

Program 1:

1. Creating "Hello world" Application.

activity_main.xml code :

```
<?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"
    tools:context=".MainActivity">
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Click_me"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java Code :

```
package com.example.anushamad03;
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 {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button b;
        b=findViewById(R.id.button);
        b.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Toast.makeText(MainActivity.this, "Hey! We are using Android Application",
                Toast.LENGTH_SHORT).show();
            }
        });
    }
}
```

program 2:

2. Creating an application that displays message based on the screen orientation.

activity_main.xml code:

```
<?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"
    tools:context=".MainActivity">
    <Button
        android:id="@+id/por"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Portrait"
        android:layout_centerInParent="true"/>
    <Button
        android:id="@+id/lan"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Landscape"
        android:layout_below="@+id/por"
        android:layout_centerInParent="true" />
</RelativeLayout>
```

MainActivity.java code:

```
package com.example.anushamad03;
import android.content.pm.ActivityInfo;
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 {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button l,p;
        l=findViewById(R.id.lan);
        p=findViewById(R.id.por);
        l.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                setRequestedOrientation(ActivityInfo.SCREEN_ORIENTATION_LANDSCAPE);
                Toast.makeText(MainActivity.this, "Hey! We are in Landscape orientation",
                Toast.LENGTH_SHORT).show();
            }
        });
        p.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                setRequestedOrientation(ActivityInfo.SCREEN_ORIENTATION_PORTRAIT);
                Toast.makeText(MainActivity.this, "Hey! We are in Portrait
```

```

orientation", Toast.LENGTH_SHORT).show();
    }
});
}
}

```

Program 3:

3. Create an application to develop Login window using UI controls.

activity_main.xml code:

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    tools:context=".MainActivity"
    android:orientation="vertical">

    <TextView
        android:id="@+id/textView6"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Login"
        android:gravity="center"/>

    <EditText
        android:id="@+id/editTextText8"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="text"
        android:text="Name" />

    <EditText
        android:id="@+id/editTextText9"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="text"
        android:text="password" />

    <Button
        android:id="@+id/button3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="login" />

</LinearLayout>

```

MainActivity.java code:

```
package com.example.jithin33lab;
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 MainActivity extends AppCompatActivity {
    private EditText a,b;
    private Button c;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);
        a= findViewById(R.id.editTextText8);
        b= findViewById(R.id.editTextText9);
        c = findViewById(R.id.button3);
        c.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String username = a.getText().toString().trim();
                String password = b.getText().toString().trim();
                if(username.equals("admin") && password.equals("pass")){
                    Toast.makeText(MainActivity.this, "Login successful", Toast.LENGTH_SHORT).show();
                } else {
                    Toast.makeText(MainActivity.this, "Invalid username or password",
                    Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}
```

Program 4 :

4. Create an application to implement new activity using explicit intent, implicit intent and content provider. 5

1. Click New Project, the New Project Dialog box appears.
2. Choose Empty Views Activity then click Next.
3. Specify the Name of your project, Select the Language as Java, and Select the Minimum SDK as API 16 ("Jelly Bean", Android 4.1).
4. Click Finish Button.

activity_main.xml code:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
tools:context=".MainActivity"
android:orientation="vertical"
android:padding="30dp">
<Button
    android:id="@+id/btnExplicitContent"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Explicit Content"
    android:textSize="30sp"
    android:layout_marginTop="30dp"></Button>

```

</LinearLayout>

Mainactivity.java code:

```

package com.example.joshimad31;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class MainActivity extends AppCompatActivity {
    Button btnExplicitContent;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        btnExplicitContent=findViewById(R.id.btnExplicitContent);
        btnExplicitContent.setOnClickListener(new View.OnClickListener() { @Override
        public void onClick(View view) {
            Intent intent = new Intent(MainActivity.this, NewActivity.class);
            startActivity(intent);
        }
        });
    }
}

```

Next step : To create another activity for Explicit Intent, Go to File --> Click On New --> window opens select Activity ---> Empty Views Activity

opens a dialog window Empty Views activity there give file name as NextActivity and Layout name is activity_new click ok

activity_new.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    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"
tools:context=".NewActivity"
android:orientation="vertical"
android:padding="30dp">
<Button
    android:id="@+id/btnImplicitContent"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Implicit Content"
    android:textSize="30sp"
    android:layout_marginTop="30dp">

</Button>
</LinearLayout>

