KLE Society's

COLLEGE OF BACHELOR COMPUTER APPLICATIONS

(Autonomous)

R. L. SCIENCE INSTITUTE, BELAGAVI.

Project Report on

STUDENT ATTENDANCE APP

Under theGuidance of

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Submitted By

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١. INTRODUCTION

The ATTENDACE-EASE

The ATTENDACE-EASE app provides a streamlined interface، ensuring that administrative tasks and classroom management are efficient and user-friendly. The separation of roles between the Admin and Faculty modules helps maintain a clear structure and secure access to sensitive information. This Android attendance application for teachers consists of two primary modules: 'Admin' and 'Faculty.'

Creating a student attendance app involves developing a platform that allows educators to easily record، track، and manage student attendance. This kind of app is typically used in schools، colleges، and other educational institutions to streamline the attendance process and ensure accurate records.

The Student Attendance App is a modern، efficient tool designed to simplify the management of attendance records in educational institutions. With the increasing need for accurate and real-time data in education، this app offers a user-friendly solution for teachers، administrators، and students.

١.١ PROJECT DESCRIPTION

Admin Module:
The Admin module is designed for administrative staff who manage the overall system. Admins have the ability to:

- Add and Manage Students: They can input new student data, update existing records, and manage student profiles.
- Add and Manage Faculty: This includes adding new faculty members, updating their information, and managing their access.
- View Records: Admins can access and review comprehensive records of both students and faculty.

Faculty Module:
The Faculty module is tailored for teachers and other educational staff.
Features include:

- View StudentInformation: Faculty members canaccessstudentdetails, which are useful for tracking attendance and performance.
- Maintain Attendance: This allows teachers to mark student attendance, view attendance history.

The app provides a streamlined interface, ensuring that administrative tasks and classroom management are efficient and user-friendly. The separation of roles between the Admin and Faculty modules helps maintain a clear structure and secure access to sensitive information.

٢.١ Existing System:

•There are applications that does not have separate modules for different uses.

• The existing applications can only maintain student attendance.

Proposed System:

• This application has dedicated two different modules with different functionalities.

• Here faculty can see the attendance with specific date, and can also see the timetable of the faculty.

. Only the Admin has the authority to add student and adc

٢.٢ Tools And Technology Used:

System Requirements:

١. Android Development (Java)

• Java: The primary programming language used for Android app development. Java provides the core logic and functionality of the app.

• Android Studio: The official Integrated Development Environment (IDE) for Android development, which includes a code editor, debugging tools, and an emulator for testing.

٢. SQLite: SQLite is a Built-in lightweight, relational database management system (RDBMS) that is embedded directly into the end program, unlike traditional database systems that use a client-server model. It is widely used in Android applications due to its simplicity, ease of use, and efficient storage of small to medium-sized databases.

٣. User Interface:

XML Layouts:

- Used to design the app's user interface components such as menus, order forms, and user profiles

٢.٣ HARDWARE AND SOFTWARE REQUIREMENT:

Hardware Requirements:

١. System Memory: ٨GB RAM

Processor: Intel Core i٥، AMD Rhyzen ٥

Storage: ٥٠GB available space

٢. Android Device (Tablet) Memory: ٤GB RAM

Processor: Quad Core Process

Software Requirements:

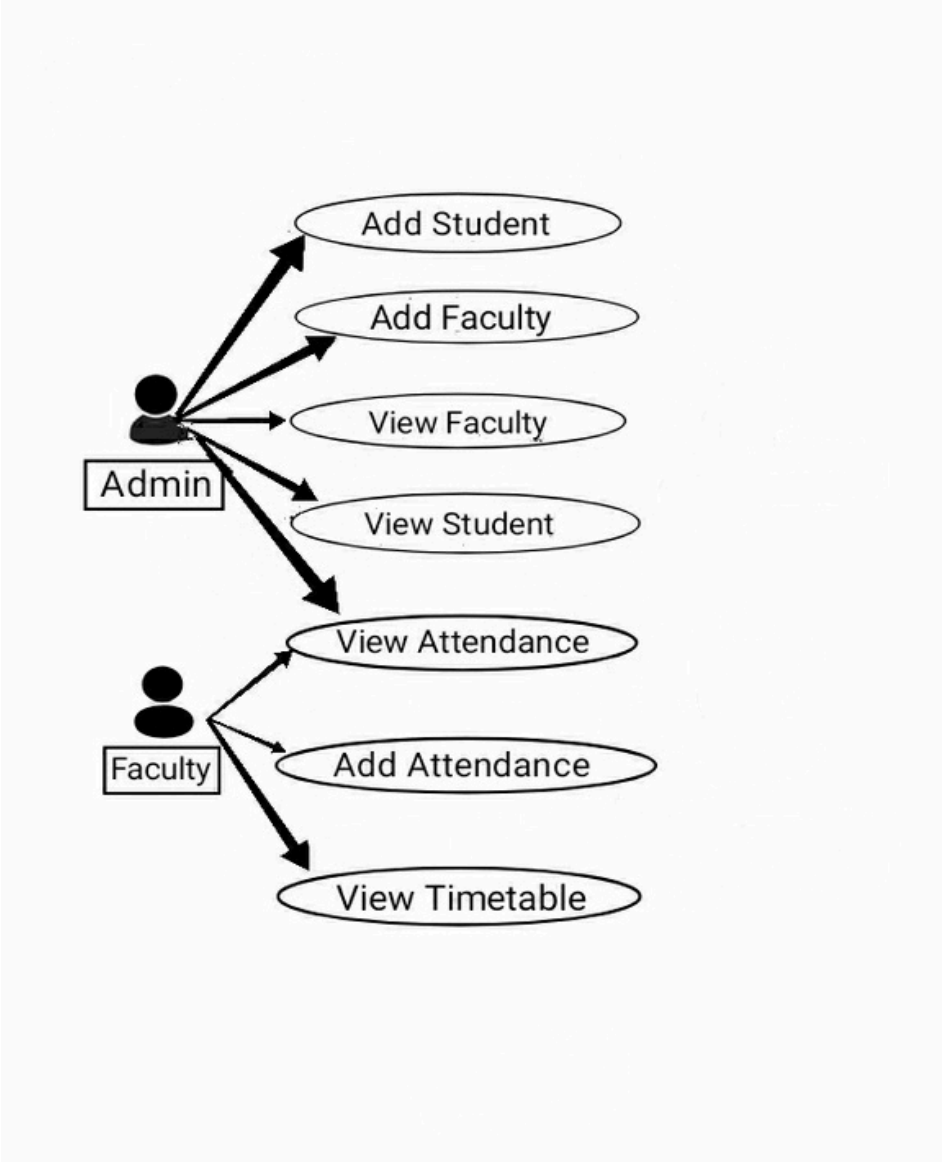
١. OS: Windows ١٠ or ١١ Development

٢. Application: Android Studio

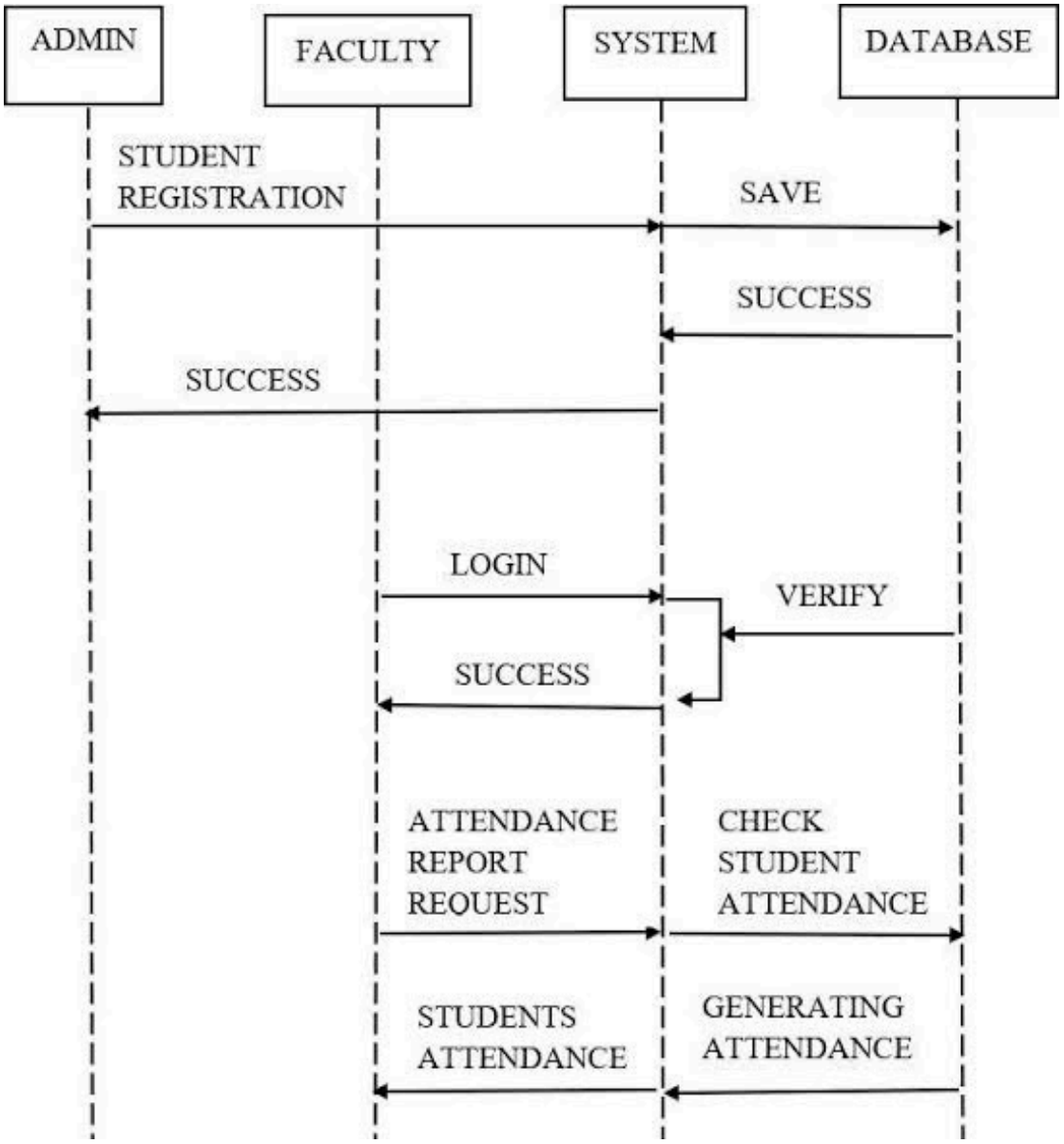
٣. Design Language: extensible Markup Language (XML) Programming Language: Java

