

PRACTICAL – 2

Aim:- Aim:- Create an android application to design screens using different layouts and UI including Button, Edittext, Textview, Radio Button etc.

activity_main.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:layout_width="match_parent"
    android:layout_height="match_parent"
    android:id="@+id/linear1"
    android:orientation="vertical"
    tools:context=".MainActivity">
```

```
    <EditText
        android:id="@+id/name_value"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Yadav Nitin S-124"
        android:inputType="textPersonName" />
```

```
    <TextView
        android:id="@+id/textViewResponse"
        android:layout_width="110dp"
        android:layout_height="wrap_content"
        android:textSize="14dp"
        android:textStyle="bold|italic" />
```

```
    <TextView
        android:id="@+id/gender"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Gender"
        android:textSize="20sp" />
```

```
    <RadioGroup
        android:id="@+id/selectgender"
        android:layout_width="129dp"
        android:layout_height="wrap_content">
```

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

```

<RadioButton
    android:id="@+id/radioButton2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Female" />
</RadioGroup>

```

```

<TextView
    android:id="@+id/lang"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="My Likes"
    android:textSize="20sp" />

```

```

<CheckBox
    android:id="@+id/checkBox2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Kotlin" />

```

```

<CheckBox
    android:id="@+id/checkBox1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Python" />

```

```

<Button
    android:id="@+id/button_click"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Submit"
    tools:layout_editor_absoluteX="159dp"
    tools:layout_editor_absoluteY="202dp" />

```

```

<TextView
    android:id="@+id/language"
    android:layout_width="120dp"
    android:layout_height="wrap_content"
    android:textStyle="bold" />

```

```

<Spinner
    android:id="@+id/spinner"
    android:padding="10dp"
    android:layout_width="wrap_content"
    android:layout_height="48dp"/>

```

```

<TextView
    android:id="@+id/course"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text=" Your Class"
    android:textSize="18sp" />

```

```

<TextView
    android:id="@+id/myclass"
    android:layout_width="107dp"
    android:layout_height="wrap_content"
    android:textStyle="bold" />

```

```

</LinearLayout>

```

MainActivity.kt

```

package com.example.practical2
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.view.View
import android.widget.AdapterView
import android.widget.ArrayAdapter
import android.widget.Button
import android.widget.CheckBox
import android.widget.EditText
import android.widget.RadioButton
import android.widget.RadioGroup
import android.widget.Spinner
import android.widget.TextView

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        val submitButton = findViewById<Button>(R.id.button_click)
        val name_value = findViewById<EditText>(R.id.name_value)
        val inputbyUser = findViewById<TextView>(R.id.gender)

        submitButton.setOnClickListener {
            var user_Input = name_value.text
            inputbyUser.setText(user_Input)
        }

        /*val Name = findViewById<EditText>(R.id.name)*/
        // val submitButton2 = findViewById<Button>(R.id.button)
        val dispMessage = findViewById<TextView>(R.id.textViewResponse)
        val radioGroup = findViewById<RadioGroup>(R.id.selectgender)

        val radioB1 = findViewById<RadioButton>(R.id.radioButton1)

        val radioB2 = findViewById<RadioButton>(R.id.radioButton2)

        val CheckB1 = findViewById<CheckBox>(R.id.checkBox1)

```

```

val CheckB2 = findViewById<CheckBox>(R.id.checkBox2)

val CodingLang = findViewById<TextView>(R.id.language)

val Universityyear = findViewById<Spinner>(R.id.spinner)

val myclass = findViewById<TextView>(R.id.myclass)
val year = arrayOf("FYCS", "SYCS", "TYCS") // Dropdown list items for Spinner

val arrayAdp = ArrayAdapter(
    this,
    android.R.layout.simple_spinner_dropdown_item, year
)
Universityyear.adapter = arrayAdp
Universityyear.onItemSelectedListener = object :
    AdapterView.OnItemSelectedListener {
override fun onItemSelected(p0: AdapterView<*>?, p1: View?, position: Int, p3: Long) {
    myclass.text = "Your Class: " + year[position]
}
    override fun onNothingSelected(p0: AdapterView<*>?) {
        myclass.text = "Please select Your Class"
    }
}
radioGroup.setOnCheckedChangeListener { group, checkedId ->
    if (checkedId == R.id.radioButton1)
        dispMessage.text = "Gender: " + radioB1.text

    if (checkedId == R.id.radioButton2)
        dispMessage.setText("Gender: " + radioB2.text)
}
/*submitButton.setOnClickListener {
    dispMessage.setText("Welcome " + name.text)

