**EX NO:2 APPLICATION DEVELOPMENT USING LAYOUT MANAGERS AND EVENT MANAGERS**

**AIM:** To develop a mobile application using various layout managers and event listeners.

**DESCRIPTION:**

**SENDING SIMPLE DATA TO OTHER APPS:**

1. **Android intent** resolver is best suited for passing data to next stage of a well-defined task.
2. When you construct an intent, you must specify the action that the intent must perform.
3. Android uses the action ACTION\_SEND to send data from one activity to another.
4. Data and its type to be sent is to be specified.
5. The system automatically identifies the compatible activities that can receive the data and displays them to user.

**MOTION EVENT:**

1. Motion events may hold either absolute or relative movements.
2. Motion events describe movements in terms of action code.
3. Action code specifies the state change that occurred such as a pointer going down or up.

**CLICK EVENT:**

1. To make click event work, add android:onClick attribute to button element in your XML layout.
2. The value for this attribute must be name of method you call in response to a click event.

**ON CLICK LISTENER:**

1. This event handler code can be used in both activities and fragments.
2. SendMessage() – A method used to send messages to next activity.

**TABLE LAYOUT:**

1. A layout that arranges its children into rows and columns.
2. TableLayout consists of number of TableRow objects, each defining a row.
3. TableLayout containers do not display border lines for their rows, columns or cells.
4. Each cell can hold one view object.

* **XML Attributes:**

1. **android:shrinkColumns –** zero-based index of columns to shrink
2. **android:collapseColumns –** zero-based index of columns to collapse

**XML CODE:**

**Activity\_main:**

<?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:orientation="vertical"

tools:context=".MainActivity">

<TextView

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:gravity="center"

android:id="@+id/hospitalHeader"

android:text="HOSPITAL REGISTRATION FORM\n"

android:textAlignment="center"

android:textColor="@android:color/black"

android:textSize="20sp"

android:textStyle="bold"/>

<ScrollView

android:layout\_width="match\_parent"

android:layout\_height="match\_parent">

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="vertical" >

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/name"

android:text="Name: "

android:fontFamily="sans-serif"

android:textColor="@color/colorPrimaryDark"

android:textSize="15sp"/>

<EditText

android:id="@+id/patientname"

android:layout\_height="wrap\_content"

android:layout\_width="wrap\_content"

android:inputType="textPersonName"

android:ems="15"

android:text=""/>

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/address"

android:text="Address: "

android:fontFamily="sans-serif"

android:textColor="@color/colorPrimaryDark"

android:textSize="15sp"/>

<EditText

android:id="@+id/addressval"

android:layout\_height="wrap\_content"

android:layout\_width="wrap\_content"

android:inputType="textPersonName"

android:ems="14"

android:text=""/>

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/age"

android:text="Age: "

android:fontFamily="sans-serif"

android:textColor="@color/colorPrimaryDark"

android:textSize="15sp"/>

<EditText

android:id="@+id/ageval"

android:layout\_height="wrap\_content"

android:layout\_width="wrap\_content"

android:inputType="number"

android:ems="3"

android:text=""/>

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<TextView

android:id="@+id/dob"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:fontFamily="sans-serif"

android:text="Date of Birth: "

android:textColor="@color/colorPrimaryDark"

android:textSize="15sp" />

<DatePicker

android:id="@+id/dobval"

android:layout\_width="wrap\_content"

android:layout\_height="390dp"

android:datePickerMode="calendar"

android:isScrollContainer="true"

android:layout\_marginLeft="90px"

android:layout\_marginTop="20px"/>

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/gender"

android:text="\n\nGender: "

android:fontFamily="sans-serif"

android:textColor="@color/colorPrimaryDark"

android:textSize="15sp"/>

<RadioGroup

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="vertical"

android:id="@+id/radiogroup">

<RadioButton android:id="@+id/male"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Male"/>

<RadioButton android:id="@+id/female"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Female"/>

<RadioButton android:id="@+id/other"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Other"/>

</RadioGroup>

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content">

<TextView

android:id="@+id/maritalstatus"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:fontFamily="sans-serif"

android:text="Marital Status: "

android:textColor="@color/colorPrimaryDark"

android:textSize="15sp" />

<Spinner

android:id="@+id/maritalstats"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content" />