३. System Design :

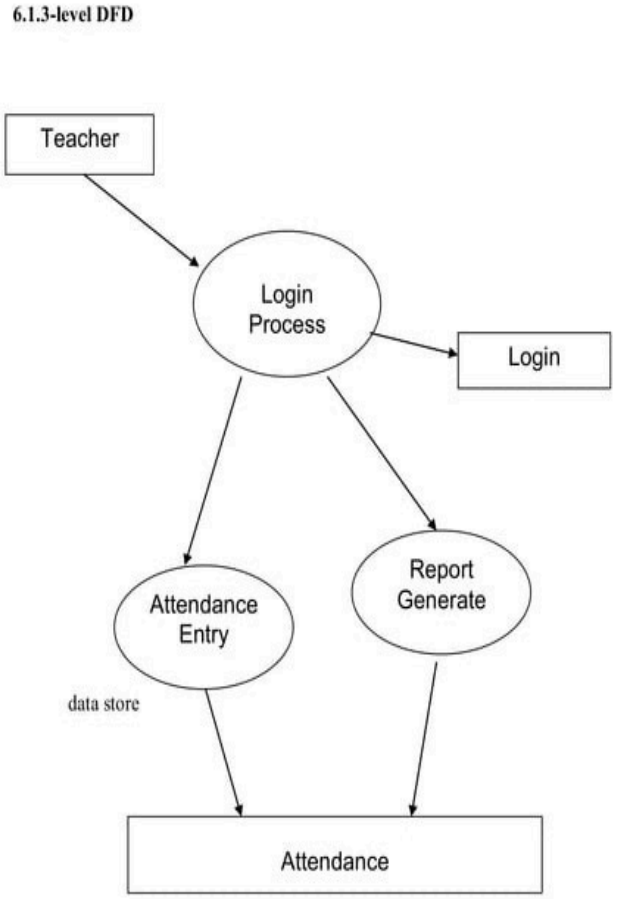
३.१ Use Case Diagrams :



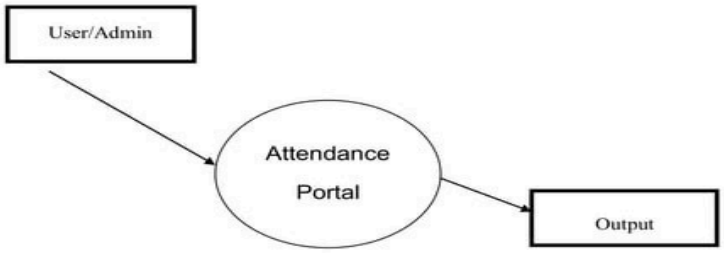
٣.٢ Sequence Diagrams:



٣.٣ Data Flow Diagrams :



6.1 0-level DFD



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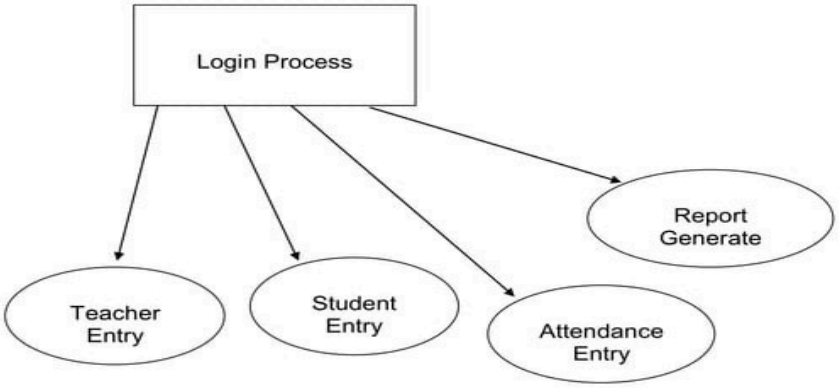
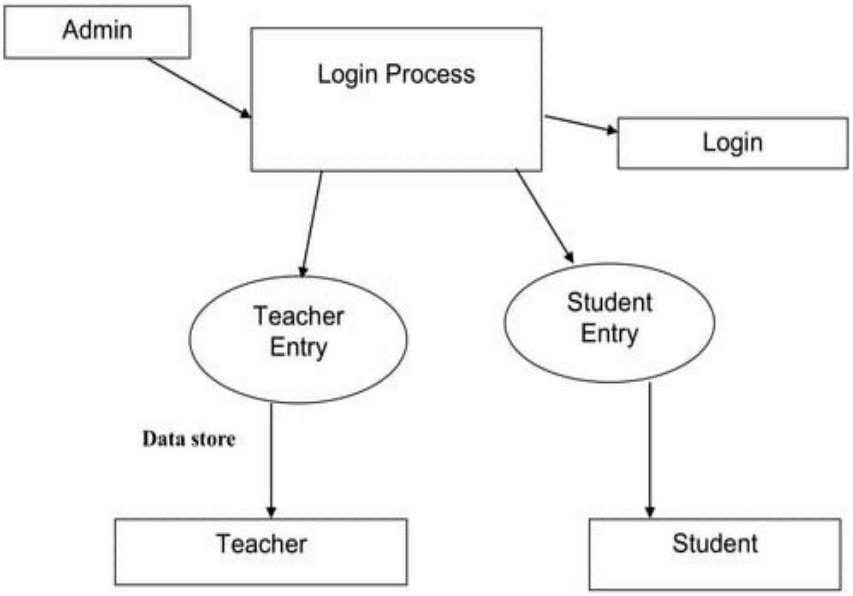
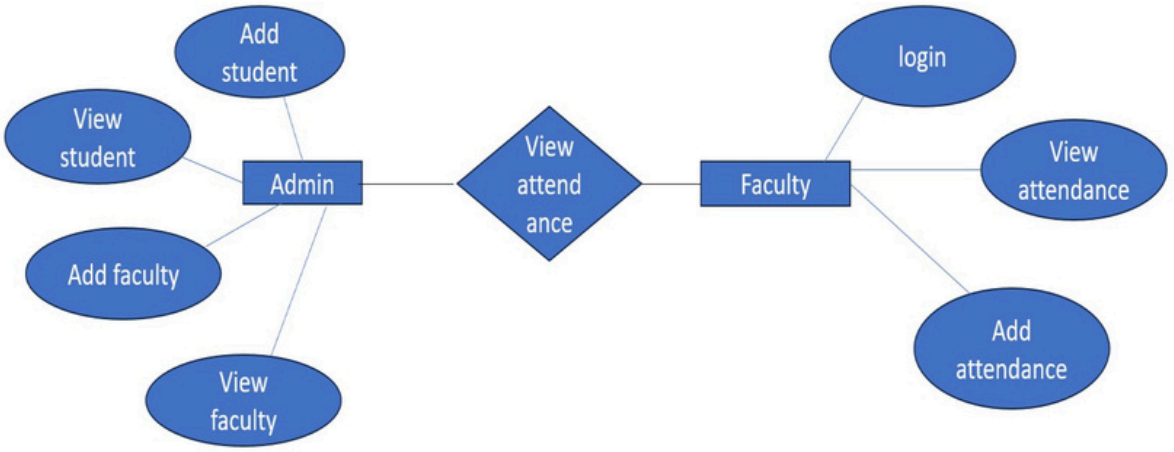


6.1.2-level DFD



٣.٤ ER Diagram :



٤. Code:

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:paddingBottom="@dimen/activity_vertical_margin"
android:paddingLeft="@dimen/activity_horizontal_margin"
android:paddingRight="@dimen/activity_horizontal_margin"
android:paddingTop="@dimen/activity_vertical_margin"
android:background="@drawable/clg"
tools:context=".MainActivity" >

    <TextView
        android:id="@+id/textView١"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_marginLeft="٨٢dp"
        android:layout_marginTop="٤٣dp"          android:text="Login"
        android:textSize="٣٠sp"          android:textAppearance="؟
        android:attr/textAppearanceLarge" />


    <EditText
android:id="@+id/editTextpassword"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_below="@+id/textView٣"
```

```
    android:layout_alignLeft="@+id/textView٣"
    android:layout_marginTop="١٥dp"
    android:background="@drawable/roundedtextview"
    android:ems="١٠"
    android:hint="Password"
    android:inputType="textPassword" />

<TextView
    android:id="@+id/textView٣"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/editTextusername"
    android:layout_below="@+id/editTextusername"
    android:layout_marginTop="١٤dp"
    android:text="Password"
    android:textAppearance="؟android:attr/textAppearanceMedium" />

<TextView
    android:id="@+id/textView٢"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/editTextusername"
    android:layout_below="@+id/textView١"
    android:layout_marginTop="١١٠dp"
    android:text="Username"
    android:textAppearance="؟android:attr/textAppearanceMedium" />

<EditText
    android:id="@+id/editTextusername"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/textView٢"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="٢٠dp"
    android:background="@drawable/roundedtextview"
    android:ems="١٠"
    android:hint="Username"<

    >requestFocus /<
  > /EditText<

  >Spinner
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    android:layout_height="wrap_content"
    android:layout_alignBottom="@+id/textView٢"
    android:layout_alignLeft="@+id/textView٢"
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    android:layout_marginBottom="٣٢dp" /<

  >Button
    android:id="@+id/buttonlogin"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_alignParentBottom="true"
    android:layout_alignRight="@+id/spinnerloginas"
    android:layout_marginBottom="٣٤dp"
    android:text="Login" /<
```

```
> /RelativeLayout<
```

JAVA

```
package com.android.attendance.activity;

import android.app.Activity;
import android.content.Intent;
import android.widget.AdapterView.OnItemSelectedListener;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Spinner;
import android.widget.TextView;
import com.android.attendance.bean.FacultyBean;
import com.android.attendance.context.ApplicationContext;
import com.android.attendance.db.DBAdapter;
import com.example.androidattendancesystem.R;

public class LoginActivity extends Activity {

    Button login;
    EditText username, password;
    Spinner spinnerloginas;
    String userrole;
    private String[] userRoleString = new String[] {"admin", "faculty"};

