

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>
</TableLayout>
```

```
</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:supportRtl="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.AdapterView;
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:

Ex2

HOSPITAL REGISTRATION FORM

Name:

Address:

Age:

Date of Birth:

1999
Fri, Oct 8

☒ Male

After submit:

Ex2

HOSPITAL REGISTRATION FORM

Name: Pranathy

Address: Chennai

Age: 20

Date of Birth: 8/10/1999

Gender: Female

Marital Status: Unmarried

Phone number: 1234556

Registration time: 5:43

Addiction: None

After reset:

Ex2

HOSPITAL REGISTRATION FORM

Name:

Address:

Age:

Date of Birth:

1999
Fri, Oct 8

☒ Male

Gender: ☐ Female

☐ Other

Marital Status: Unmarried

Phone number:

Registration time:

4 46

5 : 47 AM

6 48 PM

Addiction: ☐ Smoking ☐ Drinking