    //Putting all checkbox conditions
    if(CheckB1.isChecked && CheckB2.isChecked) {
        CodingLang.text= "You love both languages"
    }
    else if(CheckB1.isChecked) {
        CodingLang.text= "You love Python"
    }
    else if(CheckB2.isChecked) {
        CodingLang.text= "You love Kotlin"
    }
    else {
        CodingLang.text= "You don't like these languages" }
}*/
}
override fun onResume() {
    super.onResume()
}

```

PRACTICAL – 3A**Aim: -Create an application to create Image Flipperand Image Gallery*****activity_main.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:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="2dp"
    android:weightSum="100"
    android:orientation="vertical"
    tools:context=".MainActivity">

```

```

<EditText
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Yadav Nitin S-124"
    android:layout_gravity="center"
    android:gravity="center"
    android:margintop=200dp />

```

```

<ImageView
    android:id="@+id/imageView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="90" />

```

```

<LinearLayout
    android:layout_weight="20"
    android:layout_gravity="center"
    android:gravity="center"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">

```

```

<Button
    android:id="@+id/buttonFlipPicture"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_weight="0"
    android:layout_margin="8dp"
    android:text="Flip Picture" />

```

```

<Button
    android:id="@+id/buttonLoadPicture"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"

```

```

    android:layout_gravity="center"
    android:layout_weight="0"
    android:layout_margin="8dp"
    android:text="Load Picture" />

```

```
</LinearLayout>
```

```
</LinearLayout>
```

MainActivity.kt

```
package com.example.androidpracticals3
```

```

import android.content.Intent
import android.net.Uri
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.provider.MediaStore
import android.widget.Button
import android.widget.ImageView
import android.widget.Toast
import kotlinx.android.synthetic.main.activity_main.buttonFlipPicture
class MainActivity : AppCompatActivity()
{
    lateinit var imageView: ImageView
    lateinit var button: Button
    private val pickImage = 100
    private var imageUri: Uri? = null

    override fun onCreate(savedInstanceState: Bundle?)
    {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        imageView = findViewById(R.id.imageView)
        button = findViewById(R.id.buttonLoadPicture)
        button.setOnClickListener
    {
        val gallery = Intent(Intent.ACTION_PICK, MediaStore.Images.Media.INTERNAL_CONTENT_URI)
        startActivityForResult(gallery, pickImage) }
        buttonFlipPicture.setOnClickListener() {
            // imageView.scaleX = -1f
            // Flip vertically
            imageView.scaleY = -1f
            Toast.makeText(this, "Image Flipped!!!", Toast.LENGTH_LONG).show() } }
    override fun onActivityResult(requestCode: Int, resultCode: Int, data: Intent?) {
        super.onActivityResult(requestCode, resultCode, data)
        imageUri = data?.data
        imageView.setImageURI(imageUri)
        imageView.setOnClickListener() {
            Toast.makeText(this, data?.data?.path, Toast.LENGTH_LONG).show() }
    }
}

```

PRACTICAL – 3B

Aim:- Create an application to use Gridview for shopping cart application

activity_practical3_b.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"
    tools:context=".practical3b.Practical3_B">

    <<EditText
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Yadav Nitin S-124"
        android:layout_gravity="center"
        android:gravity="center"
        android:margintop=200dp />

    <GridView
        android:id="@+id/gridView"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:numColumns="2" />

</RelativeLayout >
```

row_item.xml

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

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:src="@drawable/ic_launcher_foreground"
        android:scaleType="centerCrop"/>

    <TextView
        android:textAlignment="center"
```

```

    android:gravity="center"
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:text="Numbers"
    android:layout_marginBottom="10dp"
    android:textColor="#000000"
    android:textSize="24sp"
    android:textStyle="bold" />

```

```
</LinearLayout>
```

Pratctical3_B.kt

```

package com.android.myapplication.practical3b

import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.widget.AdapterView
import android.widget.GridView
import android.widget.Toast
import com.example.androidpracticals3.R

class Practical3_B : AppCompatActivity()
{
    lateinit var gridView: GridView

    var gridView_Text = arrayOf("iphone 15", "Coming Soon", "Item 3", "Item 4", "Product 5",
                                "Product 6", "Test Jr", "Test Test", "Logo Logo")

    // Mutable -> Can Change // Immutable -> Cannot Change
    private var gridView_Images = intArrayOf(
        R.drawable.ic_launcher_foreground, R.drawable.ic_launcher_foreground,
        R.drawable.ic_launcher_foreground, R.drawable.ic_launcher_foreground,
        R.drawable.ic_launcher_foreground, R.drawable.ic_launcher_foreground,
        R.drawable.ic_launcher_foreground, R.drawable.ic_launcher_foreground
    )

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_practical3_b)

        gridView = findViewById(R.id.gridView)
        // val gridView = findViewById<GridView>(R.id.gridView)

        val mainAdapter = MainAdapter(this, gridView_Text, gridView_Images)
        gridView.adapter = mainAdapter

        gridView.setOnItemClickListener = AdapterView.OnItemClickListener { _, _, position, _ ->