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/phone"

android:text="Phone number: "

android:fontFamily="sans-serif"

android:textColor="@color/colorPrimaryDark"

android:textSize="15sp"/>

<EditText

android:id="@+id/number"

android:layout\_height="wrap\_content"

android:layout\_width="wrap\_content"

android:inputType="phone"

android:ems="8"

android:text=""/>

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/reg\_time"

android:text="Registration time: "

android:fontFamily="sans-serif"

android:textColor="@color/colorPrimaryDark"

android:textSize="15sp"/>

<TimePicker

android:id="@+id/time"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:timePickerMode="spinner"/>

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/addiction"

android:text="Addiction: "

android:fontFamily="sans-serif"

android:textColor="@color/colorPrimaryDark"

android:textSize="15sp"/>

<CheckBox

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/smokes"

android:text="Smoking"/>

<CheckBox

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/drinks"

android:text="Drinking"/>

</LinearLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal">

<Button

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/submit"

android:text="SUBMIT"/>

<Button

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/reset"

android:text="RESET"/>

</LinearLayout>

</LinearLayout>

</ScrollView>

</LinearLayout>

**Activity\_second:**

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

<TableLayout xmlns:android="http://schemas.android.com/apk/res/android"

android:layout\_width="match\_parent" android:layout\_height="match\_parent">

<TextView

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:gravity="center"

android:id="@+id/hospital"

android:text="HOSPITAL REGISTRATION FORM\n"

android:textAlignment="center"

android:textColor="@android:color/black"

android:textSize="20sp"

android:textStyle="bold"/>

<TableRow>

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/name1"

android:text="Name: "

android:fontFamily="sans-serif"

android:textColor="@color/colorPrimaryDark"/>

<TextView

android:id="@+id/patientname1"

android:layout\_height="wrap\_content"

android:layout\_width="wrap\_content"/>

</TableRow>

<TableRow>

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/address"

android:text="Address: "

android:fontFamily="sans-serif"

android:textColor="@color/colorPrimaryDark"/>

<TextView

android:id="@+id/addressval1"

android:layout\_height="wrap\_content"

android:layout\_width="wrap\_content"/>

</TableRow>

<TableRow>

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/age1"

android:text="Age: "

android:fontFamily="sans-serif"

android:textColor="@color/colorPrimaryDark"/>

<TextView

android:id="@+id/ageval1"

android:layout\_height="wrap\_content"

android:layout\_width="wrap\_content" />

</TableRow>

<TableRow>

<TextView

android:id="@+id/dob"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:fontFamily="sans-serif"

android:text="Date of Birth: "

android:textColor="@color/colorPrimaryDark"/>

<TextView

android:id="@+id/dobval1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"/>

</TableRow>

<TableRow>

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/gender"

android:text="Gender: "

android:fontFamily="sans-serif"

android:textColor="@color/colorPrimaryDark"/>

<TextView

android:layout\_height="wrap\_content"

android:layout\_width="wrap\_content"

android:id="@+id/genderval1" />

</TableRow>

<TableRow>

<TextView

android:id="@+id/maritalstatus"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:fontFamily="sans-serif"

android:text="Marital Status: "

android:textColor="@color/colorPrimaryDark"/>

<TextView

android:id="@+id/maritalstats1"

android:layout\_height="wrap\_content"

android:layout\_width="wrap\_content"/>

</TableRow>

<TableRow>

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/phone"

android:text="Phone number: "

android:fontFamily="sans-serif"

android:textColor="@color/colorPrimaryDark"/>

<TextView

android:id="@+id/number1"

android:layout\_height="wrap\_content"

android:layout\_width="wrap\_content"/>

</TableRow>

<TableRow>

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/reg\_time"

android:text="Registration time: "

android:fontFamily="sans-serif"

android:textColor="@color/colorPrimaryDark"/>

<TextView

android:id="@+id/time1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"/>

</TableRow>

<TableRow>

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/addiction"

android:text="Addiction: "

android:fontFamily="sans-serif"

