CSE4002/SWE4003: MOBILE APPLICATION DEVELOPMENT

A Project Report on

AWAT - A MULTI PURPOSE ALERT SYSTEM

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1. Introduction

People nowadays are busier than ever, with a job load that never stops as long as we can keep up with it. As a result, many individuals assume that in order to make their routine more efficient and productive, they need their own personal assistant to help them schedule tasks. A career man or even a student needs more than 24 hours every day. This is due to the fact that individuals must know what to do at all times because they cannot "turn back time." To avoid wasting time, they should prepare ahead and schedule what we will be doing.

It's similar to a Personal Organizer in that it's a diary-sized volume with a variety of features. People are required to write our plans in the Personal Organizer, along with any necessary little notes, but the Personal Organizer does not remind them as long as they open the Personal Organizer on a regular basis.

People overlook critical tasks that must be completed on a specific day and at a specific time. This is due to today's hectic work schedule. In this chaotic circumstance, our AWAT app is quite helpful. Users may set reminders for a specific day and time with this application. The AWAT app also has a to-do list that allows users to keep track of their chores that must be completed. Percentage of student attendance in the classroom is one of the parameters to increase the standard of education in addition to result and quality of teaching etc. The students can also browse the important links related to the college through this application. Our application assists users in time management and helps them to make their day more productive.

2. Literature Survey

In a previous way, the student had to look at the content in a printed copy or on a website. Unless the counsellor or teacher informs him, he won't know if his attendance falls below the required level. The student must remember or check the book for the renewal date in order to renew the book.

We propose an Android-based mobile application that will help both students and employers in this study. They may monitor their attendance and receive reminders when their tasks are completed. The student can also know the recent updates in the college and also can browse directly to the important links of the college.

To keep track of attendance, a variety of apps have been developed.

Dhiman Kumar Sarkar, Nafeez Shateque Hossain, and Insan Arafat Jamil offered a C#-based application that included radio frequency identification, biometric fingerprint sensor, and password-based technologies. Only the Windows operating system, which is rarely used in smartphones, is supported by this programme.

Jun lio suggested a system for managing attendance using mobile devices and online services. He developed a way in which a student may select between registering by selfie or registering by signature to record attendance, however there is no reminder mechanism in this methodology.

Our programme features a simple UI that alerts you on the scheduled task's due date.

Yu Xiang analysed the capabilities of several attendance check techniques, such as the One-stop Attendance and Absent System, concurrent check, proxy attendance, and movement prevention.

In their paper, A.J. Kadam, Aradhana Singh, Komal Jagtap, and Srujana Tankala suggested an application to handle student information in a college. This programme has the advantages of being mobile, secure, and less prone to errors.

3. Problem statement

As it is constructed together in Personal Data Assistant, a typical Personal Organizer is built for people who make a conscious effort to have one (PDA). As we all know, a PDA is extremely costly, and it is only ideal for persons who work in the business world. Some traditional Personal Organizers, such as Diary, are no longer useful since they still require paper and cannot effectively manage your chores. This is because you must keep the Personal Organizer with you at all times to remind you of what you need to accomplish.

Similarly, even if you have a Personal Organizer installed on your computer, it will not perform well since we do not always sit in front of the computer to ensure that we are aware of upcoming deadlines. Personal organizers are lacking in valuable extra features and have limited functionality. Many personal organizers on the market today are unsuitable for students, requiring high specifications and being difficult to use. Despite the fact that mobile phones had their own reminder function, their storage space was limited, and they couldn't do much more chores than before.

A reminder will be sent to the user at the time of the task reminding them of all the tasks that have been planned.

4. Objective

Many individuals are preoccupied with their hectic lives and routines. Our goal is to make it easier for people to get more done in less time. Many people wonder what makes our project different from the standard Reminder app available on iOS and Android. Our software includes a Task Notifier, Attendance Counter (Useful for Students and Working Professionals), To-Do List, and Professional Site In-App Browser, allowing users to work more efficiently with all of the features in one place.

5.**Feasibility study:**

This project is Economically Feasible because the softwares used in this project are free of cost to work with them. This application can cope up with all the hardware which has a min of android 5(lollipop) and this is very easy to use so this software is Technically Feasible. The UI of this application was designed in a very user-friendly way, which makes the user feel free to understand and make use of this application more and more, so to use this application the users no need to be trained so this application is Operational Feasible.

