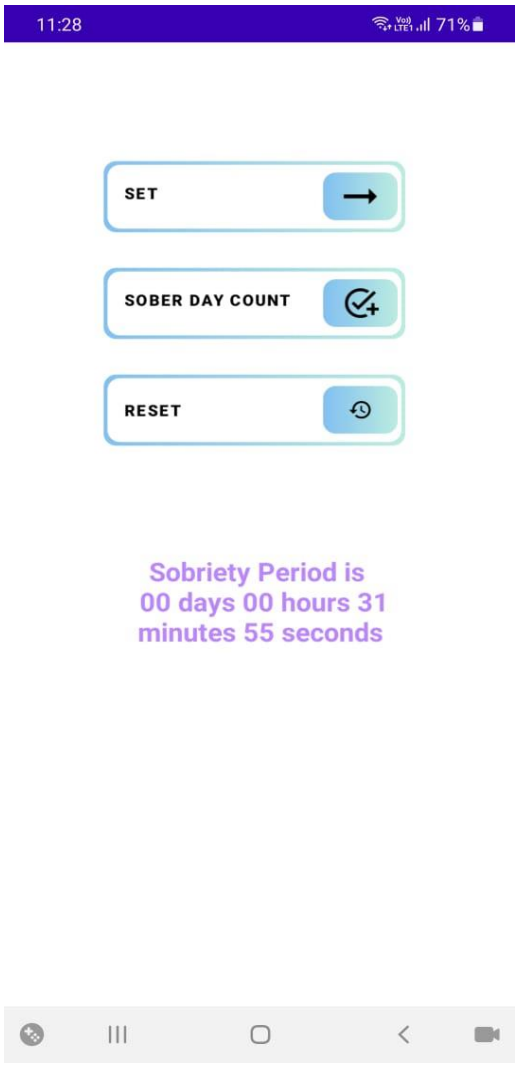
Fig 7.1: Updates

Fig 7.2: Select Language

The figure Fig 7.1 Updates is an update component where people can get SDM camp related details.

Admin can add these posts to help the people to send the details regarding the camp start dates and other updates.

This app is available in 5 languages where users can set their preferred language. The picture Fig 7.1 Select Language shows the button to select the language



