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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

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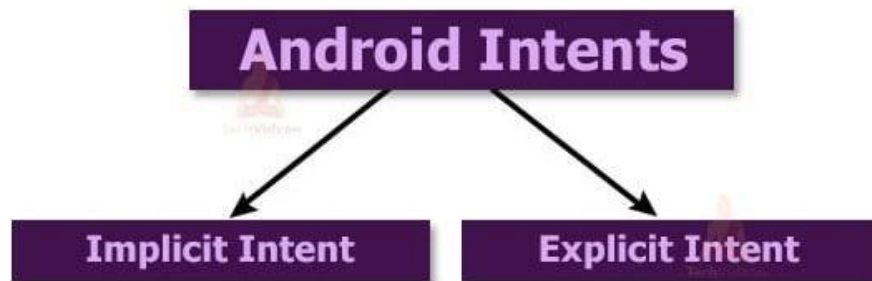
1. Make call to specific number
2. Open specific URL
3. Pick up Contact from Existing contact list
4. Open Call Log
5. Open Gallery
6. Set Alarm
7. Open Camera

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 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 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);`

2. 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.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_browse"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:layout_marginLeft="250dp"  
        android:layout_marginTop="10dp"  
        android:text="Browse"  
        app:layout_constraintEnd_toEndOf="parent"  
        app:layout_constraintStart_toStartOf="parent"  
        app:layout_constraintTop_toTopOf="parent" />  
  
    <Button  
        android:id="@+id/button_call"  
        android:layout_width="80dp"  
        android:layout_height="51dp"  
        android:layout_marginLeft="250dp"  
        android:layout_marginTop="50dp"  
        android:text="Call"
```

```
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@id/button_browse" />
```

<Button

```
    android:id="@+id/button_contact"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="250dp"
    android:layout_marginTop="50dp"
    android:text="Contact"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@id/button_call" />
```

<Button

```
    android:id="@+id/button_callLog"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="250dp"
    android:layout_marginTop="50dp"
    android:text="Call Log"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@id/button_contact" />
```

<Button

```
    android:id="@+id/button_gallery"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="250dp"
    android:layout_marginTop="50dp"
    android:text="Gallery"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@id/button_callLog" />
```

<Button

```
    android:id="@+id/button_camera"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="250dp"
    android:layout_marginTop="50dp"
    android:text="Camera"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@id/button_gallery" />
```

<Button

```
    android:id="@+id/button_alarm"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="250dp"
    android:layout_marginTop="50dp"
    android:text="Alarm"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@id/button_camera" />
```

```
<com.google.android.material.textfield.TextInputLayout
    android:layout_width="266dp"
    android:layout_height="49dp"
    android:layout_marginStart="10dp"
    android:layout_marginLeft="10dp"
    android:layout_marginTop="10dp"
    android:layout_marginEnd="7dp"
    android:layout_marginRight="7dp"
    android:layout_marginBottom="52dp"
    app:layout_constraintBottom_toTopOf="@+id/textInputLayout2"
    app:layout_constraintEnd_toStartOf="@+id/button_browse"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent">

    <com.google.android.material.textfield.TextInputEditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:drawableStart="@android:drawable/ic_menu_compass"
        android:hint="Web URL" />
</com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
    android:id="@+id/textInputLayout2"
    android:layout_width="266dp"
    android:layout_height="47dp"
    android:layout_marginStart="1dp"
    android:layout_marginLeft="1dp"
    android:layout_marginTop="111dp"
    android:layout_marginBottom="573dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent">

    <com.google.android.material.textfield.TextInputEditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:drawableStart="@android:drawable/stat_sys_phone_call"
        android:hint="Call Number" />
</com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
    android:layout_width="259dp"
    android:layout_height="46dp"
    android:layout_marginStart="1dp"
    android:layout_marginLeft="1dp"
    android:layout_marginTop="210dp"
    android:layout_marginBottom="475dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent">

    <com.google.android.material.textfield.TextInputEditText
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:drawableStart="@android:drawable/sym_contact_card"
        android:hint="Contact List" />
</com.google.android.material.textfield.TextInputLayout>
```

```
<com.google.android.material.textfield.TextInputLayout
    android:layout_width="257dp"
    android:layout_height="55dp"
    android:layout_marginStart="1dp"
    android:layout_marginLeft="1dp"
    android:layout_marginTop="298dp"
    android:layout_marginBottom="378dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent">