android:textColor="@color/colorPrimaryDark" />

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/add1"/>

</TableRow>

</TableLayout>

**STRINGS:**

<resources>

<string name="app\_name">Ex2</string>

<string-array name="marital\_array">

<item>Unmarried</item>

<item>Married</item>

</string-array>

</resources>

**ANDROID MANIFEST:**

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

<manifest xmlns:android="http://schemas.android.com/apk/res/android"

package="com.example.android.ex2">

<application

android:allowBackup="true"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:roundIcon="@mipmap/ic\_launcher\_round"

android:supportsRtl="true"

android:theme="@style/AppTheme">

<activity android:name=".SecondActivity"/>

<activity android:name=".MainActivity">

<intent-filter>

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

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

</intent-filter>

</activity>

</application>

</manifest>

**JAVA CODE:**

**Main activity:**

package com.example.android.ex2;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Context;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.ArrayAdapter;

import android.widget.Button;

import android.widget.CheckBox;

import android.widget.DatePicker;

import android.widget.EditText;

import android.widget.RadioButton;

import android.widget.RadioGroup;

import android.widget.Spinner;

import android.widget.TextView;

import android.widget.TimePicker;

import org.w3c.dom.Text;

import java.io.Serializable;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

SecondActivity second= new SecondActivity();

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

Spinner spinner=findViewById(R.id.maritalstats);

ArrayAdapter<CharSequence> adapter = ArrayAdapter.createFromResource(this,

R.array.marital\_array, android.R.layout.simple\_spinner\_item);

adapter.setDropDownViewResource(android.R.layout.simple\_spinner\_dropdown\_item);

spinner.setAdapter(adapter);

Button submit=findViewById(R.id.submit);

submit.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

EditText pn=findViewById(R.id.patientname);

second.name=pn.getText().toString();

EditText av=findViewById(R.id.addressval);

second.address=av.getText().toString();

EditText ag=findViewById(R.id.ageval);

second.age=ag.getText().toString();

DatePicker d=findViewById(R.id.dobval);

Integer day=d.getDayOfMonth();

Integer month=(d.getMonth() + 1);

Integer year=d.getYear();

second.dob=day.toString() + "/" + month.toString() + "/" + year.toString();

RadioGroup r=findViewById(R.id.radiogroup);

Integer rid=r.getCheckedRadioButtonId();

RadioButton r1=findViewById(rid);

second.gender=r1.getText().toString();

final Spinner s=findViewById(R.id.maritalstats);

String opt=s.getSelectedItem().toString();

second.marital=opt;

EditText ph=findViewById(R.id.number);

second.phone=ph.getText().toString();

TimePicker t=findViewById(R.id.time);

Integer hour=t.getHour();

Integer min=t.getMinute();

second.time = hour.toString() + ":" + min.toString();

CheckBox c1=findViewById(R.id.smokes);

int flag=0;

String t1="";

if(c1.isChecked())

t1=c1.getText().toString();

else

flag++;

CheckBox c2=findViewById(R.id.drinks);

String t2="";

if(c2.isChecked())

t2 = c2.getText().toString();

else

flag++;

if(flag != 2)

second.addiction = t1+" "+t2;

else

second.addiction = "None";

Context context = getApplicationContext();

Intent intent = new Intent(context, SecondActivity.class);

intent.putExtra("object",second);

startActivity(intent);

//startActivity(new Intent(MainActivity.this,SecondActivity.class));

}

});

Button reset=findViewById(R.id.reset);

reset.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

EditText pn=findViewById(R.id.patientname);

pn.setText("");

EditText av=findViewById(R.id.addressval);

av.setText("");

EditText ag=findViewById(R.id.ageval);

ag.setText("");

DatePicker d=findViewById(R.id.dobval);

Calendar c = Calendar.getInstance();

d.updateDate(c.get(Calendar.YEAR), c.get(Calendar.MONTH), c.get(Calendar.DAY\_OF\_MONTH));

RadioGroup r=findViewById(R.id.radiogroup);

r.clearCheck();

final Spinner s=findViewById(R.id.maritalstats);

s.setSelection(0);

EditText ph=findViewById(R.id.number);

ph.setText("");