```



```

        Toast.makeText(applicationContext, "Item Selected: " + gridView_Text[+position],
        Toast.LENGTH_SHORT).show()
    }

}

```

MainAdapter.kt

```
package com.android.myapplication.practical3b
```

```

import android.content.Context
import android.view.LayoutInflater
import android.view.View
import android.view.ViewGroup
import android.widget.BaseAdapter
import android.widget.ImageView
import android.widget.TextView
import com.example.androidpracticals3.R

```

```
// Adapter acts as a bridge between the UI component and data sources
```

```

class MainAdapter(
    private val context: Context,
    private val gridText: Array<String>,
    private val gridImage: IntArray
) : BaseAdapter() {
    private var inflater: LayoutInflater? = null
    private lateinit var imageView: ImageView
    private lateinit var textView: TextView
    override fun getCount(): Int {
        return gridText.size
    }
    override fun getItem(position: Int): Any? {
        return null
    }
    override fun getItemId(position: Int): Long {
        return
    }
    override fun getView(
        position: Int,
        convertView: View?,
        parent: ViewGroup): View? {
        var convertView = convertView
        if (inflater == null) {
            inflater =
                context.getSystemService(Context.LAYOUT_INFLATER_SERVICE) as LayoutInflater
        }
        if (convertView == null) {
            convertView = inflater!!.inflate(R.layout.row_item, null)
        }
        imageView = convertView!!.findViewById(R.id.imageView)
        textView = convertView.findViewById(R.id.textView)
        imageView.setImageResource(gridImage[position])
        textView.text = gridText[position]
        return convertView
    }
}

```

PRACTICAL – 4A**Aim:-Create an application to demonstrate implicit and explicit intents*****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:layout_width="match_parent"
    android:layout_height="match_parent"
    android:weightSum="10"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <EditText
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Yadav Nitin S-124"
        android:layout_gravity="center"
        android:gravity="center"
        android:marginTop=200dp />

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_above="@+id/linearBottom"
        android:layout_alignParentTop="true"
        android:layout_marginTop="0dp"
        android:layout_marginBottom="0dp"
        android:fontFamily="serif"
        android:gravity="center"
        android:text="@string/practical_3"
        android:textSize="48sp"
        android:textStyle="italic" />

    <LinearLayout
        android:id="@+id/linearBottom"
        android:layout_alignParentBottom="true"
        android:gravity="center"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginBottom="26dp">

        <Button
            android:id="@+id/btnClick_explicit_intent"
            android:layout_width="wrap_content"
            android:layout_height="50dp"
            android:layout_marginEnd="16dp"

```

```
android:text="@string/explicit_intent"/>
```

```
<Button
```

```
    android:id="@+id/btnClick_implicit_intent"
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="50dp"
```

```
    android:layout_marginStart="16dp"
```

```
    android:text="@string/implicit_intent" />
```

```
</LinearLayout>
```

```
</RelativeLayout>
```

MainActivity.kt

```
package com.example.practical3
```

```
import android.content.Intent
```

```
import android.net.Uri
```

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

```
import android.os.Bundle
```

```
import kotlinx.android.synthetic.main.activity_main.btnClick_explicit_intent
```

```
import kotlinx.android.synthetic.main.activity_main.btnClick_implicit_intent
```

```
class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
```

```
    // Explicit Intent
```

```
    btnClick_explicit_intent.setOnClickListener {
        val intent = Intent(this, MainActivity2::class.java)
        startActivity(intent)
    }
```

```
    // Implicit Intent
```

```
    btnClick_implicit_intent.setOnClickListener {
```

```
        val intent = Intent(Intent.ACTION_DIAL)
```

```
        intent.data = Uri.parse("tel:1234567890")
```

```
        startActivity(intent)
```

```
        /*val intent = Intent(Intent.ACTION_VIEW, Uri.parse("https://www.example.com"))
```