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.login);

        login =(Button)findViewById(R.id.buttonlogin);
        username=(EditText)findViewById(R.id.editTextusername);
        password=(EditText)findViewById(R.id.editTextpassword);
        spinnerloginas=(Spinner)findViewById(R.id.spinnerloginas);

        spinnerloginas.setOnItemSelectedListener(new
OnItemSelectedListener() {
            @Override
```

```
                public void onItemSelected(AdapterView<?> arg0, View
view,
                        int arg2, long arg3) {
                    // TODO Auto-generated method stub
                    ((TextView)
arg0.getChildAt(0)).setTextColor(Color.WHITE);
                    userrole =(String) spinnerloginas.getSelectedItem();

                }

                @Override
                public void onNothingSelected(AdapterView<?> arg0) {
                    // TODO Auto-generated method stub
                }
            });

            ArrayAdapter<String> adapter_role = new
ArrayAdapter<String>(this,
                    android.R.layout.simple_spinner_item,
userRoleString);
            adapter_role

        .setDropDownViewResource(android.R.layout.simple_spinner_dropdown
_item);
            spinnerloginas.setAdapter(adapter_role);

            login.setOnClickListener(new OnClickListener() {

                @Override
                public void onClick(View v) {
                    // TODO Auto-generated method stub

                    if(userrole.equals("admin"))
                    {

                        String user_name =
username.getText().toString();
                        String pass_word =
password.getText().toString();

                        if (TextUtils.isEmpty(user_name))
```

```
                {
                    username.setError("Invalid User
Name");
                }
                else if(TextUtils.isEmpty(pass__word))
                {
                    password.setError("enter password");
                }
                else
                {
                    if(user__name.equals("admin")&
pass__word.equals("admin123")){
                    Intent intent=new
Intent(LoginActivity.this,MenuActivity.class);
                    startActivity(intent);
                    Toast.makeText(getApplicationContext(),
"Login successful", Toast.LENGTH__SHORT).show();
                    }else{

        Toast.makeText(getApplicationContext(), "Login failed",
Toast.LENGTH__SHORT).show();
                    }
                }
            }

            else
            {
                String user__name =
username.getText().toString();
                String pass__word =
password.getText().toString();

                if (TextUtils.isEmpty(user__name))
                {
                    username.setError("Invalid User
Name");
                }
                else if(TextUtils.isEmpty(pass__word))
                {
                    password.setError("enter password");
                }
```

```
                DBAdapter dbAdapter = new
DBAdapter(LoginActivity.this);
                FacultyBean facultyBean =
dbAdapter.validateFaculty(user_name, pass_word);

                if(facultyBean!=null)
                {
                    Intent intent = new
Intent(LoginActivity.this,AddAttandanceSessionActivity.class);
                    startActivity(intent);

        ((ApplicationContext)LoginActivity.this.getApplicationContext()).setFacul
tyBean(facultyBean);
                    Toast.makeText(getApplicationContext(),
"Login successful", Toast.LENGTH_SHORT).show();
                }
                else
                {
                    Toast.makeText(getApplicationContext(),
"Login failed", Toast.LENGTH_SHORT).show();
                }
            }



        });



    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        // Inflate the menu; this adds items to the action bar if it is present.
        getMenuInflater().inflate(R.menu.main, menu);
        return true;
    }

}
```

DataBase Module

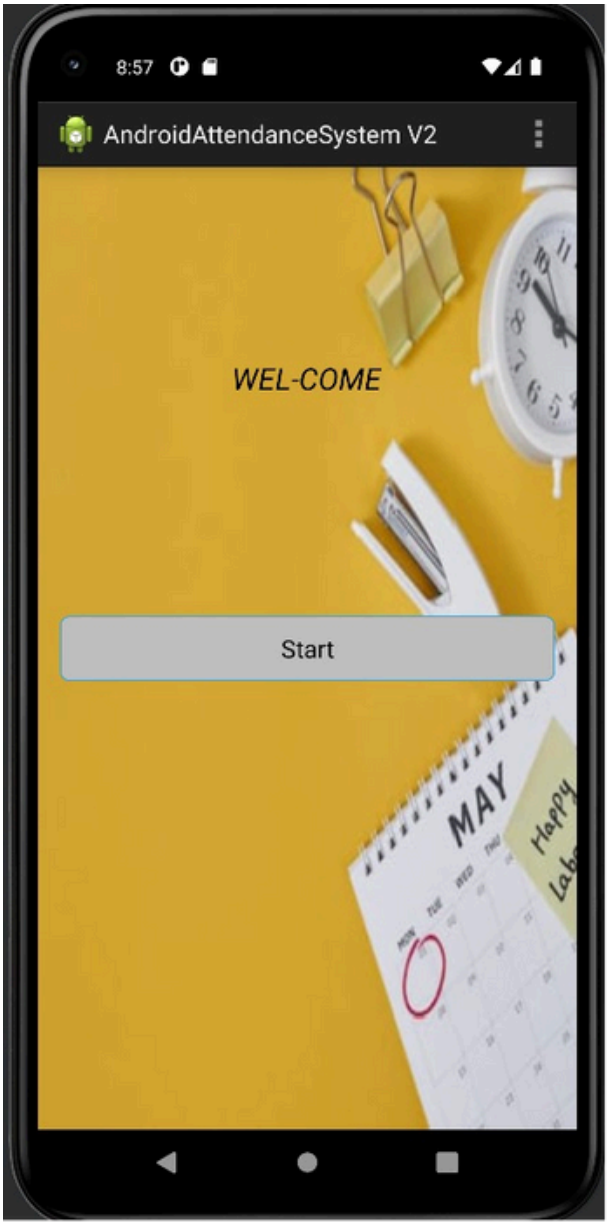
```
package com.android.attendance.db;
import java.util.ArrayList;
import com.android.attendance.bean.AttendanceBean;
import com.android.attendance.bean.AttendanceSessionBean;
import com.android.attendance.bean.FacultyBean;
import com.android.attendance.bean.StudentBean;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import android.util.Log;