    <com.google.android.material.textfield.TextInputEditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:drawableStart="@android:drawable/stat_sys_phone_call_forward" />
</com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
    android:layout_width="268dp"
    android:layout_height="51dp"
    android:layout_marginStart="1dp"
    android:layout_marginLeft="1dp"
    android:layout_marginTop="406dp"
    android:layout_marginBottom="274dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent">

    <com.google.android.material.textfield.TextInputEditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:drawableStart="@android:drawable/ic_menu_gallery" />
</com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
    android:layout_width="260dp"
    android:layout_height="51dp"
    android:layout_marginStart="1dp"
    android:layout_marginLeft="1dp"
    android:layout_marginTop="499dp"
    android:layout_marginBottom="181dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent">

    <com.google.android.material.textfield.TextInputEditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:drawableStart="@android:drawable/ic_menu_camera" />
</com.google.android.material.textfield.TextInputLayout>

<com.google.android.material.textfield.TextInputLayout
    android:layout_width="260dp"
    android:layout_height="56dp"
    android:layout_marginStart="1dp"
    android:layout_marginLeft="1dp"
    android:layout_marginTop="594dp"
```

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```
        android:layout_marginEnd="150dp"
        android:layout_marginRight="150dp"
        android:layout_marginBottom="81dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent">

        <com.google.android.material.textfield.TextInputEditText
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:drawableStart="@android:drawable/ic_lock_idle_alarm" />
    </com.google.android.material.textfield.TextInputLayout>

</androidx.constraintlayout.widget.ConstraintLayout>
```

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MainActivity.kt:

```
package com.example.mad_practical4_20012011035;

import android.content.Intent
import android.net.Uri
import android.os.Build
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 androidx.annotation.RequiresApi

class MainActivity : AppCompatActivity() {
    @RequiresApi (Build.VERSION_CODES.KITKAT)
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        val buttonBrowse = findViewById<Button>(R.id.button_browse)
        buttonBrowse.setOnClickListener {

            Intent(Intent.ACTION_VIEW).setData(Uri.parse("https://uvpce.guni.ac.in")).apply {
                startActivity(this)
            }
        }

        val buttonCall = findViewById<Button>(R.id.button_call)
        buttonCall.setOnClickListener {
            Intent(Intent.ACTION_DIAL).setData(Uri.parse("tel: 9903763302")).apply {
                startActivity(this)
            }
        }

        val buttonContact = findViewById<Button>(R.id.button_contact)
        buttonContact.setOnClickListener {

            Intent(Intent.ACTION_VIEW).setType(ContactsContract.Contacts.CONTENT_TYPE).apply {
                startActivity(this)
            }
        }

        val buttonCallLog = findViewById<Button>(R.id.button_callLog)
        buttonCallLog.setOnClickListener {
            Intent(Intent.ACTION_VIEW).setType(CallLog.Calls.CONTENT_TYPE).apply {
                startActivity(this)
            }
        }

        val buttonGallery = findViewById<Button>(R.id.button_gallery)
        buttonGallery.setOnClickListener {
            Intent(MediaStore.ACTION_IMAGE_CAPTURE).apply {
                startActivity(this)
            }
        }
    }
}
```