```
        startActivity(intent)*/
```

```
    }
```

```
}
```

```
}
```

AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Practical3"
        tools:targetApi="31">

        <activity
            android:name=".MainActivity2"
            android:exported="false" />

        <activity
            android:name=".MainActivity"
            android:exported="true">

            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>

        </activity>

    </application>
</manifest>

```

PRACTICAL – 4B**Aim:-Create an application to demonstrate shared preferences*****activity_main2.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:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity2">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:fontFamily="serif"
        android:gravity="center"
        android:text="Activity 2,\nvia Explicit Intent!!"
        android:textSize="34sp"
        android:background="@color/black"
        android:textColor="@color/white"
        android:textStyle="italic" />

    <EditText
        android:id="@+id/usernameEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Yadav Nitin S-124"
        android:layout_marginStart="10dp"
        android:layout_marginTop="10dp"
        android:layout_marginEnd="10dp"
        android:layout_marginBottom="10dp"
        android:hint="Enter your username" />

    <Button
        android:id="@+id/saveButton"
        android:layout_margin="10dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/usernameEditText"
        android:layout_marginTop="16dp"
        android:text="Save"/>

    <TextView
        android:id="@+id/confirmationTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"

```

```

    android:layout_margin="16dp"
    android:textColor="@color/white"
    android:layout_below="@id/saveButton"/>

```

```
</RelativeLayout>
```

MainActivity2.kt

```

package com.example.practical3
import android.content.Context
import android.content.SharedPreferences
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import kotlinx.android.synthetic.main.activity_main2.confirmationTextView
import kotlinx.android.synthetic.main.activity_main2.saveButton
import kotlinx.android.synthetic.main.activity_main2.usernameEditText
class MainActivity2 : AppCompatActivity()
{
    private lateinit var sharedPreferences: SharedPreferences
    private val sharedPrefFile = "my_sharedprefs_file"
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main2)
        // Initialize SharedPreferences
        sharedPreferences = getSharedPreferences(sharedPrefFile, Context.MODE_PRIVATE)
        // Check if data is already saved in SharedPreferences
        if (sharedPreferences.contains("username")) {
            // If data is present, display it
            val savedUsername = sharedPreferences.getString("username", "")
            usernameEditText.setText(savedUsername)
        }
        // Save button click listener
        saveButton.setOnClickListener {
            saveData()
        }
    }

    private fun saveData() {
        // Get username from EditText
        val username = usernameEditText.text.toString()
        // Save username to SharedPreferences
        val editor = sharedPreferences.edit()
        editor.putString("username", username)
        editor.apply()
        // Display confirmation message
        confirmationTextView.text = "Data saved successfully"
    }
}

```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Practical3"
        tools:targetApi="31">

        <activity
            android:name=".MainActivity2"
            android:exported="false" />

        <activity
            android:name=".MainActivity"
            android:exported="true">

            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />

            </intent-filter>
        </activity>
    </application>

</manifest>
```

PRACTICAL – 5A**Aim:-Create an application to demonstrate the use of broadcastlisteners*****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:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

```

```

<EditText
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Yadav Nitin S-124"
    android:layout_gravity="center"
    android:gravity="center"
    android:margintop=200dp />

```

```

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerInParent="true"
    android:text="Hello World!" />

```

```

<Button
    android:layout_width="match_parent"
    android:layout_height="50dp"
    android:layout_marginBottom="8dp"
    android:text="Check Again"
    android:backgroundTint="@color/black"
    android:textColor="@color/white"
    android:onClick="checkConnectivity"
    android:layout_alignParentBottom="true"/>

```

```

</RelativeLayout>

```

MainActivity.kt

```

package com.example.practical5
import android.net.ConnectivityManager
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.view.View
import android.widget.Toast

```

```

class MainActivity : AppCompatActivity() {

```



```

override fun onCreate(savedInstanceState: Bundle?) {
    super.onCreate(savedInstanceState)
    setContentView(R.layout.activity_main)
    checkInternetCode(this) }
fun checkConnectivity(view: View) {
    checkInternetCode(this) }
fun checkInternetCode(mainActivity: MainActivity) {
    val connectivityManager = getSystemService(CONNECTIVITY_SERVICE) as ConnectivityManager
    val networkInfo= connectivityManager.activeNetworkInfo
    if (networkInfo != null && networkInfo.isConnected) {
        if (networkInfo.type == ConnectivityManager.TYPE_MOBILE) {
            Toast.makeText(this, "Device connected to Mobile data", Toast.LENGTH_LONG).show() }
        if (networkInfo.type == ConnectivityManager.TYPE_WIFI) {
            Toast.makeText(this, "Device connected to WiFi", Toast.LENGTH_LONG).show() }
    } else {
        Toast.makeText(this, "You are Offline", Toast.LENGTH_LONG).show( ) } }

```

AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Practical5"
        tools:targetApi="31">
        <activity
            android:name=".Practical5_B"
            android:exported="true" >
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <activity
            android:name=".MainActivity"
            android:exported="true">
        </activity>

        <service android:name=".MyService"/>

    </application>
</manifest>