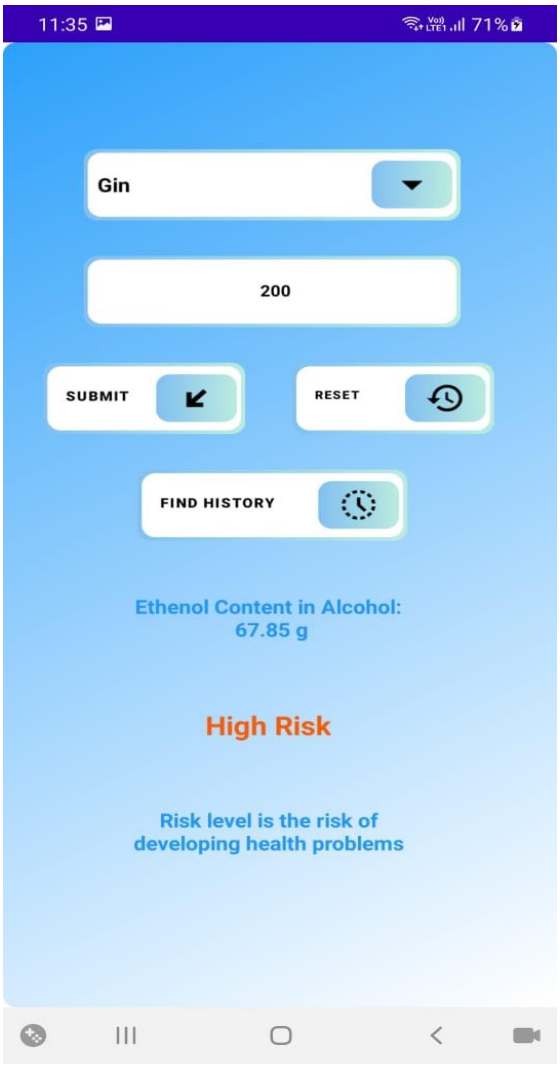


Fig 7.3: Sober day counter

Fig 7.4: Risk calculator

A sobriety tracker (Sober day counter) helps in finding the sober day count of a person based on the timer set time. one can see their sober count by clicking on the sober day count button. Helpline helps in finding doctor details and direct calls can be done in the app by clicking on the call button icon in the app.

The Risk calculator(Fig 7.4) has two fields where the user should enter alcohol type and quantity consumed per day. On submit it gives the risk level of a person and also can check previous alcohol consumption on average.

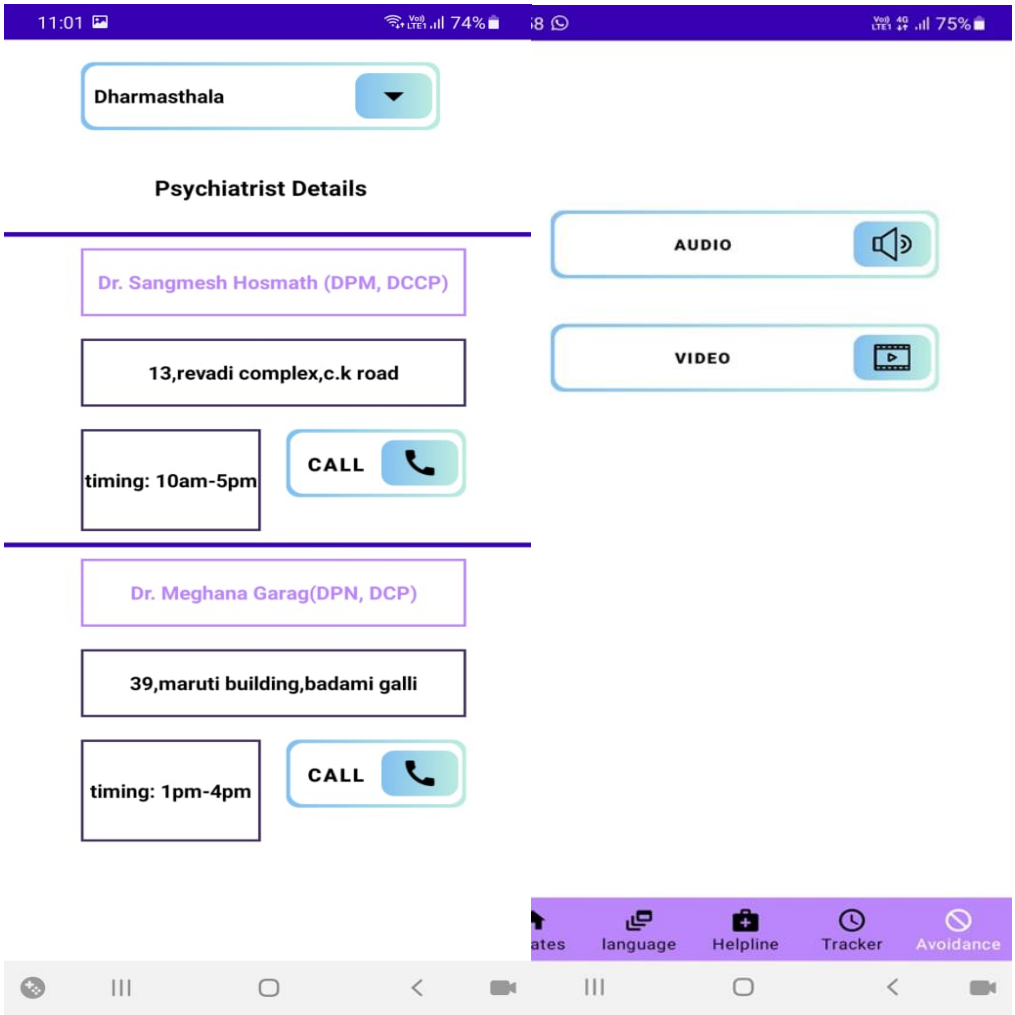


Fig 7.5: Helpline Fig 7.6: Trigger avoidance

This Fig 7.5helps to find the doctor's contact details and timing. so users can directly call through this app by clicking on the call button.