public class DBAdapter extends SQLiteOpenHelper {
        //All Static variables
        //Database Version
        private static final int DATABASE_VERSION = 1;

        //Database Name
        private static final String DATABASE_NAME = "Attendance";

        //Contacts table name
        private static final String FACULTY_INFO_TABLE = "faculty_table";
        private static final String STUDENT_INFO_TABLE = "student_table";
        private static final String ATTENDANCE_SESSION_TABLE =
"attendance_session_table";
        private static final String ATTENDANCE_TABLE = "attendance_table";
//Contacts Table Columns names
```

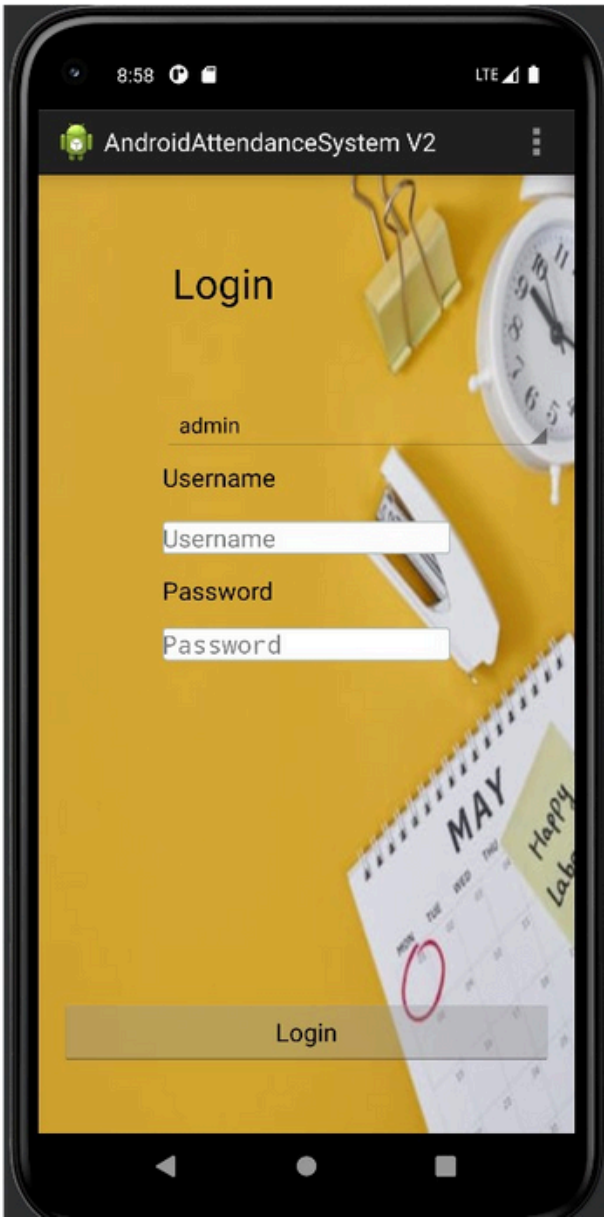
```
    private static final String KEY_FACULTY_ID = "faculty_id";
    private static final String KEY_FACULTY_FIRSTNAME =
"faculty_firstname";
    private static final String KEY_FACULTY_LASTNAME =
"faculty_Lastname";
    private static final String KEY_FACULTY_MO_NO =
"faculty_mobilenumber";
    private static final String KEY_FACULTY_ADDRESS =
"faculty_address";
    private static final String KEY_FACULTY_USERNAME =
"faculty_username";
    private static final String KEY_FACULTY_PASSWORD =
"faculty_password";


    private static final String KEY_STUDENT_ID = "student_id";
    private static final String KEY_STUDENT_FIRSTNAME =
"student_firstname";
    private static final String KEY_STUDENT_LASTNAME =
"student_lastname";
    private static final String KEY_STUDENT_MO_NO =
"student_mobilenumber";
    private static final String KEY_STUDENT_ADDRESS =
"student_address";
    private static final String KEY_STUDENT_DEPARTMENT =
"student_department";
    private static final String KEY_STUDENT_CLASS = "student_class";