```

PRACTICAL – 5B**Aim:-Create an application to create and use services.*****activity_practical5_b.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:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".Practical5_B">
```

```
<EditText
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Yadav Nitin S-124"
    android:layout_gravity="center"
    android:gravity="center"
    android:margintop=200dp />
```

```
<EditText
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Yadav Nitin S-124"
    android:padding="120dp" />
```

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerInParent="true"
    android:text="Hello World!" />
```

```
<Button
    android:id="@+id/stopService_btn"
    android:layout_width="match_parent"
    android:layout_height="50dp"
    android:layout_marginBottom="8dp"
    android:text="Stop Service"
    android:backgroundTint="@color/black"
    android:textColor="@color/white"
    android:layout_alignParentBottom="true"/>
```

```
</RelativeLayout>
```

MyService.kt

```
package com.example.practical5
import android.app.Service
import android.content.Intent
```

```

import android.os.Handler
import android.os.IBinder
import android.widget.Toast

class MyService : Service() {

    private val handler = Handler()
    private val runnable = object : Runnable {
        override fun run() {
            showToast()
            handler.postDelayed(this, 5000) // Toast every 5 seconds
        }
    }
    private fun showToast() {
        Toast.makeText(this, "Service is running", Toast.LENGTH_SHORT).show()
    }
    override fun onCreate() {
        super.onCreate()
        handler.postDelayed(runnable, 0)
    }
    override fun onStartCommand(intent: Intent?, flags: Int, startId: Int): Int {
        return START_STICKY
    }
    override fun onDestroy() {
        super.onDestroy()
        handler.removeCallbacks(runnable)
    }
    override fun onBind(intent: Intent?): IBinder? {
        return null
    }
}

```

Practical5_B.kt

```

package com.example.practical5

import android.content.Intent
import android.os.Bundle
import android.widget.Button
import androidx.appcompat.app.AppCompatActivity

class Practical5_B : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_practical5_b)

        // Start the service
        val serviceIntent = Intent(this, MyService::class.java)
        startService(serviceIntent)
    }
}

```

```

val stopService_btn = findViewById<Button>(R.id.stopService_btn)

stopService_btn.setOnClickListener {
    stopService(serviceIntent)
}
}
}

```

AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Practical5"
        tools:targetApi="31">

        <activity
            android:name=".Practical5_B"
            android:exported="true" >

            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>

        </activity>

        <activity
            android:name=".MainActivity"
            android:exported="true">
        </activity>

        <service android:name=".MyService"/>
    </application>
</manifest>

```

PRACTICAL – 6A

Aim:-Create an android application to demonstrate XML based animations.

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:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_gravity="center"
    android:gravity="center"
    tools:context=".MainActivity">
    <EditText
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Yadav Nitin S-124"
        android:layout_gravity="center"
        android:gravity="center"
        android:marginTop=200dp />
    <Button
        android:id="@+id/bounceButton"
        android:backgroundTint="@color/black"
        android:textColor="#ffffff"
        android:text="Let's Bounce"
        android:layout_width="200dp"
        android:layout_height="80dp"/>
    <Button
        android:id="@+id/normalButton"
        android:backgroundTint="@color/red"
        android:textColor="#ffffff"
        android:layout_below="@+id/bounceButton"
        android:text="Normal Button"
        android:layout_width="200dp"
        android:layout_height="80dp"/>
    <Button
        android:id="@+id/leftToRight_Button"
        android:backgroundTint="@color/black"
        android:textColor="#ffffff"
        android:layout_below="@+id/normalButton"
        android:text="Left to right animation"
        android:layout_width="200dp"
        android:layout_height="80dp"/>
    <Button
        android:id="@+id/rightToLeft_Button"
        android:backgroundTint="@color/black"
        android:textColor="#ffffff"
```

```

    android:layout_below="@+id/leftToRight_Button"
    android:text="Right to Left animation"
    android:layout_width="200dp"
    android:layout_height="80dp"/>
</RelativeLayout>