This Fig 7.6 explains if the user clicks on the “audio” button then the user gets a list of audios(Fig 7.7) in the selected language. If the user clicks on the “video” button then the user gets a list of videos(Fig 7.8).

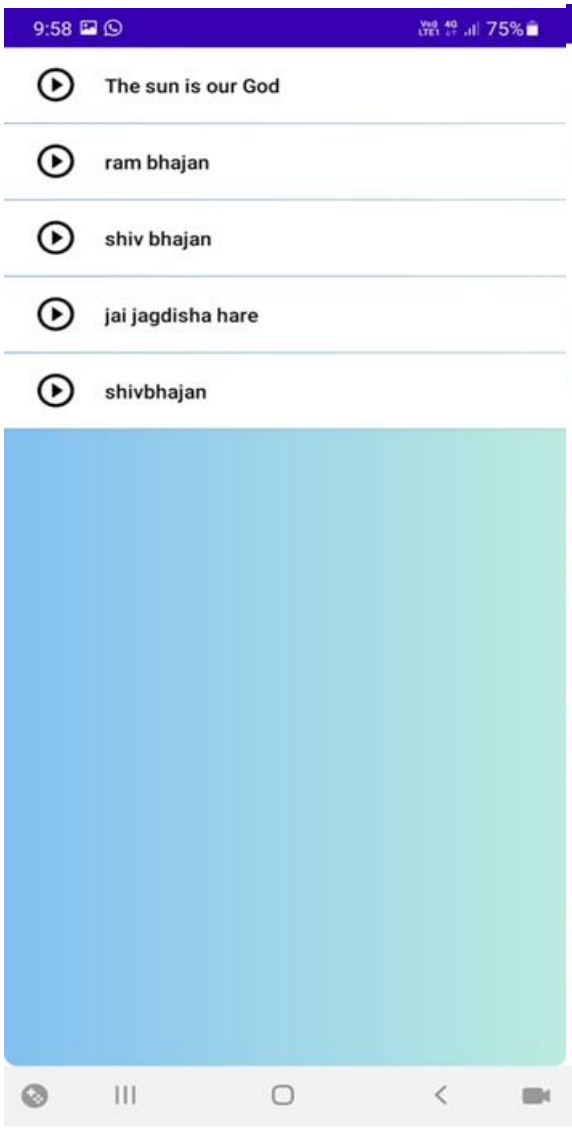


Fig 7.7: Audio list

Fig 7.8: Video list

In Fig 7.7 user can play any audio and in Fig 7.8 user can play any video from the list by clicking on it.

8. CONCLUSION AND FUTURE SCOPE

Conclusion:

The main aim of this project is to help the alcoholics in avoiding alcohol consumption and the sober to lead a life by overcoming the triggers through this app. App is available in different languages so that users can set the app in their preferred language. This mainly helps the rural people to comfort with the usage of the app. The app provides different components like Sobriety tracker, Risk tracker, Helpline, Feed, and Trigger avoidance components.

Future scope:

The application can have one more component where a person can add his/her triggering points and can choose the way to overcome the trigger.

In the application calculation of sober days in years can also be done.