    private static final String KEY_ATTENDANCE_SESSION_ID =
"attendance_session_id";
    private static final String
KEY_ATTENDANCE_SESSION_FACULTY_ID =
"attendance_session_faculty_id";
```

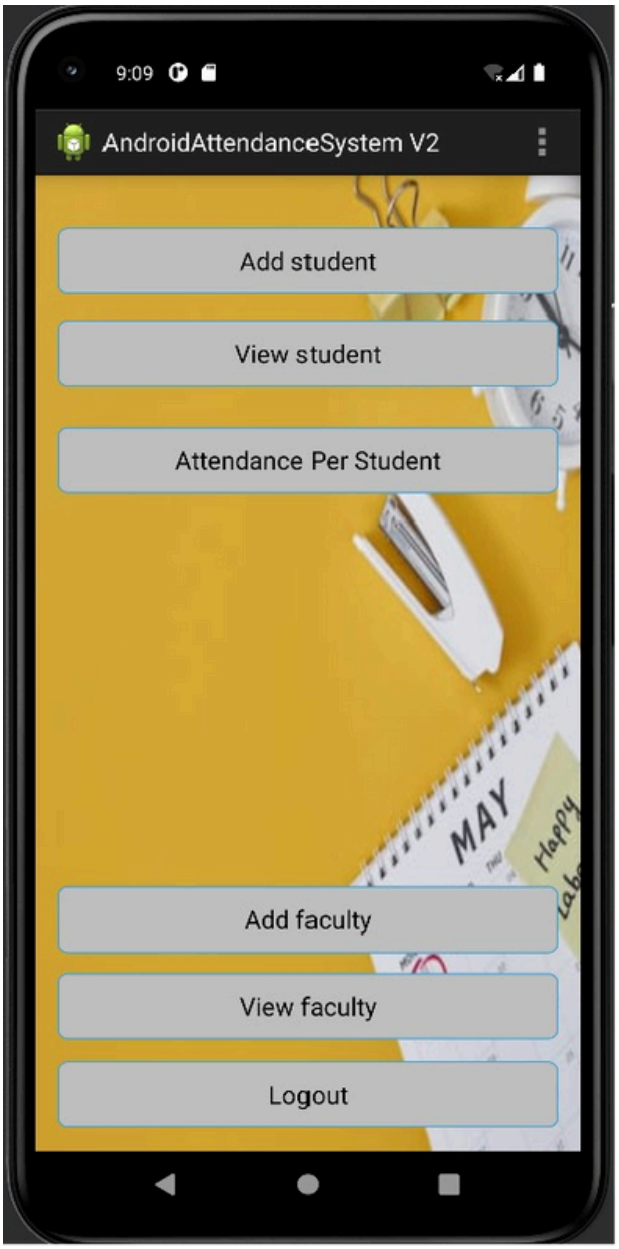
```
    private static final String
KEY_ATTENDANCE_SESSION_DEPARTMENT =
"attendance_session_department";

    private static final String KEY_ATTENDANCE_SESSION_CLASS =
"attendance_session_class";

    private static final String KEY_ATTENDANCE_SESSION_DATE =
"attendance_session_date";

    private static final String KEY_ATTENDANCE_SESSION_SUBJECT =
"attendance_session_subject";


    private static final String KEY_SESSION_ID = "attendance_session_id";

    private static final String KEY_ATTENDANCE_STUDENT_ID =
"attendance_student_id";

