**[2CEIT5PE5: MOBILE APPLICATION DEVELOPMENT]**

Practical: 4



AIM: What is Intent? Write down types of Intent and types of Intent Action. Create an application which demonstrates **implicit Intent** for following features and also

create different activities and demonstrate **explicit Intent**. Use parent theme Theme.Material3.Dark.NoActionBar for Dark theme and

Theme.Material3.Light.NoActionBar for Light Theme

Submitted By: Kanzariya Dhavanik

Enrollment number: 21012022022



**Department of Computer Engineering/Information Technology**

1. Make call to specific number

2. Open specific URL

3. Pick up Contact from Existing contact list

4. Open Call Log

5. Open Gallery

6. Set Alarm

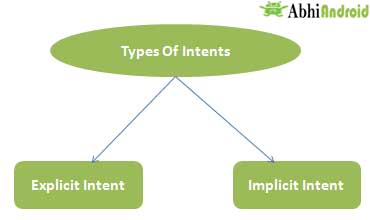
7. Open Camera

**Study:** Intent, types of Intent, types of Intent Action, Intent.setData() method, Intent.setType() method, TextInputEditText**,** TextInputLayout**,** Button, ConstraintLayout, CoordinatorLayout, startActivity() method, ActivityResultContracts.StartActivityForResult() method, registerForActivityResult() method, Permission in manifest, ContextCompat.checkSelfPermission(), ActivityCompat.requestPermissions() method, Uri.parse() method.

**What is Intent?**

* [Intent](https://abhiandroid.com/programming/intent-in-android/) are the objects which is used in android for passing the information among Activities in an Application and from one app to another also.
* [Intent](https://abhiandroid.com/programming/intent-in-android/) are used for communicating between the Application components and it also provides the connectivity between two apps.

**Types of Intent?**



1. **Explicit Intent:**

Explicit Intents are used to connect the application internally.

* **Intent intent = new Intent(getApplicationContext(), SecondActivity.class);**
* **startActivity(intent);**

1. **Implicit Intent:**

* It mainly use for passing data from one app to another or open another application.
* Ex: Open link, Open camera, Set alarm, Choose images from gallery, get contacts from contact app, dial number, open file with another app, select file from file system and many more.
* **Intent intentObj = new Intent(Intent.ACTION\_VIEW);**
* **intentObj.setData(Uri.parse("https://www.google.com"));**
* **startActivity(intentObj);**

**Types of Intent Action**

* **ACTION\_CALL:** This is for initiating calls from the user’s device.
* **ACTION\_EDIT:** This is to edit and make changes in the data that is visible to the users.
* **ACTION\_MAIN:** This is an initial activity of a task. It takes no input and returns no output.
* **ACTION\_DIAL:** This is used to display a Dialer to the users.
* **ACTION\_SYNC:** This is to synchronize the user’s data on their device on a server.
* **ACTION\_HEADSET\_PLUG:** This displays that a headset is plugged in or taken out.
* **ACTION\_SCREENON:** This is for turning on the screen of the user’s device.
* **ACTION\_BATTERY\_LOW:** This is a warning for a low running battery.
* **ACTION\_VIEW:** This displays the data to the users on the screens of their devices.

**activity\_main.xml:**

***<?*xml version="1.0" encoding="utf-8"*?>*<androidx.coordinatorlayout.widget.CoordinatorLayout 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">  
  
 <androidx.core.widget.NestedScrollView  
 android:id="@+id/txt\_camera"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 app:layout\_behavior="@string/appbar\_scrolling\_view\_behavior">  
  