9. Bibliography

[1]WHO report https://timesofindia.indiatimes.com/india/alcohol-kills-2-6l-indians-every-year-who-report/articleshow/65917785.cms Sep 23,2018

[2] Rates and predictors of relapse after natural and treated remission from alcohol use disorders https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1976118/ Feb 2006

[3] Types of triggers https://www.gatehousetreatment.com/internal-relapse-triggers-vs-external-relapse-triggers/

10.Appendix

A. Gantt Chart

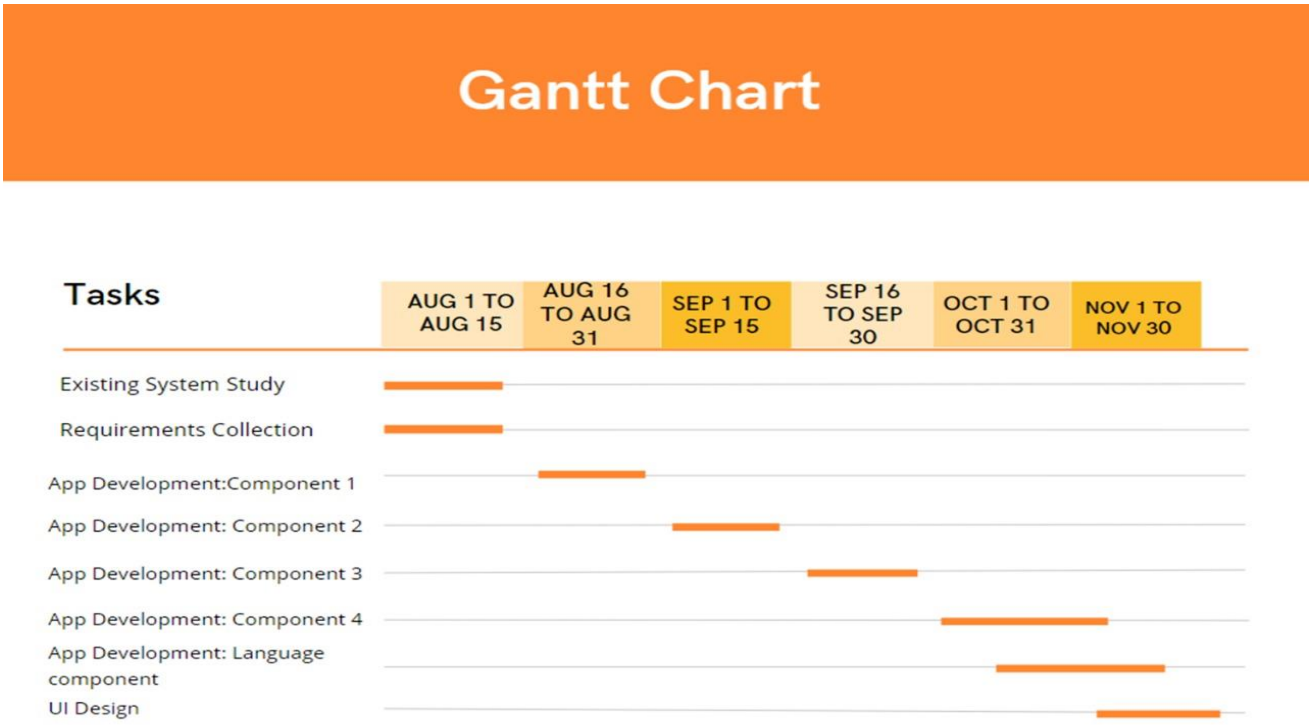


Fig 10.1: Gantt chart

B. Glossary

1. Sober: One who quits alcohol.
2. Relapse: Addicting to alcohol again after avoiding it for a period of time.
3. J.J Vedhike: A trust from SDM Ujire that conducts camps all over Karnataka which Treats the alcoholic people and make them sober.
4. Updates: Posts (information) posted by admin

C. Description of Tools & Technology used

- Android studio 2020.3.1 (Arctic Fox): To write the program. We wrote our program in java.
- We used a firebase database which lets us store and sync data between the users in real time.
- SDK Tool(Emulator): To test the application.