```

Newactivity.java code :

```

package com.example.joshimad31;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class NewActivity extends AppCompatActivity {
    Button btnImplicitContent;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_new);
        btnImplicitContent=findViewById(R.id.btnImplicitContent);
        btnImplicitContent.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Uri webpage = Uri.parse("http://www.openglprojects.in");
                Intent intent = new Intent(Intent.ACTION_VIEW, webpage);
                startActivity(intent);
            }
        });
    }
}

```

Program 5:

Create an application that displays custom designed Opening Screen.

Click Start → Android Studio, a Welcome to Android Studio dialog box will appear.

1. Click New Project, the New Project Dialog box appears.
2. Choose Empty Views Activity then click Next.
3. Specify the Name of your project, Select the Language as Java, and Select the Minimum SDK as API 16 ("Jelly Bean", Android 4.1). Click Finish Button.

activity_main.xml

```

<?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"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/idTVHeading"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:layout_margin="20dp"
        android:gravity="center"
        android:padding="10dp"
        android:text="Background Drawable in Android"
        android:textAlignment="center"
        android:textColor="@color/black"
        android:textSize="20sp"
        android:textStyle="bold" />
</RelativeLayout>

```

Main_activity.java

```

package com.example.joshimad51;
import android.os.Bundle;
import android.widget.RelativeLayout;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
    private RelativeLayout containerRL;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        containerRL = findViewById(R.id.main);
        // on below line we are setting background for
        // our relative layout on below line.
        containerRL.setBackground(getResources().getDrawable(R.drawable.back_drawable));
    }
}

```

Next Step : app --> res--> drawable --> right click on drawable --> Select New --> Click Drawable resource File -->

New Resource file window will be opened give filename as "back_drawable.xml" and give root element as shape and set source as main and then click OK.

back_drawable.xml file is Created

back_drawable.xml Code:

```

<?xml version="1.0" encoding="utf-8"?>

```

```

<shape xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle">
    <gradient
        android:angle="270"
        android:endColor="@color/white"
        android:startColor="#2C3A87" />
</shape>

```

Program Mad 6:

activity_main.xml code:

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    tools:context=".MainActivity"
    android:orientation="vertical">

    <TextView
        android:id="@+id/textView7"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="klestudents_good"
        android:gravity="center"/>

    <Button
        android:id="@+id/button4"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Button" />

</LinearLayout>

```

MainActivity.Java code:

```

package com.example.joshi_mad6;
package com.example.jithin33lab;
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 TextView a;
    private Button b;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        // Initialize views

```



```

a= findViewById(R.id.textView7);
b= findViewById(R.id.button4);

// Set click listener for the button
b.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        a.setText("All the bset");
    }
});
}
}
}

```

Program Mad 7:

create an UI with ALL Views

activity_main code:

```

<?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">

    <!-- Name EditText -->
    <EditText
        android:id="@+id/editTextName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Name"
        android:inputType="text"/>

    <!-- Date of Birth EditText -->
    <EditText
        android:id="@+id/editTextDOB"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Date of Birth"
        android:inputType="date"/>

    <!-- Gender RadioGroup -->
    <RadioGroup
        android:id="@+id/radioGroupGender"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal">

        <RadioButton
            android:id="@+id/radioButtonMale"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Male"/>

```

```

<RadioButton
    android:id="@+id/radioButtonFemale"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Female"/>

</RadioGroup>

<!-- Checkbox for terms and conditions -->
<CheckBox
    android:id="@+id/checkboxTerms"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="I agree to the Terms and Conditions"/>

