Exp 3: Login Page using SQLite

1. Create Project with Empty Views Activity

2. Activity_main.xml

RelativeLayout (id: main)
├── LinearLayout
│ └── (No child elements — can be removed or fixed)
├── TextView
│ ├── text: "Login Page using SQLite"
│ ├── textSize: 30dp
│ ├── textStyle: bold
│ └── textAlignment: center
├── EditText (id: username)
│ └── hint: "Enter Username"
├── EditText (id: password)
│ ├── hint: "Enter Password"
│ └── layout_below: @id/username
├── EditText (id: repassword)
│ ├── hint: "Enter Password Again"
│ └── layout_below: @id/password
├── Button (id: signup)
│ ├── text: "Signup"
│ └── layout_below: @id/repassword
└── Button (id: login)
├── text: "Registered Users Click Here to Login"
└── layout_below: @id/signup

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="10dp"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
        <TextView
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Login Page using SQLite"
```

```
        android:textSize="30dp"
        android:textStyle="bold"
        android:textAlignment="center"/>


<EditText
    android:id="@+id/username"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Enter Username"
    android:layout_marginTop="60dp"
    />

<EditText
    android:id="@+id/password"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Enter Password"
    android:layout_below="@id/username"
    android:layout_marginTop="40dp"
    />

<EditText
    android:id="@+id/repassword"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Enter Password Again"
    android:layout_below="@id/password"
    android:layout_marginTop="40dp"
    />

<Button
    android:id="@+id/signup"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Signup"
    android:layout_below="@id/repassword"
    android:layout_marginTop="40dp"
    />

<Button
    android:id="@+id/login"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Registered Users Click Here to Login"
    android:layout_below="@id/signup"
    android:layout_marginTop="40dp"
    />
```

</RelativeLayout>

3. Create Login Page activity with 2 text boxes and 1 button similar to what has been done in step 2.
   When will the user go to Login Page? If the user has already registered.
   Hyperlinking is done from SignUp Page to the Login page
4. Create a Home Page activity with a message showing logged in successfully.
   When will the user go to Home Page? If the user has Signed In.
   Hyperlinking is done from Login Page to the Home Page.

5. Main_Activity.java

MainActivity (extends AppCompatActivity)
├── Fields
│ ├── EditText: username
│ ├── EditText: password
│ ├── EditText: repassword
│ ├── Button: signup
│ ├── Button: login
│ └── DBHelper: db
│
└── onCreate(Bundle savedInstanceState)
├── Enable EdgeToEdge
├── setContentView(R.layout.activity_main)
├── Bind Views
│ ├── username = findViewById(...)
│ ├── password = findViewById(...)
│ ├── repassword = findViewById(...)
│ ├── signup = findViewById(...)
│ ├── login = findViewById(...)
│ └── db = new DBHelper(this)
│
├── signup.setOnClickListener
│ └── onClick(View)
│ ├── Get text from fields
│ ├── Check if any field is empty
│ │ └── Show "Please Enter All the Credentials" Toast
│ └── Else (all fields filled)
│ ├── Check if passwords match
│ │ ├── If not → Show "Enter the Correct Password" Toast
│ │ └── Else
│ │ ├── Check if username exists (db.checkusername)
│ │ │ ├── If exists → Show "Username Already Exists"
│ │ │ └── Else
│ │ │ ├── Insert user into DB (db.insertdata)
│ │ │ ├── If success → Show "Registered Successfully"

| | | └── Else → Show "Registration Unsuccessful"

|

└── login.setOnClickListener

└── onClick(View)

└── Start login activity via Intent

```
package com.example.login;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {

    EditText username, password, repassword;
    Button signup, login;

    DBHelper db;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);

        username = findViewById(R.id.username);
        password = findViewById(R.id.password);
        repassword = findViewById(R.id.repassword);
        signup = findViewById(R.id.signup);
        login = findViewById(R.id.login);
        db=new DBHelper(this);

        signup.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String user=username.getText().toString();
                String pass=password.getText().toString();
                String repass=repassword.getText().toString();
```

```
            if(user.equals("") || pass.equals("") || repass.equals(""))
                Toast.makeText(MainActivity.this,"Please Enter All the Credentials",
Toast.LENGTH_SHORT).show();
            else {
                if (pass.equals(repass))
                {
                    boolean checkuser = db.checkusername(user);
                    if (checkuser == false)
                    {
                        boolean insert = db.insertdata(user, pass);
                        if(insert==true)
                        {
                            Toast.makeText(MainActivity.this,"Registered
Successfully",Toast.LENGTH_SHORT).show();
                        }
                        else
                        {
                            Toast.makeText(MainActivity.this,"Registration
Unsuccessful",Toast.LENGTH_SHORT).show();
                        }
                    }
                    else
                    {
                        Toast.makeText(MainActivity.this,"Username Already
Exists",Toast.LENGTH_SHORT).show();

                    }
                }
                else
                {
                    Toast.makeText(MainActivity.this,"Enter the Correct
Passoword",Toast.LENGTH_SHORT).show();
                }
            }
        }
    });

    login.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            Intent intent= new Intent(getApplicationContext(),login.class);
            startActivity(intent);
        }
    });