```

create a folder in res and name it anim
then create a xm file

bounce.xml

```

<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android"
    android:fillAfter="true"
    android:interpolator="@android:anim/bounce_interpolator">
    <scale
        android:fromXScale="0.5"
        android:fromYScale="0.5"
        android:pivotX="50%"
        android:pivotY="50%"
        android:toXScale="1.0"
        android:toYScale="1.0"
        android:duration="500"/>

```

left_to_right.xml

```

<?xml version="1.0" encoding="utf-8"?>
<set
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:shareInterpolator="false">
    <translate
        android:fromXDelta="-100%"
        android:toXDelta="0%"
        android:fromYDelta="0%"
        android:toYDelta="0%"
        android:duration="700"/>
</set>

```

right_to_left.xml

```

<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android"
    android:shareInterpolator="false"> <translate
        android:fromXDelta="0%"
        android:toXDelta="100%"
        android:fromYDelta="0%"
        android:toYDelta="0%"
        android:duration="700" /set>

```

MainActivity.kt

```

package com.example.practical6
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle

```

```

import android.view.animation.Animation
import android.view.animation.AnimationUtils
import android.widget.Button
class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        val animation_rtl: Animation = AnimationUtils.loadAnimation(this, R.anim.left_to_right)
        val animation_ltr: Animation = AnimationUtils.loadAnimation(this, R.anim.right_to_left)
        val animation_bounce: Animation = AnimationUtils.loadAnimation(this, R.anim.bounce)
        val bounceButton: Button = findViewById(R.id.bounceButton)
        val normalButton: Button = findViewById(R.id.normalButton)
        val leftToRight_Button: Button = findViewById(R.id.leftToRight_Button)
        val rightToLeft_Button: Button = findViewById(R.id.rightToLeft_Button)
        bounceButton.setOnClickListener {
            // start the animation on click of button
            bounceButton.startAnimation(animation_bounce) }
        normalButton.setOnClickListener { }
        leftToRight_Button.setOnClickListener {
            // start the animation on click of button
            leftToRight_Button.startAnimation(animation_ltr) }
        rightToLeft_Button.setOnClickListener {
            // start the animation on click of button
            rightToLeft_Button.startAnimation(animation_rtl)}
    }
}

```

AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"      android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportRtl="true"
        android:theme="@style/Theme.Practical6"
        tools:targetApi="31">
        <activity android:name=".Practical_B"
            android:exported="true" >
            <!--<intent-filter>
            <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter-->
        </activity> <activity android:name=".MainActivity"
            android:exported="true"> <intent-filter>
                <action android:name="android.intent.action.MAIN" /> <category
android:name="android.intent.category.LAUNCHER" /> </intent-filter>
            </activity>
        </application>
    </manifest>

```

PRACTICAL – 6B

Aim:-Create an android application to display canvas and allow the user to draw on it

activity_practical_b.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"
    tools:context=".Practical_B">
    <EditText
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Yadav Nitin S-124"
        android:layout_gravity="center"
        android:gravity="center"
        android:margintop=200dp />
    <FrameLayout
        android:id="@+id/drawing_view_container"
        android:layout_width="match_parent"
        android:layout_height="match_parent"/>
    <Button
        android:id="@+id/clear_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Clear"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="16dp"
        android:layout_marginBottom="16dp"/>
</RelativeLayout>
```

Practical_B.kt

```
package com.example.practical
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.util.AttributeSet
import android.widget.Button
import android.widget.FrameLayout

class Practical_B : AppCompatActivity()
{
    override fun onCreate(savedInstanceState: Bundle?)
    {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_practical_b)
    }
}
```



```

val drawing_view_container = findViewById<FrameLayout>(R.id.drawing_view_container)

    val clear_button = findViewById<Button>(R.id.clear_but

val drawingView = DrawingView(this@Practical_B, null)

drawing_view_container.addView(drawingView) clear_button.setOnClickListener {
    drawingView.clearDrawing()
}
}

```

DrawingView.kt

```

package com.example.practical6
import android.content.Context
import android.graphics.*
import android.util.AttributeSet
import android.view.MotionEvent
import android.view.View

class DrawingView(context: Context, attrs: AttributeSet?) : View(context, attrs)
{
    private val path = Path()
    private val paint = Paint().apply {
        color = Color.BLACK
        isAntiAlias = true
        strokeWidth = 10f
        style = Paint.Style.STROKE
        strokeJoin = Paint.Join.ROUND
        strokeCap = Paint.Cap.ROUND
    }
    override fun onDraw(canvas: Canvas) {
        super.onDraw(canvas)
        canvas.drawPath(path, paint)
    }
    override fun onTouchEvent(event: MotionEvent): Boolean
    {
        val x = event.x
        val y = event.y
        when (event.action) {
            MotionEvent.ACTION_DOWN -> path.moveTo(x, y)
            MotionEvent.ACTION_MOVE -> path.lineTo(x, y)
            MotionEvent.ACTION_UP -> {
                path.lineTo(x, y)
                invalidate()
            }
        }
        return true
    }
    fun clearDrawing() {
        path.reset()
        invalidate()
    }
}