6. Functional and Non-Functional requirements

Functional Requirements:

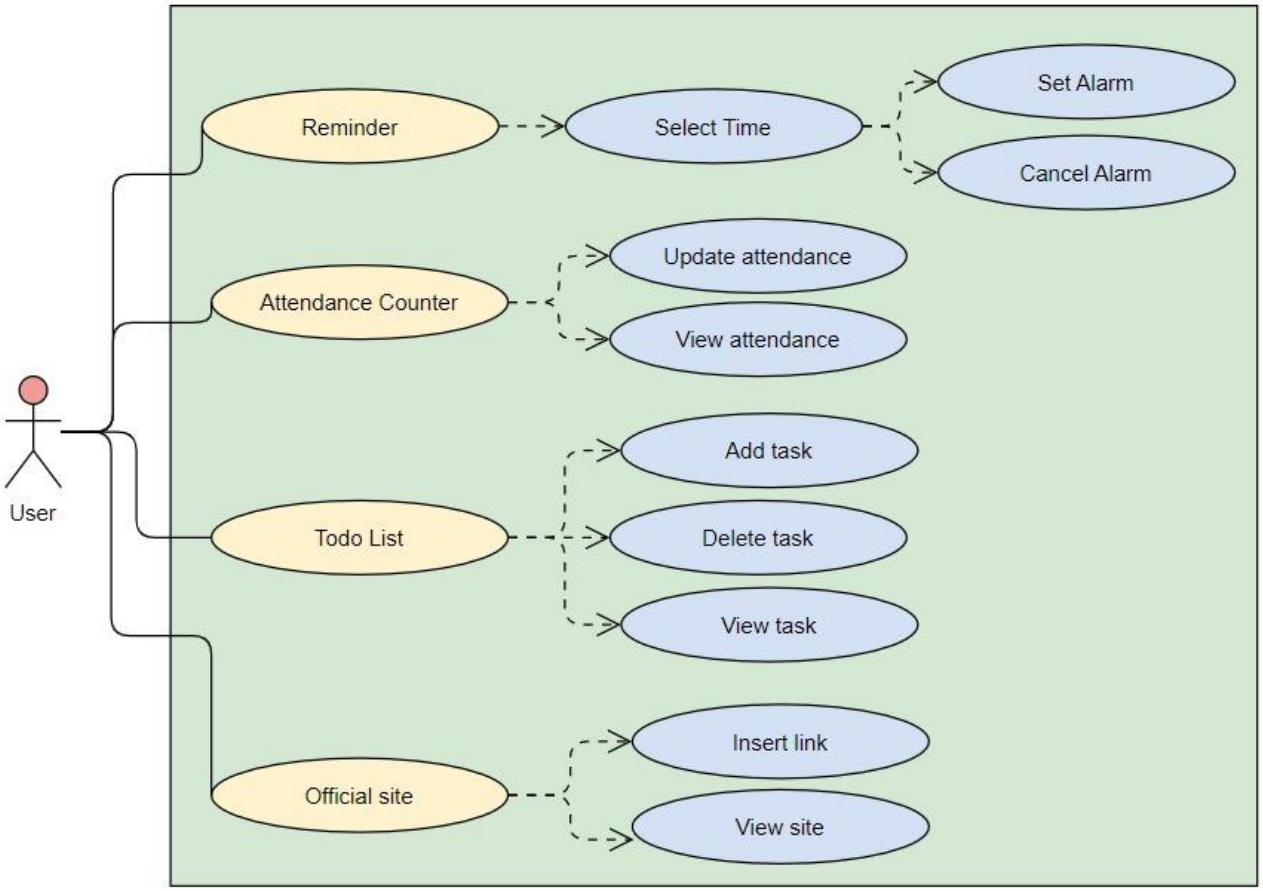
- The app should allow for notifying reminders on time.
- Users should be able to see their to-do list outcomes on the app.
- If Users add or delete the to-do task, the app should be able to add and delete them respectively.

Non-Functional Requirements

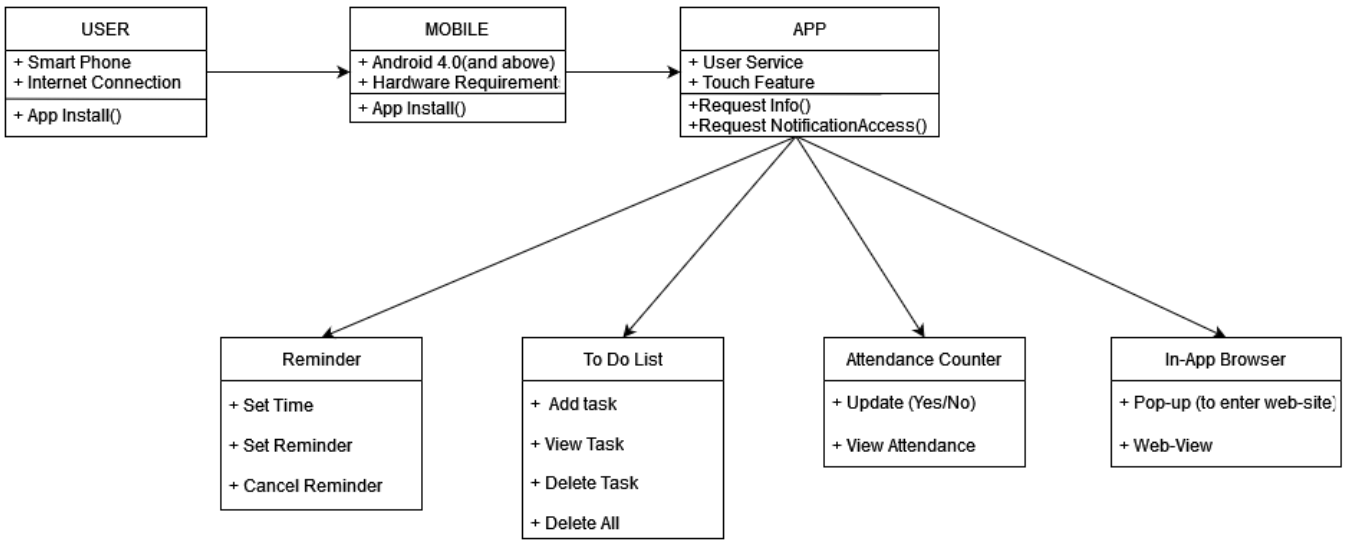
- **Performance:** The app should respond in a fair amount of time. Users should be able to add reminders, to-do list and receive responses to their queries in two to three seconds
- **Usability:** The system will have a decent user interface with more interactive forms, making it usable by the users.
- **Reliability:** The system will be operational 24 hours a day, seven days a week, guaranteeing that information is provided on time.