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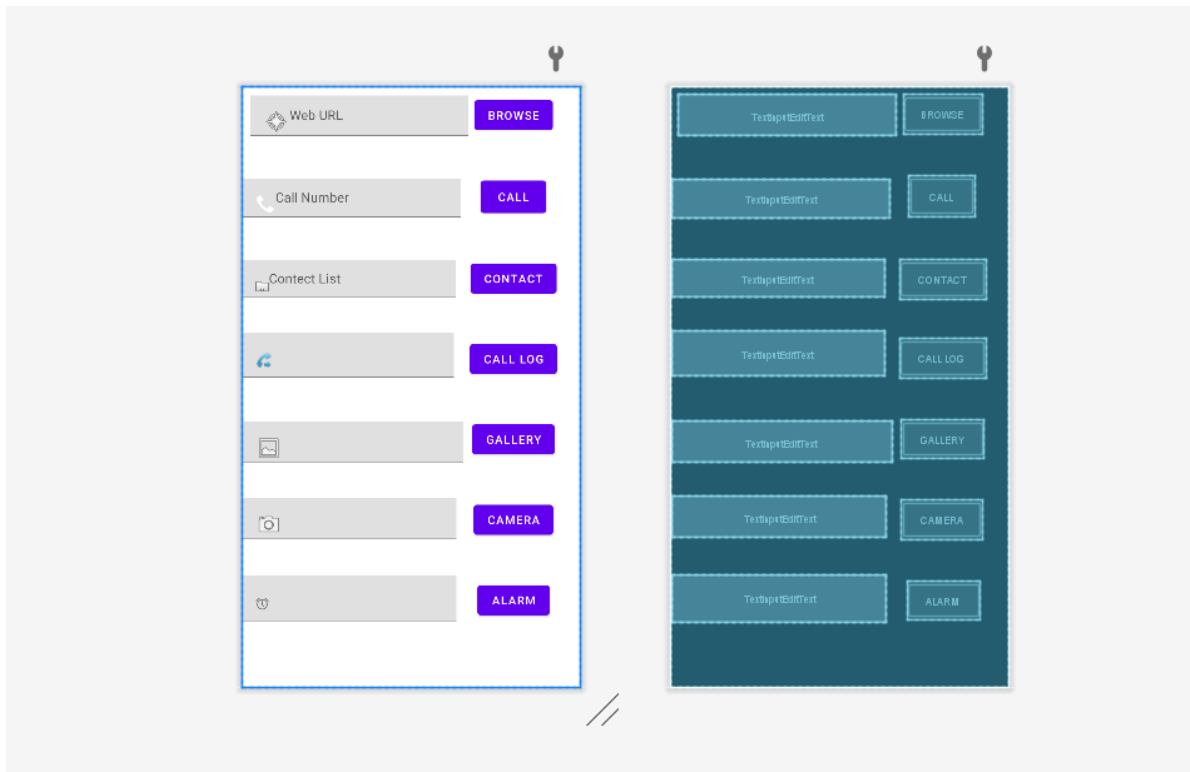
```
    }

    val buttonCamera = findViewById<Button>(R.id.button_camera)
    buttonCamera.setOnClickListener {
        Intent(MediaStore.ACTION_IMAGE_CAPTURE).apply {
            startActivity(this)
        }
    }

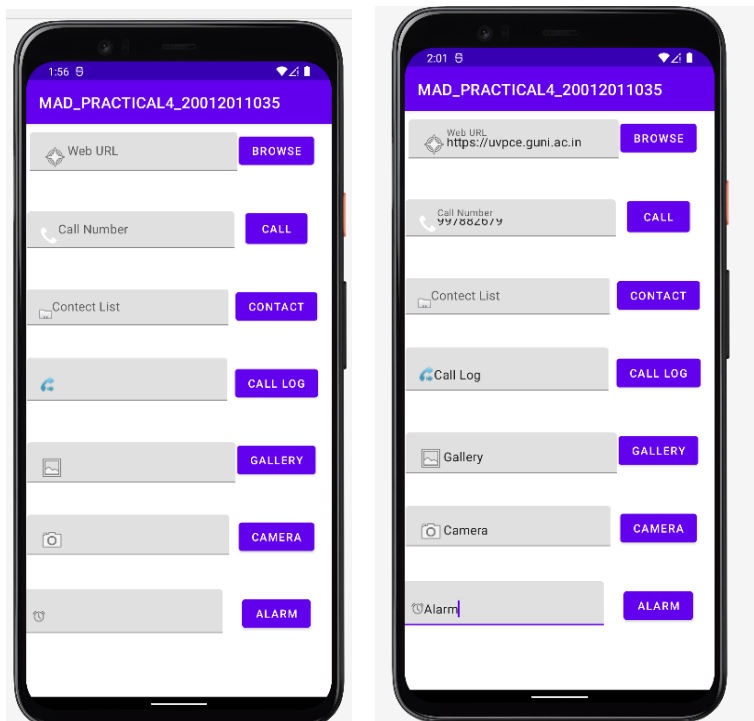
    val buttonAlarm = findViewById<Button>(R.id.button_alarm)
    buttonAlarm.setOnClickListener {
        Intent(AlarmClock.ACTION_SHOW_ALARMS).apply { startActivity(this) }
    }
}
}
```

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DESIGN:



OUTPUT:



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