```

AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Practical6"
        tools:targetApi="31">

        <activity
            android:name=".Practical_B"
            android:exported="true" >
            <!--<intent-filter>
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter-->
        </activity>

        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
            <action android:name="android.intent.action.MAIN" />

            <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>

        </activity>

    </application>

</manifest>

```

PRACTICAL – 7A**Aim:-Create a mediaplayer application in android that plays audio.*****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_height="match_parent"
    android:layout_width="match_parent"
    android:background="@color/white"
    tools:context=".MainActivity">

    <EditText
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Yadav Nitin S-124"
        android:layout_gravity="center"
        android:gravity="center"
        android:margintop=200dp />

    <TextView
        android:id="@+id/headingText1"
        android:layout_centerHorizontal="true"
        android:layout_height="wrap_content"
        android:layout_marginTop="32dp"
        android:layout_width="wrap_content"
        android:text="Practical 7 - A"
        android:textColor="@color/black"
        android:textSize="16sp"
        android:textStyle="bold" />

    <TextView
        android:id="@+id/headingText2"
        android:layout_below="@+id/headingText1"
        android:layout_centerHorizontal="true"
        android:layout_height="wrap_content"
        android:layout_marginTop="8dp"
        android:text="MEDIA PLAYER"
        android:textColor="@color/black"
        android:layout_width="wrap_content"
        android:textSize="18sp" />

    <LinearLayout
        android:layout_below="@id/headingText2"
        android:layout_height="wrap_content"
        android:layout_marginTop="24dp"
        android:layout_width="match_parent"
        android:gravity="center">

```

```
<Button
    android:id="@+id/stopButton"
    android:layout_height="wrap_content"
    android:layout_marginEnd="8dp"
    android:layout_width="wrap_content"
    android:backgroundTint="@color/black"
    android:text="STOP"
    android:textColor="@color/white" />
```

```
<Button
    android:id="@+id/playButton"
    android:layout_height="wrap_content"
    android:layout_marginEnd="8dp"
    android:layout_width="wrap_content"
    android:backgroundTint="@color/black"
    android:text="PLAY"
    android:textColor="@color/white" />
```

```
<Button
    android:id="@+id/pauseButton"
    android:layout_height="wrap_content"
    android:layout_width="wrap_content"
    android:backgroundTint="@color/black"
    android:text="PAUSE"
    android:textColor="@color/white" />
```

```
</LinearLayout>
</RelativeLayout>
```

MainActivity.kt

```
package com.example.practical7
```

```
import android.media.MediaPlayer
import android.os.Bundle
import android.widget.Button
import androidx.activity.enableEdgeToEdge
import androidx.appcompat.app.AppCompatActivity
class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        // create an instance of medioplayer for audio playback
        val mediaPlayer: MediaPlayer = MediaPlayer.create(applicationContext, R.raw.music)
        // register all the buttons using their appropriate IDs
        val bPlay: Button = findViewById(R.id.playButton)
        val bPause: Button = findViewById(R.id.pauseButton)
        val bStop: Button = findViewById(R.id.stopButton)
        // handle the start button to start the audio playback
        bPlay.setOnClickListener {
            mediaPlayer.start()
        }
    }
}
```

```

    }

    // handle the pause button to put the MediaPlayer instance at the Pause state
    bPause.setOnClickListener {
        mediaPlayer.pause()

        // handle the stop button to stop playing and prepare the media player instance for the next instance of
        play
        bStop.setOnClickListener {
            mediaPlayer.stop()
            mediaPlayer.prepare()
        }
    }
}
}

```

AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportRtl="true"
        android:theme="@style/Theme.Practical7"
        tools:targetApi="31">
        <activity
            android:name=".practical7_B.MainActivity2"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <!-- <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter-->
        </activity>
    </application>