}}
```

6. Create a new Java Class with the name DBHelper. The main function is to write all the validation and verification queries along with the creation of the database.

DBHelper.java

DBHelper (extends SQLiteOpenHelper)
├── Constant
│ └── DBNAME = "login.db"
│
├── Constructor DBHelper(Context)
│ └── Calls super(context, "login.db", null, 1)
│
├── onCreate(SQLiteDatabase mydb)
│ └── Executes SQL:
│ "CREATE TABLE users(username TEXT PRIMARY KEY, password TEXT)"
│
├── onUpgrade(SQLiteDatabase mydb, int i, int i1)
│ └── Executes SQL:
│ "DROP TABLE IF EXISTS users"
│
├── insertdata(String username, String password)
│ ├── Get writable DB
│ ├── Put values in ContentValues
│ ├── Insert into "users" table
│ └── Return true if insert succeeded, false otherwise
│
├── checkusername(String username)
│ ├── Get writable DB
│ ├── Run raw query: "SELECT * FROM users WHERE username=?"
│ ├── If cursor count > 0 → return true (username exists)
│ └── Else → return false
│
└── checkusernamepassword(String username, String password)
├── Get writable DB
├── Run raw query: "SELECT * FROM users WHERE username=? AND password=?"
├── If cursor count > 0 → return true (match found)
└── Else → return false

```
package com.example.login;
   import android.content.ContentValues;
   import android.content.Context;
   import android.database.Cursor;
   import android.database.sqlite.SQLiteDatabase;
   import android.database.sqlite.SQLiteOpenHelper;

   import androidx.annotation.Nullable;
```

```
public class DBHelper extends SQLiteOpenHelper {
    public static final String DBNAME = "login.db";

    public DBHelper(Context context) {
        super(context, "login.db", null, 1);

    }


    @Override
    public void onCreate(SQLiteDatabase mydb) {
        mydb.execSQL("create table users(username TEXT Primary Key, password TEXT)");
    }

    @Override
    public void onUpgrade(SQLiteDatabase mydb, int i, int i1) {
        mydb.execSQL("drop table if exists users");
    }

    public boolean insertdata(String username, String password) {
        SQLiteDatabase mydb = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put("username", username);
        contentValues.put("password", password);
        long result = mydb.insert("users", null, contentValues);
        if (result == -1) return false;
        else
            return true;

    }

    public boolean checkusername(String username) {
        SQLiteDatabase mydb = this.getWritableDatabase();
        Cursor cursor = mydb.rawQuery("Select * from users when username=?", new
String[]{username});
        if (cursor.getCount() > 0)
            return true;
        else
            return false;
    }

    public boolean checkusernamepassword(String username, String password) {
        SQLiteDatabase mydb = this.getWritableDatabase();
        Cursor cursor = mydb.rawQuery("Select * from users where username=? and password=?",
new String[]{username, password});
        if (cursor.getCount() > 0)
            return true;
        else
```

```
            return false;
        }
    }
```

7. Login.java (Java Code for the backend logic of Login Page

login (extends AppCompatActivity)

├── UI Components

│ ├── EditText username1

│ ├── EditText password1

│ └── Button login1

│

├── DBHelper db

│

└── onCreate(Bundle savedInstanceState)

├── Set layout: activity_login

├── Initialize UI elements with findViewById

├── Initialize DBHelper

└── login1.setOnClickListener

└── onClick(View view)

├── Get user input: username, password

├── IF either is empty

│ └── Show "Enter all the credentials" Toast

├── ELSE

│ ├── Check credentials via db.checkusernamepassword

│ ├── IF true

│ │ ├── Show "Login Successful" Toast

│ │ └── Start Home activity

│ └── ELSE

│ └── Show "Invalid Credentials" Toast

package com.example.login;

```
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;



public class login extends AppCompatActivity {
    EditText username1, password1;
    Button login1;
    DBHelper db;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_login);

            username1=findViewById(R.id.username1);
            password1=findViewById(R.id.password1);
            login1=findViewById(R.id.login1);
            db = new DBHelper(this);
            login1.setOnClickListener(new View.OnClickListener() {
                @Override
                public void onClick(View view)
                {
                    String user=username1.getText().toString();
                    String pass=password1.getText().toString();
```

```
            if(user.equals("")||pass.equals(""))
            {
               Toast.makeText(login.this,"Enter all the credentials",Toast.LENGTH_SHORT).show();
            }
            else
            {
               boolean checkuserpass= db.checkusernamepassword(user,pass);
               if(checkuserpass==true)
               {
                  Toast.makeText(login.this,"Login Successful",Toast.LENGTH_SHORT).show();
                  Intent intent=new Intent(getApplicationContext(), Home.class);
                  startActivity(intent);
               }
               else
               {
                  Toast.makeText(login.this,"Invalid Credentials",Toast.LENGTH_SHORT).show();
               }
            }
         }
      });

   }
}
```