Slip12 q1 A

Create the XML layout for the login activity (activity_login.xml):

```
<!-- res/layout/activity_login.xml -->
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp">

    <EditText
        android:id="@+id/usernameEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Username"/>

    <EditText
        android:id="@+id/passwordEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/usernameEditText"
        android:layout_marginTop="8dp"
        android:hint="Password"
        android:inputType="textPassword"/>

    <Button
        android:id="@+id/loginButton"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
```

```
        android:layout_below="@id/passwordEditText"
        android:layout_marginTop="16dp"
        android:text="Login"/>
</RelativeLayout>
```

Create the XML layout for the second activity (activity_home.xml):

```
<!-- res/layout/activity_home.xml -->
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp">

    <TextView
        android:id="@+id/welcomeTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Welcome to the Home Activity!"
        android:textSize="18sp"/>

</RelativeLayout>
```

3. **Create the LoginActivity (LoginActivity.java):**

```
// src/com/example/loginapp/LoginActivity.java
package com.example.loginapp;

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.appcompat.app.AppCompatActivity;

public class LoginActivity extends AppCompatActivity {
```

```java

    // Hardcoded username and password
    private static final String CORRECT_USERNAME = "user";
    private static final String CORRECT_PASSWORD = "password";

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

        final EditText usernameEditText = findViewById(R.id.usernameEditText);
        final EditText passwordEditText = findViewById(R.id.passwordEditText);
        Button loginButton = findViewById(R.id.loginButton);

        loginButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Get user-entered credentials
                String enteredUsername = usernameEditText.getText().toString().trim();
                String enteredPassword = passwordEditText.getText().toString().trim();

                // Check if credentials are correct
                if (enteredUsername.equals(CORRECT_USERNAME) &&
    enteredPassword.equals(CORRECT_PASSWORD)) {
                    // Successful login
                    showToast("Login successful");

                    // Go to the HomeActivity
                    goToHomeActivity();
                } else {
                    // Incorrect credentials
                    showToast("Incorrect username or password");
                }
            }
        });
    }

    private void showToast(String message) {
        Toast.makeText(this, message, Toast.LENGTH_SHORT).show();
    }

    private void goToHomeActivity() {
        Intent intent = new Intent(this, HomeActivity.class);
        startActivity(intent);
        finish(); // Finish the LoginActivity to prevent going back with the back button
    }
}
```

Create the HomeActivity (HomeActivity.java)

```
// src/com/example/loginapp/HomeActivity.java
package com.example.loginapp;

import android.os.Bundle;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class HomeActivity extends AppCompatActivity {

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

        TextView welcomeTextView = findViewById(R.id.welcomeTextView);
        welcomeTextView.setText("Welcome to the Home Activity!");
    }
}
```

Slip12 q1 B

1. **Create the XML layout for the main activity (activity_main.xml):**

xml

```
<!-- res/layout/activity_main.xml -->
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    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:orientation="vertical"
    android:padding="16dp"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/balanceTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Balance: $1000"/>

    <Button
        android:id="@+id/withdrawButton"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Withdraw"/>

    <Button
        android:id="@+id/depositButton"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Deposit"/>

</LinearLayout>
```

Create the MainActivity (MainActivity.java):

```
// src/com/example/bankapp/MainActivity.java
package com.example.bankapp;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private double balance = 1000.0; // Initial balance

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

        final TextView balanceTextView = findViewById(R.id.balanceTextView);
        final Button withdrawButton = findViewById(R.id.withdrawButton);
        final Button depositButton = findViewById(R.id.depositButton);

        // Update balance display
        updateBalance(balanceTextView);

        // Withdraw button click listener
        withdrawButton.setOnClickListener(new View.OnClickListener() {
```

```
        @Override
        public void onClick(View v) {
            // Example: Withdraw $50
            withdraw(50);
            updateBalance(balanceTextView);
        }
    });

    // Deposit button click listener
    depositButton.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            // Example: Deposit $100
            deposit(100);
            updateBalance(balanceTextView);
        }
    });
}

private void updateBalance(TextView balanceTextView) {
    balanceTextView.setText("Balance: $" + balance);
}

private void withdraw(double amount) {
    // Example: Perform withdrawal logic (deduct amount from balance)
    balance -= amount;
}

private void deposit(double amount) {
```

```
        // Example: Perform deposit logic (add amount to balance)
        balance += amount;
    }
}
```