TimePicker t=findViewById(R.id.time);

t.setHour(c.get(Calendar.HOUR\_OF\_DAY));

t.setMinute(c.get(Calendar.MINUTE));

CheckBox c1=findViewById(R.id.smokes);

c1.setChecked(false);

CheckBox c2=findViewById(R.id.drinks);

c2.setChecked(false);

}

});

}

}

**SECOND ACTIVITY:**

package com.example.android.ex2;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.widget.TextView;

import java.io.Serializable;

public class SecondActivity extends AppCompatActivity implements Serializable {

String name, address, age, phone, gender, marital, addiction, dob, time;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_second);

Intent intent = getIntent();

SecondActivity Second = (SecondActivity) intent.getSerializableExtra("object");

TextView pname=findViewById(R.id.patientname1);

pname.setText(Second.name);

TextView addr=findViewById(R.id.addressval1);

addr.setText(Second.address);

TextView a=findViewById(R.id.ageval1);

a.setText(Second.age);

TextView d=findViewById(R.id.dobval1);

d.setText(Second.dob);

TextView g=findViewById(R.id.genderval1);

g.setText(Second.gender);

TextView m=findViewById(R.id.maritalstats1);

m.setText(Second.marital);

TextView p=findViewById(R.id.number1);

p.setText(Second.phone);

TextView rt=findViewById(R.id.time1);

rt.setText(Second.time);

TextView ad=findViewById(R.id.add1);

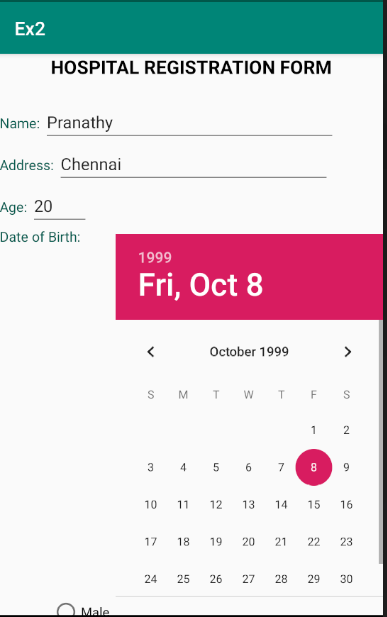
ad.setText(Second.addiction);

}

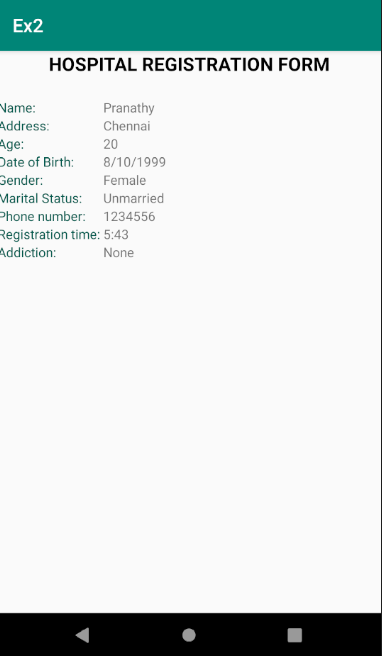
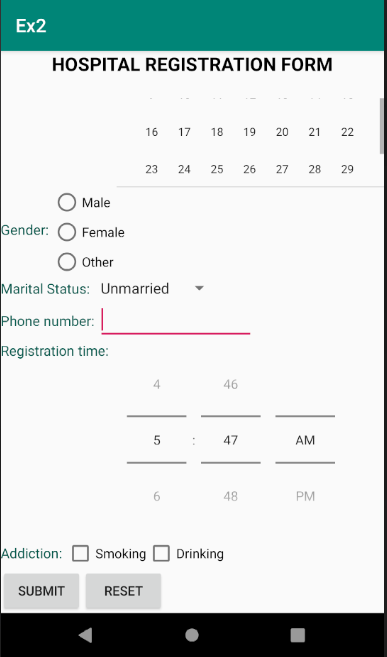
}

**OUTPUT SCREENSHOTS:**

**Before Submit and Reset:**



**After submit: After reset:**

** **