

AP practical

Hello world

Mainactivity.java

```
package com.example.helloworldapp;

import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main); // Links the Java code
to the XML layout
    }
}
```

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center"
    android:orientation="vertical">

    <TextView
        android:id="@+id/txtHello"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello, World!"
        android:textSize="24sp"
        android:textColor="@android:color/black"/>
</LinearLayout>
```

table layout

mainactivity.java

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

    <TextView
        android:id="@+id/titleTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Dynamic Table Layout Example"
        android:textSize="24sp"
        android:layout_gravity="center"
        android:layout_marginBottom="16dp"/>

    <!-- The TableLayout will be added programmatically in the Java
code -->

</LinearLayout>
```

MainActivity.java:

```
package com.example.prac8tablelayout;

import android.os.Bundle;
import android.widget.TableLayout;
import android.widget.TableRow;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
```

```

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        // Create a TableLayout
        TableLayout tableLayout = new TableLayout(this);
        tableLayout.setLayoutParams(new TableLayout.LayoutParams(
            TableLayout.LayoutParams.MATCH_PARENT,
            TableLayout.LayoutParams.WRAP_CONTENT));

        // Add rows to the table
        for (int i = 0; i < 3; i++) {
            TableRow tableRow = new TableRow(this);
            tableRow.setLayoutParams(new TableRow.LayoutParams(
                TableRow.LayoutParams.MATCH_PARENT,
                TableRow.LayoutParams.WRAP_CONTENT));

            // Add columns to the row
            for (int j = 0; j < 3; j++) {
                TextView textView = new TextView(this);
                textView.setText("Cell " + (i + 1) + ", " + (j + 1));
                textView.setPadding(16, 16, 16, 16);
                tableRow.addView(textView);
            }

            // Add the row to the table layout
            tableLayout.addView(tableRow);
        }

        // Set the TableLayout as the content view
        setContentView(tableLayout);
    }
}

```

linear layout

activity_main.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/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Welcome to My App!"
        android:textSize="24sp"
        android:layout_centerHorizontal="true"
        android:layout_marginBottom="20dp"/>

    <EditText
        android:id="@+id/editText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter your name"
        android:layout_below="@id/textView"
        android:layout_marginBottom="20dp"/>

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        android:layout_below="@id/editText"
        android:layout_centerHorizontal="true"/>
```

</RelativeLayout>

MainActivity.java:

```
package com.example.prac7linearlayout;

import android.os.Bundle;
import android.widget.Button;
import android.widget.LinearLayout;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        // Create a new LinearLayout
        LinearLayout linearLayout = new LinearLayout(this);
        linearLayout.setOrientation(LinearLayout.VERTICAL); // Set orientation to
        vertical
        linearLayout.setPadding(16, 16, 16, 16); // Add padding

        // Create a Button and add it to the LinearLayout
        Button button1 = new Button(this);
        button1.setText("Button 1");
        linearLayout.addView(button1);

        // Create another Button and add it to the LinearLayout
        Button button2 = new Button(this);
        button2.setText("Button 2");
        linearLayout.addView(button2);

        // Set the LinearLayout as the content view
        setContentView(linearLayout);
    }
}
```

radio button

avtivity_main.xml:

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

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Select your favorite genre:"
        android:textSize="18sp"
        android:layout_marginBottom="16dp"/>

    <RadioGroup
        android:id="@+id/radioGroup"
        android:layout_width="match_parent"
        android:layout_height="wrap_content">

        <RadioButton
            android:id="@+id/radioButton1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Rock"/>

        <RadioButton
            android:id="@+id/radioButton2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
```

```
        android:text="Pop"/>
```

```
    <RadioButton  
        android:id="@+id/radioButton3"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:text="Jazz"/>
```

```
</RadioGroup>
```

```
<Button  
    android:id="@+id/buttonSubmit"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="Submit"/>
```

```
</LinearLayout>
```

```
package com.example.prac6radiobutton;
```

```
MainActivity.java:
```

```
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.RadioButton;  
import android.widget.RadioGroup;  
import android.widget.TextView;  
import android.widget.Toast;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    private RadioGroup radioGroup;  
    private Button buttonSubmit;
```

```
    @Override
```

```

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

    radioGroup = findViewById(R.id.radioGroup);
    buttonSubmit = findViewById(R.id.buttonSubmit);

    buttonSubmit.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            int selectedId = radioGroup.getCheckedRadioButtonId();

            if (selectedId != -1) {
                RadioButton selectedRadioButton =
                findViewById(selectedId);
                String selectedText =
                selectedRadioButton.getText().toString();
                Toast.makeText(MainActivity.this, "Selected Genre: " +
                selectedText, Toast.LENGTH_SHORT).show();
            } else {
                Toast.makeText(MainActivity.this, "Please select a
                genre", Toast.LENGTH_SHORT).show();
            }
        }
    });
}

```


For menu

avtivity_main.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">

    <Button
        android:id="@+id/btnShowMenu"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Show Menu Dialog"
        android:layout_centerInParent="true" />
</RelativeLayout>
```

MainActivity.java:

```
package com.example.prac5menu;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    private Button btnShowMenu;

    @Override
```

```

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

    btnShowMenu = findViewById(R.id.btnShowMenu);

    btnShowMenu.setOnClickListener(v -> showMenuDialog());
}

private void showMenuDialog() {
    // Define menu options
    String[] menuOptions = {"Option 1", "Option 2", "Option 3",
"Cancel"};

    // Create an AlertDialog
    AlertDialog.Builder builder = new AlertDialog.Builder(this);
    builder.setTitle("Choose an Option");

    // Set menu items and click listener
    builder.setItems(menuOptions, (dialog, which) -> {
        switch (which) {
            case 0:
                Toast.makeText(MainActivity.this, "You selected Option
1", Toast.LENGTH_SHORT).show();
                break;
            case 1:
                Toast.makeText(MainActivity.this, "You selected Option
2", Toast.LENGTH_SHORT).show();
                break;
            case 2:
                Toast.makeText(MainActivity.this, "You selected Option
3", Toast.LENGTH_SHORT).show();
                break;
            Toast.makeText(MainActivity.this, "You selected Option 3",
Toast.LENGTH_SHORT).show();
        }
    });
}

```

```

        break;
    case 3:
        dialog.dismiss(); // Close the dialog if "Cancel" is
selected
        break;
    }
});

// Show the dialog
builder.create().show();
}
}

```

registrationForm

avtivity_main.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<ScrollView
xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:padding="16dp">

        <EditText
            android:id="@+id/editName"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Full Name"
            android:inputType="textPersonName" />
    </LinearLayout>
</ScrollView>

```

```
<EditText
    android:id="@+id/editEmail"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Email Address"
    android:inputType="textEmailAddress" />

<EditText
    android:id="@+id/editPassword"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Password"
    android:inputType="textPassword" />
<EditText
    android:id="@+id/editConfirmPassword"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Confirm Password"
    android:inputType="textPassword" />

<Button
    android:id="@+id/btnRegister"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Register" />
</LinearLayout>
</ScrollView>
```

MainActivity.java:

```
package com.example.prac4registrationform;

import androidx.appcompat.app.AppCompatActivity;
```

```

import android.os.Bundle;
import android.text.TextUtils;
import android.util.Patterns;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    private EditText editName, editEmail, editPassword,
editConfirmPassword;
    private Button btnRegister;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        // Initialize UI components
        editName = findViewById(R.id.editName);
        editEmail = findViewById(R.id.editEmail);
        editPassword = findViewById(R.id.editPassword);
        editConfirmPassword =
findViewById(R.id.editConfirmPassword);
        btnRegister = findViewById(R.id.btnRegister);

        // Set click listener for Register button
        btnRegister.setOnClickListener(v -> {
            if (validateInputs()) {
                Toast.makeText(MainActivity.this, "Registration
Successful!", Toast.LENGTH_SHORT).show();
                clearInputs();
            }
        });
    }
}

```

```

// Validate user inputs
private boolean validateInputs() {
    String name = editName.getText().toString().trim();
    String email = editEmail.getText().toString().trim();
    String password = editPassword.getText().toString();
    String confirmPassword =
editConfirmPassword.getText().toString();

    if (TextUtils.isEmpty(name)) {
        editName.setError("Name is required");
        return false;
    }
    if (TextUtils.isEmpty(email) ||
!Patterns.EMAIL_ADDRESS.matcher(email).matches()) {
        editEmail.setError("Valid email is required");
        return false;
    }

    if (TextUtils.isEmpty(password) || password.length() < 6) {
        editPassword.setError("Password must be at least 6
characters");
        return false;
    }

    if (!password.equals(confirmPassword)) {
        editConfirmPassword.setError("Passwords do not match");
        return false;
    }

    return true;
}

// Clear all input fields after successful registration
private void clearInputs() {
    editName.setText("");

```

```

        editEmail.setText("");
        editPassword.setText("");
        editConfirmPassword.setText("");
    }
}

```

Lifecycle

avtivity_main.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">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Check Logcat for Activity Lifecycle Logs"
        android:textSize="18sp"
        android:layout_centerInParent="true" />
</RelativeLayout>

```

MainActivity.java:

```

package com.example.prac3lifecycle;

import android.os.Bundle;
import android.util.Log;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private static final String TAG = "ActivityLifecycle";
}

```

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    Log.d(TAG, "onCreate() called");
}
```

```
@Override
protected void onStart() {
    super.onStart();
    Log.d(TAG, "onStart() called");
}
```

```
@Override
protected void onResume() {
    super.onResume();
    Log.d(TAG, "onResume() called");
}
```

```
@Override
protected void onPause() {
    super.onPause();
    Log.d(TAG, "onPause() called");
}
```

```
@Override
protected void onStop() {
    super.onStop();
    Log.d(TAG, "onStop() called");
}
```

```
@Override
protected void onRestart() {
    super.onRestart();
    Log.d(TAG, "onRestart() called");
}
```



```
@Override
protected void onDestroy() {
    super.onDestroy();
    Log.d(TAG, "onDestroy() called");
}
}
```