Q2Write a program to calculate distance between two locations on Google Map with UI in android

Open your `build.gradle` (Module: app) file and add the following dependencies:

```
implementation 'com.google.android.gms:play-services-maps:17.0.1'
implementation 'com.google.android.gms:play-services-places:17.0.0'
```

Create the UI layout (activity_main.xml):

```
<?xml version="1.0" encoding="utf-8"?>
<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:paddingLeft="16dp"
    android:paddingTop="16dp"
    android:paddingRight="16dp"
    android:paddingBottom="16dp"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/editTextOrigin"
        android:layout_width="match_parent"
```

```
        android:layout_height="wrap_content"
        android:hint="Enter origin location"/>

    <EditText
        android:id="@+id/editTextDestination"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextOrigin"
        android:layout_marginTop="8dp"
        android:hint="Enter destination location"/>

    <Button
        android:id="@+id/buttonCalculate"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextDestination"
        android:layout_marginTop="16dp"
        android:text="Calculate Distance"/>

    <TextView
        android:id="@+id/textViewResult"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/buttonCalculate"
        android:layout_marginTop="16dp"
        android:text="Distance will be displayed here"/>
</RelativeLayout>
```

Implement the logic in MainActivity.java:

```
package com.example.distancecalculator;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import com.google.android.gms.maps.model.LatLng;
import com.google.android.libraries.places.api.Places;
import com.google.android.libraries.places.api.model.Place;
import com.google.android.libraries.places.api.model.RectangularBounds;
import com.google.android.libraries.places.api.net.PlacesClient;

public class MainActivity extends AppCompatActivity {

    private EditText editTextOrigin, editTextDestination;
    private Button buttonCalculate;
    private TextView textViewResult;

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

        // Initialize Places API
```

```
        Places.initialize(getApplicationContext(), "YOUR_API_KEY");
        PlacesClient placesClient = Places.createClient(this);

        editTextOrigin = findViewById(R.id.editTextOrigin);
        editTextDestination = findViewById(R.id.editTextDestination);
        buttonCalculate = findViewById(R.id.buttonCalculate);
        textViewResult = findViewById(R.id.textViewResult);

        buttonCalculate.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String origin = editTextOrigin.getText().toString().trim();
                String destination = editTextDestination.getText().toString().trim();

                if (!origin.isEmpty() && !destination.isEmpty()) {
                    // Perform distance calculation
                    LatLng originLatLng = getLocationFromAddress(origin);
                    LatLng destinationLatLng = getLocationFromAddress(destination);

                    if (originLatLng != null && destinationLatLng != null) {
                        double distance = calculateDistance(originLatLng, destinationLatLng);
                        textViewResult.setText("Distance: " + distance + " km");
                    } else {
                        textViewResult.setText("Invalid location. Please check your input.");
                    }
                } else {
                    textViewResult.setText("Please enter both origin and destination
locations.");
                }
```

```
        }
    });
  }

  // Method to convert address to LatLng
  private LatLng getLocationFromAddress(String address) {
    // You may need to use a Geocoding API to get LatLng from an address.
    // For simplicity, you can use a placeholder method.
    // Replace this with the actual implementation using a Geocoding API.
    return null;
  }

  // Method to calculate distance between two LatLng points
  private double calculateDistance(LatLng origin, LatLng destination) {
    // You may use the Google Maps Distance Matrix API to get the distance.
    // For simplicity, you can use a placeholder method.
    // Replace this with the actual implementation using the API.
    return 0.0;
  }
}
```