7.Methodology and Design

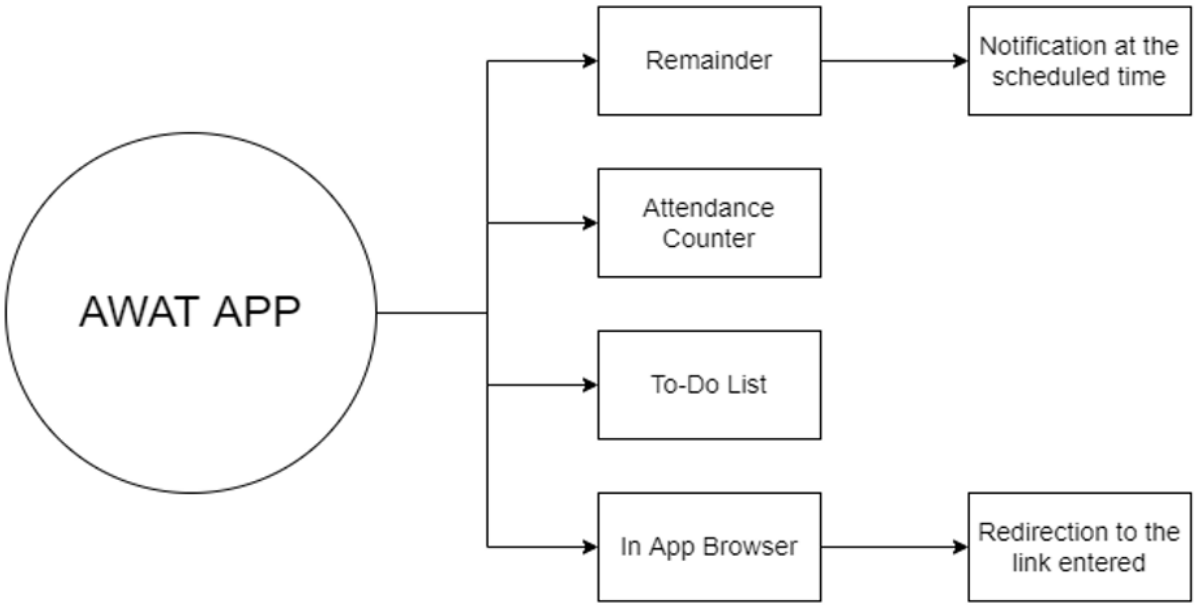
7.1 Use Case diagram



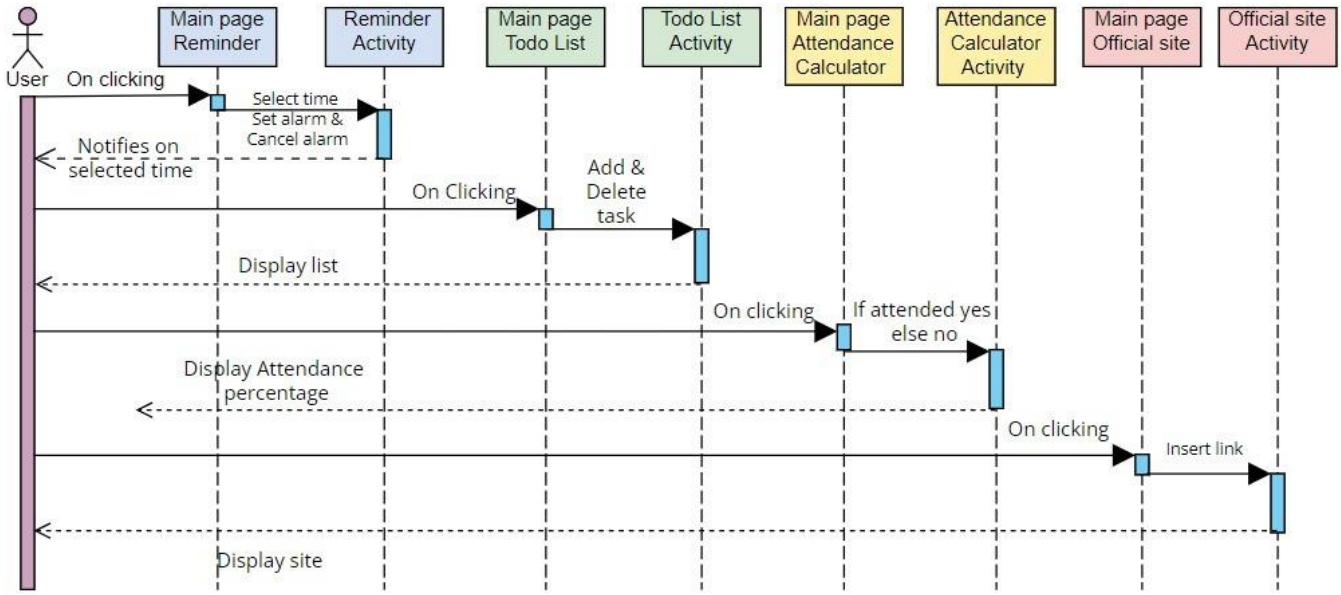
7.2 **Class diagram**



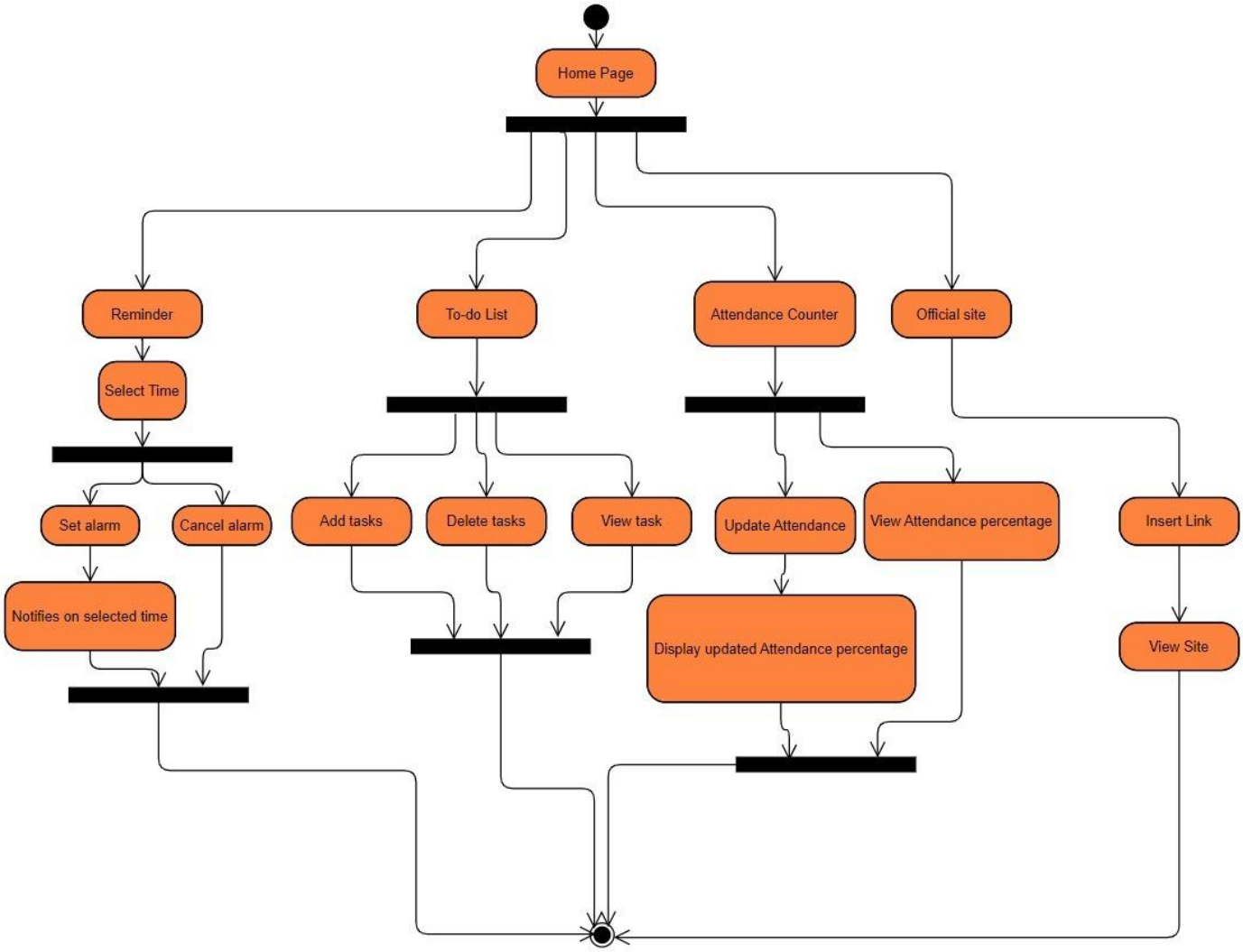
7.3 **Data Flow Diagram**



7.4 **Sequence diagram**



7.5 **Activity diagram**



8. Code Samples:

MainActivity.java:

```
package com.example.awat;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {
    Button btn1,btn2,btn3,btn4;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        btn1=(Button) findViewById(R.id.calBTN);
        btn2=(Button) findViewById(R.id.attCalBTN);
        btn3=(Button) findViewById(R.id.toDoBTN);
        btn4=(Button) findViewById(R.id.webSiteBTN);
        btn1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent=new Intent(MainActivity.this,MainActivityCal.class);
                startActivity(intent);
            }
        });
        btn2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent=new Intent(MainActivity.this,MainActivityACal.class);
                startActivity(intent);
            }
        });
        btn3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent intent=new Intent(MainActivity.this,MainActivityToDoList.class);
                startActivity(intent);
            }
        });
        btn4.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
```

```
                Intent intent=new Intent(MainActivity.this,MainActivityWebSite.class);
                startActivity(intent);
            }
        });
    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        MenuInflater inflater;
        inflater=getMenuInflater();
        inflater.inflate(R.menu.home_menu,menu);
        return true;
    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        if(item.getItemId()==R.id.itemFeedBack){
            Intent intent=new Intent(this,MainActivityFeedBack.class);
            startActivity(intent);
        }
        return true;
    }
}
```

MainActivityWebsite.java:

```