<!-- Submit Button -->
<Button
    android:id="@+id/buttonSubmit"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Register"/>

</LinearLayout>

```

MainActivity.java code :

```

package com.example.joshi_mad_7;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private EditText editTextName, editTextDOB;
    private RadioGroup radioGroupGender;
    private CheckBox checkBoxTerms;
    private Button buttonSubmit;

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

        // Initialize views
        editTextName = findViewById(R.id.editTextName);
        editTextDOB = findViewById(R.id.editTextDOB);
    }
}

```

```

radioGroupGender = findViewById(R.id.radioGroupGender);
checkBoxTerms = findViewById(R.id.checkBoxTerms);
buttonSubmit = findViewById(R.id.buttonSubmit);

// Set click listener for the submit button
buttonSubmit.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        // Retrieve user input
        String name = editTextName.getText().toString().trim();
        String dob = editTextDOB.getText().toString().trim();
        int selectedGenderId = radioGroupGender.getCheckedRadioButtonId();
        String gender = getGenderFromId(selectedGenderId);
        boolean termsChecked = checkBoxTerms.isChecked();

        // Validate user input
        if (name.isEmpty() || dob.isEmpty() || gender.isEmpty() || !termsChecked) {
            Toast.makeText(MainActivity.this, "Please fill in all fields and agree to terms.",
                Toast.LENGTH_SHORT).show();
        } else {
            // Process registration (e.g., save to database, etc.)
            Toast.makeText(MainActivity.this, "Registration successful",
                Toast.LENGTH_SHORT).show();
            // Optionally, you can navigate to another activity or perform other actions here
        }
    }
});
}

// Helper method to get gender from radio button ID
private String getGenderFromId(int selectedId) {
    RadioButton radioButtonMale = findViewById(R.id.radioButtonMale);
    RadioButton radioButtonFemale = findViewById(R.id.radioButtonFemale);

    if (selectedId == radioButtonMale.getId()) {
        return "Male";
    } else if (selectedId == radioButtonFemale.getId()) {
        return "Female";
    } else {
        return "";
    }
}
}
}

```

Program 8 : Learn to deploy Android applications.

Learn to deploy Android applications

Steps to Deploy an Android Application

1. Prepare App (use Program 1 Hello world for this program) Optimize performance and test thoroughly. Ensure compatibility with various devices.

activity_main.xml Code:

```

<?xml version="1.0" encoding="utf8"?>
<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"
tools:context=".MainActivity">

<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Hello World!"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
android:textSize="30sp"/>
</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

package com.example.helloworld;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
public class MainActivity extends AppCompatActivity
{
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}

```

2. Generate Signed APK (Android Package Kit):

In Android Studio, navigate to Build > Generate Signed Bundle/APK.

Follow the prompts to create a new keystore or use an existing one. A keystore is a binary file that contains a set of private keys.

Configure the build type (release) and signing configuration.

Generate the signed APK file.

3. Test Your Signed APK:

Before distributing your app, test the signed APK to ensure that the signing process didn't introduce any issues.

Install the APK on various devices and perform thorough testing.

Release on Google Play Console:

Sign in to the Google Play Console (<https://play.google.com/apps/publish>).

Create a new app entry if this is your first release or select an existing app.

Complete all the required information for the app listing, including the title, description, screenshots, and categorization.

Upload your signed APK file.

Set pricing and distribution options.

Optimize your store listing for search and conversion.

Once everything is set, click the "Publish" button to release your app to the Google Play Store.

5. Other Distribution Channels (Optional):

Besides Google Play, you can distribute your app through other channels such as Amazon Appstore, Samsung Galaxy Store, or third party app marketplaces.

Each distribution channel may have its own requirements and submission process, so be sure to follow their guidelines.

6. Monitor and Update:

Keep an eye on user feedback and app performance metrics through the Google Play Console.

Regularly update your app to fix bugs, add new features, and improve user experience based on feedback.