 <androidx.constraintlayout.widget.ConstraintLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginEnd="5dp"  
 android:hint="Web URL"  
 app:layout\_constraintBottom\_toBottomOf="@id/btn\_browse"  
 app:layout\_constraintEnd\_toStartOf="@id/btn\_browse"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="@id/btn\_browse"  
 app:startIconDrawable="@drawable/ic\_baseline\_link\_24">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/txt\_browse"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content" />  
  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <Button  
 android:id="@+id/btn\_browse"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="20dp"  
 android:layout\_marginEnd="20dp"  
 android:backgroundTint="@color/btn\_back\_color"  
 android:gravity="center"  
 android:text="Browse"  
 app:cornerRadius="25dp"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginEnd="5dp"  
 android:hint="Call Number"  
 app:layout\_constraintBottom\_toBottomOf="@id/btn\_call"  
 app:layout\_constraintEnd\_toStartOf="@id/btn\_call"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="@id/btn\_call"  
 app:startIconDrawable="@drawable/ic\_baseline\_phone\_24">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/txt\_call"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="phone" />  
  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <Button  
 android:id="@+id/btn\_call"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="30dp"  
 android:backgroundTint="@color/btn\_back\_color"  
 android:text="Call"  
 app:cornerRadius="25dp"  
 app:layout\_constraintEnd\_toEndOf="@+id/btn\_browse"  
 app:layout\_constraintTop\_toBottomOf="@+id/btn\_browse" />  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginEnd="5dp"  
 android:hint="Contact List"  
 app:layout\_constraintBottom\_toBottomOf="@id/btn\_contact"  
 app:layout\_constraintEnd\_toStartOf="@id/btn\_contact"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="@id/btn\_contact"  
 app:startIconDrawable="@drawable/ic\_baseline\_folder\_24">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/txt\_contact"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content" />  
  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <Button  
 android:id="@+id/btn\_contact"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="30dp"  
 android:backgroundTint="@color/btn\_back\_color"  
 android:text="Contact"  
 app:cornerRadius="25dp"  
 app:layout\_constraintEnd\_toEndOf="@+id/btn\_call"  
 app:layout\_constraintTop\_toBottomOf="@+id/btn\_call" />  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginEnd="5dp"  
 android:hint="Call Log"  
 app:layout\_constraintBottom\_toBottomOf="@id/btn\_call\_log"  
 app:layout\_constraintEnd\_toStartOf="@id/btn\_call\_log"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="@id/btn\_call\_log"  
 app:startIconDrawable="@drawable/ic\_baseline\_phone\_forwarded\_24">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/txt\_call\_log"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content" />  
  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <Button  
 android:id="@+id/btn\_call\_log"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="30dp"  
 android:backgroundTint="@color/btn\_back\_color"  
 android:text="Call Log"  
 app:cornerRadius="25dp"  
 app:layout\_constraintEnd\_toEndOf="@+id/btn\_contact"  
 app:layout\_constraintTop\_toBottomOf="@+id/btn\_contact" />  
  
 <com.google.android.material.textfield.TextInputLayout  
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 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginEnd="5dp"  
 android:hint="Gallery"  
 app:layout\_constraintBottom\_toBottomOf="@id/btn\_gallery"  
 app:layout\_constraintEnd\_toStartOf="@id/btn\_gallery"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="@id/btn\_gallery"  
 app:startIconDrawable="@drawable/ic\_baseline\_photo\_24">  
  
 <com.google.android.material.textfield.TextInputEditText  
 android:id="@+id/txt\_gallery"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content" />  
  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <Button  
 android:id="@+id/btn\_gallery"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="30dp"  
 android:backgroundTint="@color/btn\_back\_color"  
 android:text="Gallery"  
 app:cornerRadius="25dp"  
 app:layout\_constraintEnd\_toEndOf="@+id/btn\_call\_log"  
 app:layout\_constraintTop\_toBottomOf="@+id/btn\_call\_log" />  
  
 <com.google.android.material.textfield.TextInputLayout  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginEnd="5dp"  
 android:hint="Camera"  
 app:layout\_constraintBottom\_toBottomOf="@id/btn\_camera"  
 app:layout\_constraintEnd\_toStartOf="@id/btn\_camera"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="@id/btn\_camera"  
 app:startIconDrawable="@drawable/ic\_baseline\_photo\_camera\_24">  
  
 <com.google.android.material.textfield.TextInputEditText  
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 android:layout\_height="wrap\_content" />  
  
 </com.google.android.material.textfield.TextInputLayout>  
  
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 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="30dp"  
 android:backgroundTint="@color/btn\_back\_color"  
 android:text="Camera"  
 app:cornerRadius="25dp"  
 app:layout\_constraintEnd\_toEndOf="@+id/btn\_gallery"  
 app:layout\_constraintTop\_toBottomOf="@+id/btn\_gallery" />  
  
 <com.google.android.material.textfield.TextInputLayout  
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 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginEnd="5dp"  
 android:hint="Alarm"  
 app:layout\_constraintBottom\_toBottomOf="@id/btn\_alarm"  
 app:layout\_constraintEnd\_toStartOf="@id/btn\_alarm"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="@id/btn\_alarm"  
 app:startIconDrawable="@drawable/ic\_baseline\_alarm\_24">  
  
 <com.google.android.material.textfield.TextInputEditText  
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 android:id="@+id/txt\_alarm"  
 android:layout\_height="wrap\_content" />  
  