package com.example.awat;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.content.DialogInterface;
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.webkit.WebView;
import android.webkit.WebViewClient;
import android.widget.EditText;
import android.widget.TextView;

import java.net.MalformedURLException;
import java.net.URL;

public class MainActivityWebSite extends AppCompatActivity {
    WebView wv;
    String url="";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main_web_site);
        LayoutInflater li = LayoutInflater.from(this);
        View promptsView = li.inflate(R.layout.prompts, null);
        wv=(WebView) findViewById(R.id.WebView);
        if(url.isEmpty()){
            AlertDialog.Builder alertDialogBuilder = new AlertDialog.Builder(this);

            alertDialogBuilder.setView(promptsView);

            final EditText userInput = (EditText) promptsView
                    .findViewById(R.id.editTextDialogUserInput);

            alertDialogBuilder
                    .setCancelable(false)
                    .setPositiveButton("OK",
                            new DialogInterface.OnClickListener() {
                                public void onClick(DialogInterface dialog,int id) {

                                    url=userInput.getText().toString().trim();
                                    wv.getSettings().setJavaScriptEnabled(true);
                                    wv.setWebViewClient(new WebViewClient());
                                    try {
                                        wv.loadUrl(String.valueOf(new URL(url)));
                                    } catch (MalformedURLException e) {
                                        e.printStackTrace();
                                    }
```

```
                                }
                            })
                    .setNegativeButton("Cancel",
                            new DialogInterface.OnClickListener() {
                                public void onClick(DialogInterface dialog,int id) {
