ANDROID LAB MANUAL

Program 1. Introducing different Android development tools and developing Hello World application.

Solution

Step 1 open the android studio.

Step 2 create a new project by name my application.

Step 3 choose empty activity

There it opens .XML file and .java file

Xml file:

```
<?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">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

.java file

```
package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

program 2.

Develop an android application to investigate the activity life cycle.

Step 1 start the android studio

Step 2 create a new project by name activity_test

Step3 choose empty activity

Their it opens .xml file and .java file

```
<?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="com.example.myapplication.MainActivity">
    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:autofillHints=""
        android:ems="10"
        android:hint="@string/enter_name"
        android:inputType="textPersonName"

app:layout_constraintBaseline_toBaselineOf="@+id/button"
        app:layout_constraintLeft_toLeftOf="parent"
        tools:layout_constraintBaseline_creator="1"
        tools:layout_constraintLeft_creator="1" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="8dp"
        android:layout_marginLeft="8dp"
        android:layout_marginTop="16dp"
        android:onClick="onSubmit"
        android:text="@string/submit"
        app:layout_constraintLeft_toRightOf="@+id/editText"
        app:layout_constraintTop_toTopOf="parent"
        tools:ignore="OnClick,RtlHardcoded"
        tools:layout_constraintTop_creator="1" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

mainactivity.java file

```
package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    String tag = "Life Cycle";
    EditText txt;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d(tag, "In onCreate() function");
    }
    public void display(View view)
    {
        String name;
        txt = (EditText)findViewById(R.id.editText);
        name = txt.getText().toString();
        String str="Good Afternoon : " + name;
        Toast.makeText(getApplicationContext(), str,
Toast.LENGTH_LONG).show();
    }
    public void onStart()
    {
        super.onStart();
        Log.d(tag, "In onStart() function");
    }
    public void onResume()
    {
        super.onResume();
        Log.d(tag, "In onResume() function");
    }
    public void onPause(){
        super.onPause();
        Log.d(tag, "In onPause() function");
    }
    public void onRestart()
    {
        super.onRestart();
        Log.d(tag, "In onRestart() function");
    }
    public void onDestroy() {
        super.onDestroy();
```

```
        Log.d(tag, "In onDestroy() function");
    }

    public void onSubmit(View view) {
    }
}
```

program 3.

Develop an android application to investigate the fragments.

1. Using Android Studio, create a new Android project and name it Fragments.
2. Choose basic activity
3. It opens main activity.java, .XML, firstfragment.java, second fragment.java.

Solution:

Main activity.java

```
package com.example.myapplication;

import android.os.Bundle;

import com.google.android.material.snackbar.Snackbar;

import androidx.appcompat.app.AppCompatActivity;

import android.view.View;

import androidx.navigation.NavController;
import androidx.navigation.Navigation;
import androidx.navigation.ui.AppBarConfiguration;
import androidx.navigation.ui.NavigationUI;

import
com.example.myapplication.databinding.ActivityMainBinding;

import android.view.Menu;
import android.view.MenuItem;

public class MainActivity extends AppCompatActivity {

    private AppBarConfiguration appBarConfiguration;
    private ActivityMainBinding binding;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        binding =
```

```
ActivityMainBinding.inflate(getLayoutInflater());
        setContentView(binding.getRoot());

        setSupportActionBar(binding.toolbar);

        NavController navController =
Navigation.findNavController(this,
R.id.nav_host_fragment_content_main);
        appBarConfiguration = new
AppBarConfiguration.Builder(navController.getGraph()).build();
        NavigationUI.setupActionBarWithNavController(this,
navController, appBarConfiguration);

        binding.fab.setOnClickListener(new
View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Snackbar.make(view, "Replace with your own
action", Snackbar.LENGTH_LONG)
                        .setAction("Action", null).show();
            }
        });
    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        // Inflate the menu; this adds items to the action bar
if it is present.
        getMenuInflater().inflate(R.menu.menu_main, menu);
        return true;
    }

    @Override
    public boolean onOptionsItemSelected(MenuItem item) {
        // Handle action bar item clicks here. The action bar
will
        // automatically handle clicks on the Home/Up button,
so long
        // as you specify a parent activity in
AndroidManifest.xml.
        int id = item.getItemId();