 </com.google.android.material.textfield.TextInputLayout>  
  
 <Button  
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 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="30dp"  
 android:backgroundTint="@color/btn\_back\_color"  
 android:text="Alarm"  
 app:cornerRadius="25dp"  
 app:layout\_constraintEnd\_toEndOf="@+id/btn\_camera"  
 app:layout\_constraintTop\_toBottomOf="@+id/btn\_camera" />  
  
 </androidx.constraintlayout.widget.ConstraintLayout>  
 </androidx.core.widget.NestedScrollView>  
</androidx.coordinatorlayout.widget.CoordinatorLayout>**

**MainActivity.kt:**

**package com.example.madpractical4\_21012022022  
  
import android.content.Intent  
import android.net.Uri  
import androidx.appcompat.app.AppCompatActivity  
import android.os.Bundle  
import android.provider.AlarmClock  
import android.provider.CallLog  
import android.provider.ContactsContract  
import android.provider.MediaStore  
import android.widget.Button  
import android.widget.EditText  
import android.widget.Toast  
  
class MainActivity : AppCompatActivity() {  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 setContentView(R.layout.*activity\_main*)  
 val btnBrowse:Button=findViewById(R.id.*btn\_browse*)  
 val txtBrowse:EditText=findViewById(R.id.*txt\_browse*)  
 val btnCall:Button=findViewById(R.id.*btn\_call*)  
 val txtCall:EditText=findViewById(R.id.*txt\_call*)  
 val txtAlarm:EditText=findViewById(R.id.*txt\_alarm*)  
  
 val btnContact:Button=findViewById(R.id.*btn\_contact*)  
 val btnCallLog:Button=findViewById(R.id.*btn\_call\_log*)  
 val btnGallery:Button=findViewById(R.id.*btn\_gallery*)  
 val btnCamera:Button=findViewById(R.id.*btn\_camera*)  
 val btnAlarm:Button=findViewById(R.id.*btn\_alarm*)  
  
  
 btnBrowse.setOnClickListener {  
 if(txtBrowse.*text*.toString()!="")  
 {  
 Intent(Intent.*ACTION\_VIEW*).setData(**

**Uri.parse("https://"+(txtBrowse.*text*.toString()))).*apply* {  
 startActivity(this)  
 }  
 }  
 else{  
 Toast.makeText(this,"Please enter URL",Toast.*LENGTH\_SHORT*).show()  
 }  
 }  
 btnCall.setOnClickListener {  
 if(txtCall.*text*.toString()!="")  
 {  
 Intent(Intent.*ACTION\_DIAL*).setData(**

**Uri.parse("tel:"+txtCall.*text*.toString())).*apply* {  
 startActivity(this)  
 }  
 }  
 else{  
 Toast.makeText(this,"Please enter mobile number",Toast.*LENGTH\_SHORT*).show()  
 }  
 }  
  
 btnContact.setOnClickListener {  
 Intent(Intent.*ACTION\_VIEW*).setType(**

**ContactsContract.Contacts.*CONTENT\_TYPE*).*apply* {  
 startActivity(this)  
 }  
 }  
  
 btnCallLog.setOnClickListener {  
 Intent(Intent.*ACTION\_VIEW*).setType(CallLog.Calls.*CONTENT\_TYPE*).*apply* {  
 startActivity(this)  
 }  
 }  
  
 btnGallery.setOnClickListener {  
 Intent(Intent.*ACTION\_PICK*).setType("image/\*").*apply* {  
 startActivity(this)  
 }  
 }  
 btnCamera.setOnClickListener {  
 Intent(MediaStore.*ACTION\_IMAGE\_CAPTURE*).*apply* {  
 startActivity(this)  
 }  
 }  
 btnAlarm.setOnClickListener {  
 if(txtAlarm.*text*.toString()!="")  
 {  
 Intent(AlarmClock.*ACTION\_SET\_ALARM*).*apply* {  
 this.putExtra(AlarmClock.*EXTRA\_MESSAGE*, txtAlarm.*text*.toString())  
 this.putExtra(AlarmClock.*EXTRA\_HOUR*, 10)  
 this.putExtra(AlarmClock.*EXTRA\_MINUTES*, 30)  
 startActivity(this)  
 }  
 }  
 else{  
 Toast.makeText(this,"Please enter Alarm Name",Toast.*LENGTH\_SHORT*).show()  
 }  
 }  
 }  
}**

**Output:**