                                    dialog.cancel();
                                }
                            });
            AlertDialog alertDialog = alertDialogBuilder.create();
            alertDialog.show();
        }
    }
}
```

activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#D3D3D3"
    tools:context=".MainActivity">

    <LinearLayout
        android:id="@+id/linearLayout"
        android:layout_width="395dp"
        android:layout_height="210dp"
        android:orientation="horizontal"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.193">

        <LinearLayout
            android:layout_width="197.5dp"
            android:layout_height="200dp"
            android:orientation="horizontal"
            android:padding="10dp">

            <Button
                android:id="@+id/calBTN"
                android:layout_width="wrap_content"
                android:layout_height="match_parent"
                android:layout_weight="1"
                android:text="REMINDER"
                android:textColor="#005A39"
                android:textSize="20sp"
                app:backgroundTint="#46033C43" />
        </LinearLayout>

        <LinearLayout
            android:layout_width="199dp"
            android:layout_height="200dp"
            android:orientation="horizontal"
            android:padding="10dp">

            <Button
                android:id="@+id/attCalBTN"
                android:layout_width="wrap_content"
                android:layout_height="match_parent"
                android:layout_weight="1"
```

```
            android:text="ATTANDANCE COUNTER"
            android:textColor="#005A39"
            android:textSize="20sp"
            app:backgroundTint="#46033C43" />
    </LinearLayout>

</LinearLayout>

<LinearLayout
    android:layout_width="395dp"
    android:layout_height="230dp"
    android:orientation="horizontal"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/linearLayout"
    app:layout_constraintVertical_bias="0.0">