    private static final String KEY_ATTENDANCE_STATUS =
"attendance_status";
```

٥. Implementation:

Screen Shots:



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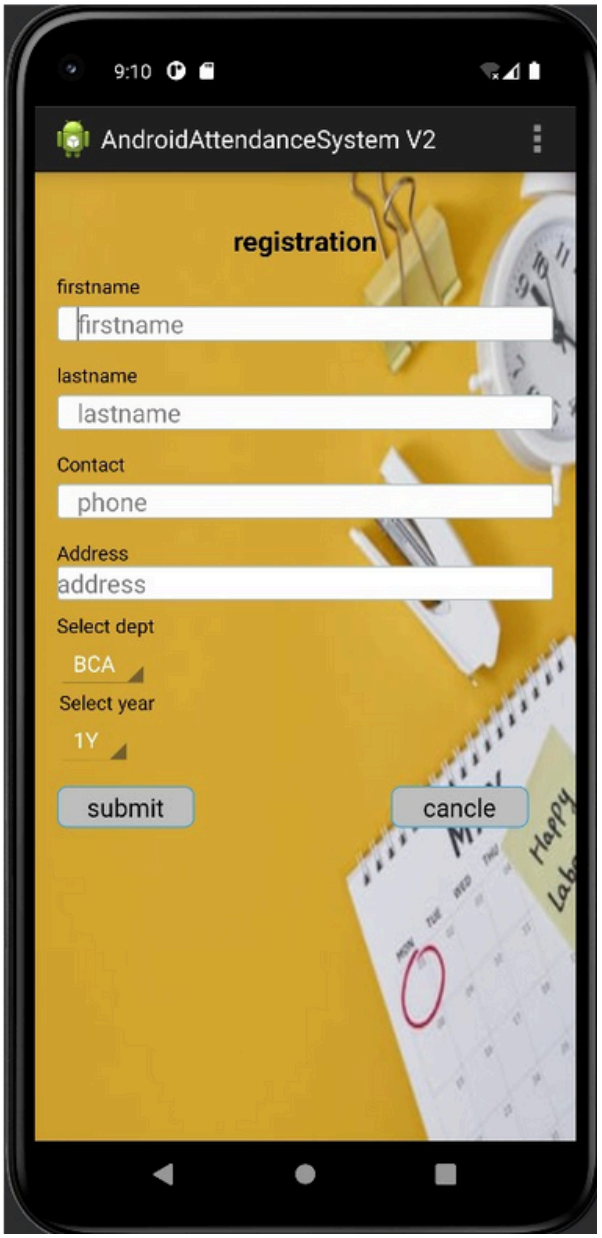
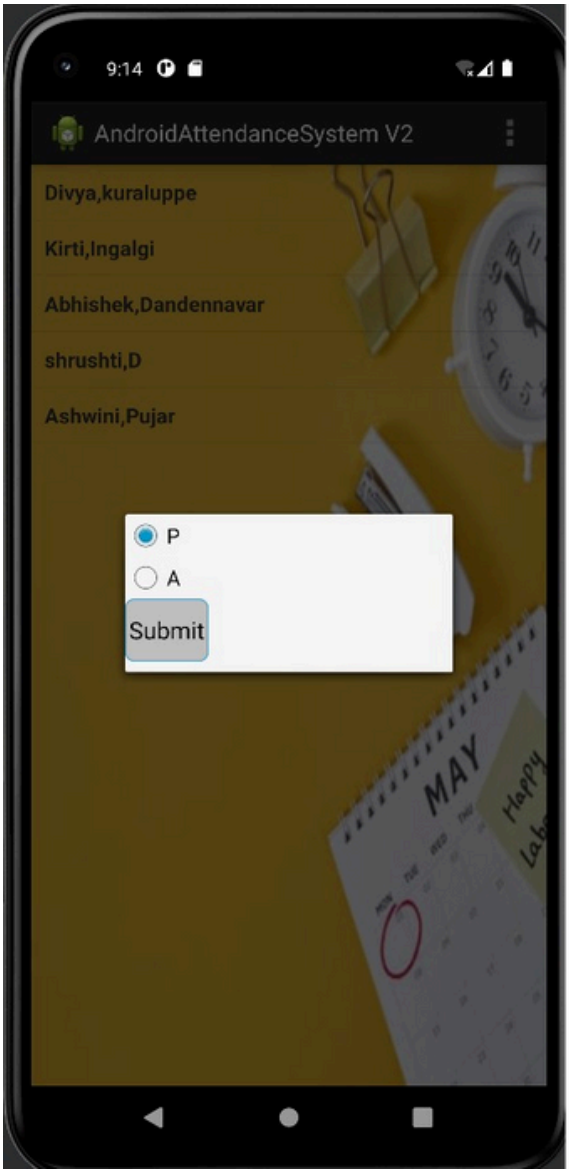
AndroidAttendanceSystem V2
Add student
View student
Attendance Per Student
Add faculty
View faculty
Logout


9:10
AndroidAttendanceSystem V2
registration
firstname
firstname
lastname
lastname
Contact
phone
Address
address
Select dept
BCA
Select year
1Y
submit
cancle


9:14
AndroidAttendanceSystem V2
Divya,kuraluppe
Kirti,Ingalgi
Abhishek,Dandennavar
shrushti,D
Ashwini,Pujar
P
A
Submit


9:17
AndroidAttendanceSystem V2
Id | StudentName | Status
4. Divya,kuraluppe P
5. Kirti,Ingalgi P
6. Abhishek,Dandennavar A
7. shrushti,D P
7. shrushti,D A
8. Ashwini,Pujar P
Date : 13 / 8 / 2024

٦. Software Testing :

Testing an attendance app requires careful consideration of various features and functionalities. Below are some potential test cases, along with the expected results, to ensure the app works as intended:

Test Case ID	Test Case Description	Preconditions	Test Steps	Expected Result	Test Result
TC_001	Validate successful login for Employee	The app is installed, and the user has valid credentials	1. Launch the app. 2. Enter valid employee username and password. 3. Click the "Login" button.	The user should be successfully logged in and redirected to the attendance dashboard.	Pass
TC_002	Validate marking attendance for the current day	The user is logged in	1. On the dashboard, tap on "Mark Attendance." 2. Confirm the current date and time. 3. Click "Submit."	Attendance should be successfully marked for the current date and time, with a confirmation message displayed.	Pass
TC_003	Validate viewing attendance history	The user is logged in	1. Navigate to the "Attendance History" section. 2. Select a date range or specific	The attendance history for the selected date range should be displayed accurately.	Pass

Conclusion:

The Student Attendance App is a powerful tool that enhances the efficiency of managing student attendance, making it easier for educators to maintain accurate records and for parents to stay informed about their children's school attendance. This app contributes to a more organized and effective educational environment.

Future Enhancements:

Automated Reminders and Notifications

. Description: Addautomated reminders for users who have not markedtheir attendanceby a certain time. Additionally, send notifications for upcoming deadlines, meetings, or events.
. Benefit: Helps users stay on top of their schedules and reduces the chances of missed attendance.

Mobile App Enhancements

. Description: Enhance the mobile app with features like push notifications, biometric login(fingerprint or face recognition), and voice command integration for marking attendance.
. Benefit: Improves user convenience and security while using the app on mobile devices.

٨. Bibliography

WebReference

- Github.com
- GeeksforGeeks.com
- Bootstrap.com

Video Reference

- Youtube.com
- https://youtu.be/ZLORm_rocLw?si=qvmXHQ0bDyA0WIqj for designing application.
- https://youtu.be/7NJavvSLYx8?si=4cGZG_jffaBhcTRB For database reference.