</manifest>

```

PRACTICAL – 7B

Aim:-Create an application to use a camera to capture image/video and display them on screen

Activity_main2.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"
    tools:context=".MainActivity">

    <EditText
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Yadav Nitin S-124"
        android:layout_gravity="center"
        android:gravity="center"
        android:marginTop=200dp />

    <Button
        android:id="@+id/camera_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="24dp"
        android:text="Camera" />

    <ImageView
        android:id="@+id/click_image"
        android:layout_below="@+id/camera_button"
        android:layout_width="350dp"
        android:layout_height="450dp"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="24dp" />

</RelativeLayout>
```

MainActivity2.kt

```
package com.example.practical7.practical7_B
import android.content.Intent
import android.graphics.Bitmap
import android.os.Bundle
import android.provider.MediaStore
import android.view.View
import android.widget.Button
```

```

import android.widget.ImageView
import androidx.activity.enableEdgeToEdge
import androidx.appcompat.app.AppCompatActivity
import androidx.core.view.ViewCompat
import androidx.core.view.WindowInsetsCompat
import com.example.practical7.R

class MainActivity2 : AppCompatActivity()
{
    lateinit var cameraOpenId: Button
    lateinit var clickImageId: ImageView
    val pic_id = 123

    override fun onCreate(savedInstanceState: Bundle?)
    {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main2)
        cameraOpenId = findViewById(R.id.camera_button)
        clickImageId = findViewById(R.id.click_image)
        cameraOpenId.setOnClickListener {
            val cameraIntent = Intent(MediaStore.ACTION_IMAGE_CAPTURE)
            startActivityForResult(cameraIntent, pic_id)
        }
    }
    @Deprecated("Deprecated in Java")
    override fun onActivityResult(requestCode: Int, resultCode: Int, data: Intent?) {
        super.onActivityResult(requestCode, resultCode, data)
        if (requestCode == pic_id) {
            val photo = data?.extras?.get("data") as Bitmap?
            clickImageId.setImageBitmap(photo)
        }
    }
}

```

PRACTICAL – 9

Aim:- Create an Android application to record the current location. Based on the current location allow the user to use some useful services/applications

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:gravity="center"
    android:id="@+id/main"
    android:layout_height="match_parent"
    android:layout_width="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:fontFamily="sans-serif-black"
        android:gravity="center"
        android:id="@+id/location_value"
        android:layout_gravity="center"
        android:layout_height="wrap_content"
        android:layout_width="match_parent"
        android:text="Hello World!"
        android:textIsSelectable="true"
        android:textSize="24sp" />

    <EditText
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Yadav Nitin S-124"
        android:textStyle="italic|bold"
        android:textSize="30dp"
        android:textAlignment="center" />

    <Button
        android:backgroundTint="@color/black"
        android:id="@+id/openMaps_button"
        android:layout_height="50dp"
        android:layout_marginTop="8dp"
        android:layout_width="200dp"
        android:text="Open Maps"
        android:textColor="@color/white" />
</LinearLayout>
```


MainActivity.kt

```
package com.example.practical9
```

```
import android.Manifest
import android.Manifest.permission.ACCESS_FINE_LOCATION
import android.content.Intent
import android.content.pm.PackageManager
import android.location.Location
import android.net.Uri
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.widget.Button
import android.widget.TextView
import android.widget.Toast
import androidx.core.app.ActivityCompat
import com.google.android.gms.location.LocationServices
```

```
class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        val location_value = findViewById<TextView>(R.id.location_value)
        val openMaps_button = findViewById<Button>(R.id.openMaps_button)

        val fusedLocationClient = LocationServices.getFusedLocationProviderClient(this)

        if (ActivityCompat.checkSelfPermission(this, ACCESS_FINE_LOCATION) !=
            PackageManager.PERMISSION_GRANTED
            && ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_COARSE_LOCATION) !=
            PackageManager.PERMISSION_GRANTED
        ) {
            Toast.makeText(this, "Permission Required!!!", Toast.LENGTH_LONG).show()
            return
        }
        fusedLocationClient.lastLocation.addOnSuccessListener { location : Location? ->
            if (location != null) {
                val location_value_main = "Latitude: ${location.latitude}, Longitude: ${location.longitude}"
                location_value.text = location_value_main

                openMaps_button.setOnClickListener {
                    val intent = Intent(Intent.ACTION_VIEW,
                        Uri.parse("geo:${location.latitude},${location.longitude}?q=nearby+places"))
                    startActivity(intent)
                }
            }
        }
    }
}
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    package="com.example.practical9">

    <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION"/>
    <uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION"/>

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Practical9"
        tools:targetApi="31">

        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>

        </activity>
    </application>

</manifest>
```