    <LinearLayout
        android:layout_width="197.5dp"
        android:layout_height="200dp"
        android:orientation="horizontal"
        android:padding="10dp">

        <Button
            android:id="@+id/toDoBTN"
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:layout_weight="1"
            android:paddingLeft="5dp"
            android:paddingRight="5dp"
            android:text="TO DO LIST"
            android:textColor="#005A39"
            android:textSize="20sp"
            app:backgroundTint="#46033C43" />
    </LinearLayout>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="200dp"
        android:orientation="horizontal"
        android:padding="10dp">

        <Button
            android:id="@+id/webSiteBTN"
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:layout_weight="1"
            android:paddingLeft="5dp"
            android:paddingRight="5dp"
            android:text="IN-APP BROWSER"
            android:textColor="#005A39"
```

```
                android:textSize="20sp"
                app:backgroundTint="#46033C43" />
        </LinearLayout>

    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

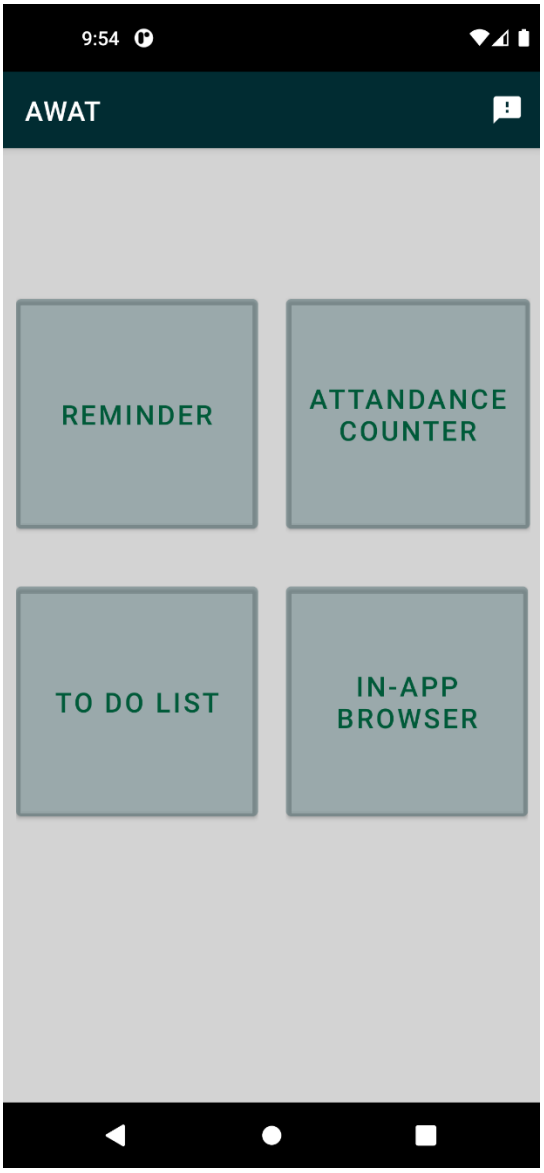
activity_main_web_site.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#535353"
    tools:context=".MainActivityWebSite">

    <WebView
        android:id="@+id/WebView"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:foregroundGravity="center"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

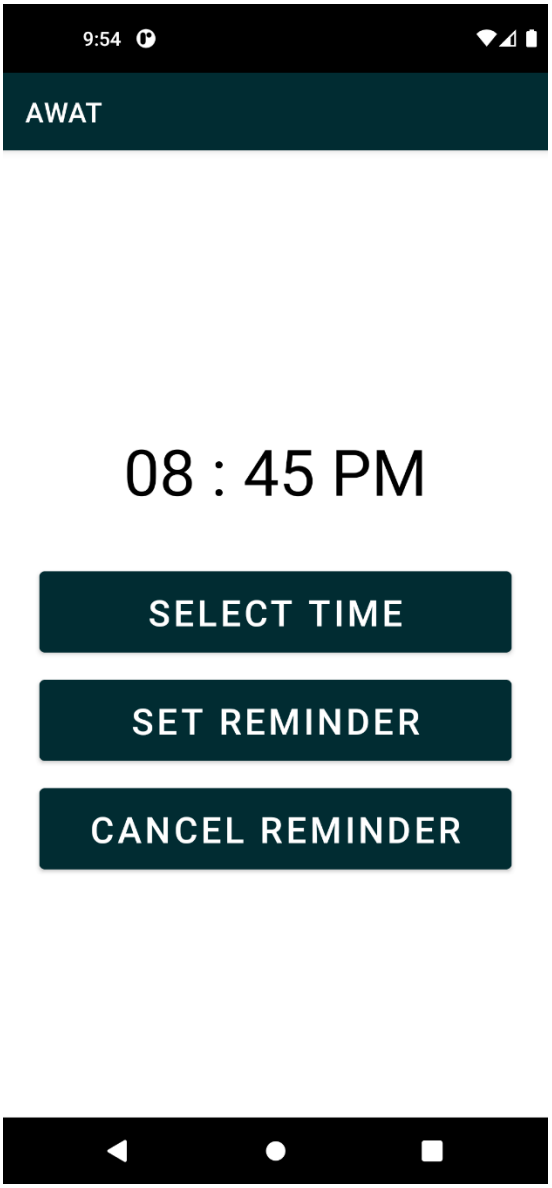
prompts.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/layout_root"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:orientation="vertical"
    android:padding="10dp" >

    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Please Enter the link of the Web-site : "
        android:textAppearance="?android:attr/textAppearanceLarge" />

    <EditText
        android:id="@+id/editTextDialogUserInput"
        android:layout_width="match_parent"
        android:inputType="textPersonName"
        android:layout_height="wrap_content" >

        <requestFocus />

    </EditText>

</LinearLayout>
```

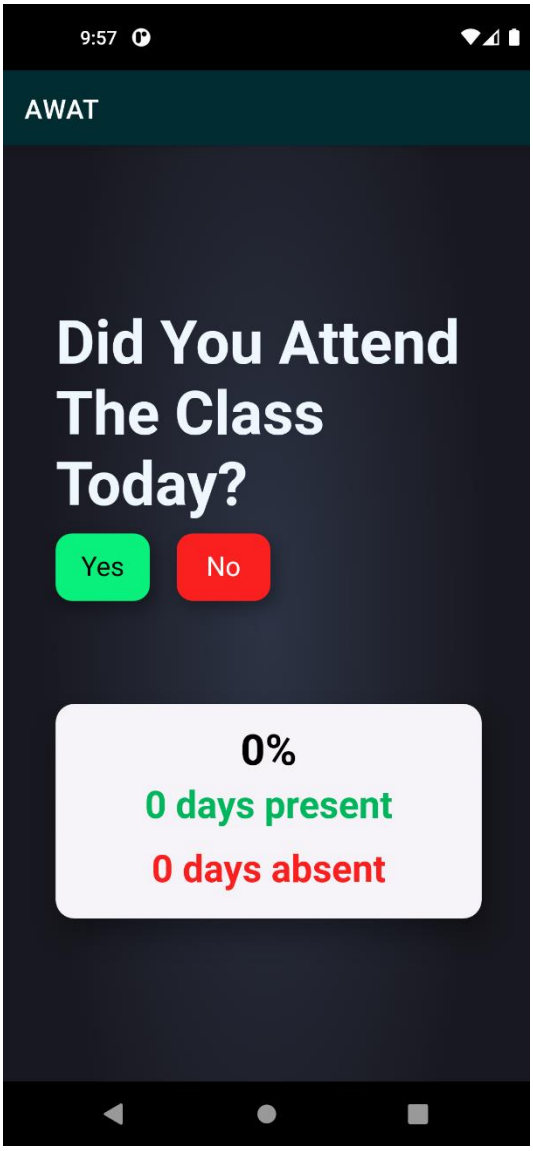
9.Results discussion (FULL-DEMO SNAPSHOTS)



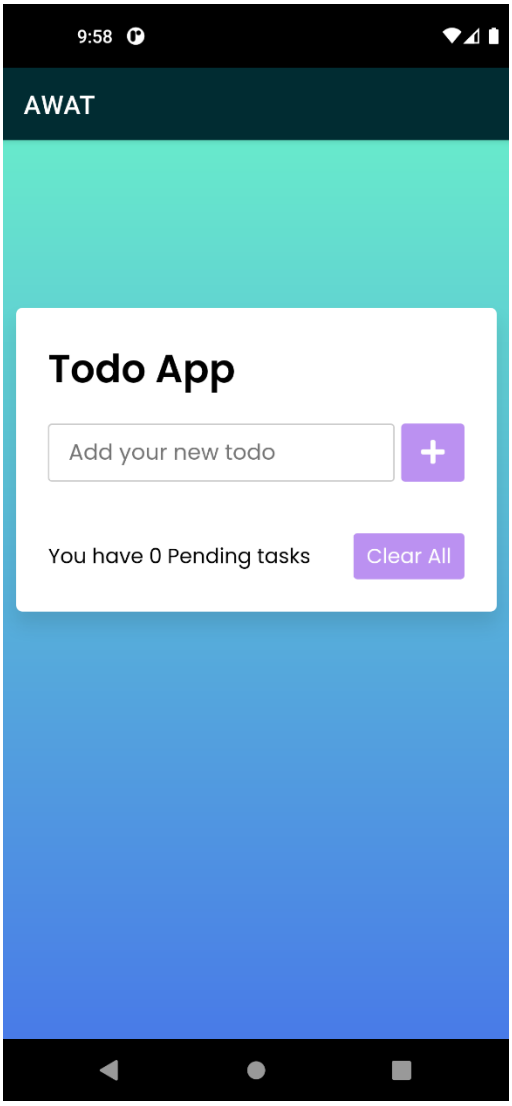
This is the Landing Page of The App.



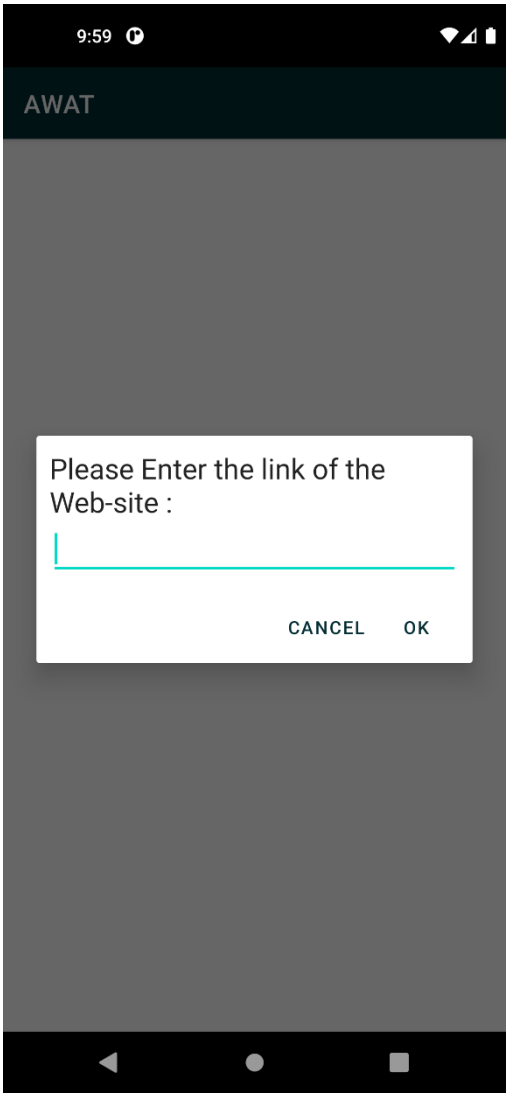
This is the Screen inside the Reminder Tab. On Selecting the time and then after we click the Set Reminder Tab, the user can see a notification at the desired time.



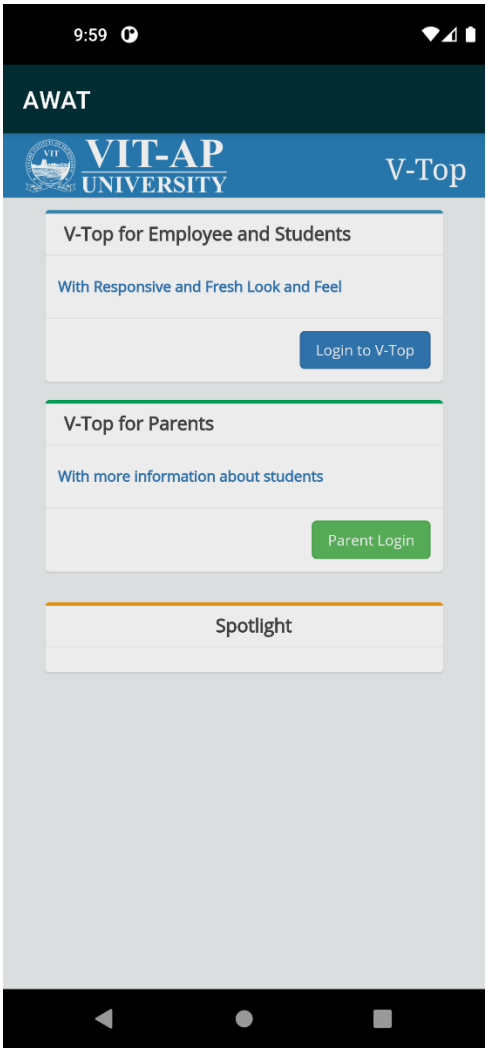
This is how the screen inside the attendance counter looks like. The option to update the attendance will be available for once in every 24Hrs.



This is how the Screen inside the to-do list appears. You Can Add All Your Tasks, Delete Them, View Them.



Screen Inside the In-App browser appears as this. Once You Enter The link, it will open inside the app.



After I Entered the link of a website, it’s visible as this.

10. **Future Scope**

In Future, we may automate the app by designing and implementing an API, so that the student need not update every task manually and we may also implement an alarm system, with different levels such as Very Urgent, Urgent, Need To be done at the earliest.

We may also create a progress bar to assist users in keeping track of their completed tasks. The progress bar may help the user to determine how productive he is.

If this app is suitable for most user groups, this app can be later launched on Play store, Microsoft Store and an iOS Version of the app can be made or we may even make a Cross-Platform Application of this with further enhancements.

11. **References and Resources:**

- https://developer.android.com/docs
- https://stackoverflow.com
- https://github.com/gvssaimadhav/AWAT
- https://drive.google.com/drive/folders/1RUQ0VRy4VpM8hvF6BxgNyk2QOijTdPnB?usp=sharing