        //noinspection SimplifiableIfStatement
        if (id == R.id.action_settings) {
            return true;
        }

        return super.onOptionsItemSelected(item);
    }

    @Override
```

```
    public boolean onSupportNavigateUp() {
        NavController navController =
Navigation.findNavController(this,
R.id.nav_host_fragment_content_main);
        return NavigationUI.navigateUp(navController,
appBarConfiguration)
                || super.onSupportNavigateUp();
    }
}
```

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">

    <com.google.android.material.appbar.AppBarLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"

android:theme="@style/Theme.MyApplication.AppBarOverlay">

        <androidx.appcompat.widget.Toolbar
            android:id="@+id/toolbar"
            android:layout_width="match_parent"
            android:layout_height="?attr/actionBarSize"
            android:background="?attr/colorPrimary"

app:popupTheme="@style/Theme.MyApplication.PopupOverlay" />

    </com.google.android.material.appbar.AppBarLayout>

    <include layout="@layout/content_main" />


<com.google.android.material.floatingactionbutton.FloatingActi
onButton
        android:id="@+id/fab"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="bottom|end"
        android:layout_marginEnd="@dimen/fab_margin"
        android:layout_marginBottom="16dp"
        app:srcCompat="@android:drawable/ic_dialog_email" />

</androidx.coordinatorlayout.widget.CoordinatorLayout>
```

First fragment.java

```java
package com.example.myapplication;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

import androidx.annotation.NonNull;
import androidx.fragment.app.Fragment;
import androidx.navigation.fragment.NavHostFragment;

import
com.example.myapplication.databinding.FragmentFirstBinding;

public class FirstFragment extends Fragment {

    private FragmentFirstBinding binding;

    @Override
    public View onCreateView(
            LayoutInflater inflater, ViewGroup container,
            Bundle savedInstanceState
    ) {

        binding = FragmentFirstBinding.inflate(inflater,
container, false);
        return binding.getRoot();

    }

    public void onViewCreated(@NonNull View view, Bundle
savedInstanceState) {
        super.onViewCreated(view, savedInstanceState);

        binding.buttonFirst.setOnClickListener(new
View.OnClickListener() {
            @Override
            public void onClick(View view) {

NavHostFragment.findNavController(FirstFragment.this)

.navigate(R.id.action_FirstFragment_to_SecondFragment);
            }
        });
    }

    @Override
    public void onDestroyView() {
        super.onDestroyView();
        binding = null;
    }
```

```
}
```

second fragment.java

```
package com.example.myapplication;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

import androidx.annotation.NonNull;
import androidx.fragment.app.Fragment;
import androidx.navigation.fragment.NavHostFragment;

import
com.example.myapplication.databinding.FragmentSecondB
inding;

public class SecondFragment extends Fragment {

    private FragmentSecondBinding binding;

    @Override
    public View onCreateView(
            LayoutInflater inflater, ViewGroup
container,
            Bundle savedInstanceState
    ) {

        binding =
FragmentSecondBinding.inflate(inflater, container,
false);
        return binding.getRoot();

    }

    public void onViewCreated(@NonNull View view,
Bundle savedInstanceState) {
        super.onViewCreated(view,
savedInstanceState);
```

```
        binding.buttonSecond.setOnClickListener(new
View.OnClickListener() {
            @Override
            public void onClick(View view) {

NavHostFragment.findNavController(SecondFragment.this
)

.navigate(R.id.action_SecondFragment_to_FirstFragment
);
            }
        });
    }

    @Override
    public void onDestroyView() {
        super.onDestroyView();
        binding = null;
    }

}
```

4. **Develop an android application to create user interfaces with different layouts and views.**

Using the HelloWorld project, you created in Chapters 1 and 2, create a new layout resource file for your
application, add a Frame Layout to the new layout resource, and finally place a Text View within the
Frame Layout.

1. Open the HelloWorld project in Android Studio.
2. Right-click the res/layout folder and add a new layout resource file. Name the file framelayout_example.xml.
4. Using the design panel, drag the Frame Layout and place it anywhere on the device screen.
5. Using the design panel, drag a Plain Text View and place it in the Frame Layout.
6. Type some text into the Plain Text View.

XML.java

```
<?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">
```

```
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.473"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.918" />

    <LinearLayout
        android:layout_width="409dp"
        android:layout_height="652dp"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp">

        <EditText
            android:id="@+id/editTextTextPersonName"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:ems="10"
            android:inputType="textPersonName"
            android:text="Name" />

        <EditText
            android:id="@+id/editTextTextPersonName2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:ems="10"
            android:inputType="textPersonName"
            android:text="Name" />

        <EditText
            android:id="@+id/editTextTextPersonName3"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:ems="10"
            android:inputType="textPersonName"
            android:text="Name" />

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:orientation="vertical">

            <LinearLayout
                android:layout_width="match_parent"
                android:layout_height="match_parent"
```

```
                android:orientation="horizontal">

                <Button
                    android:id="@+id/button4"
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    android:layout_weight="1"
                    android:text="Button" />

                <Button
                    android:id="@+id/button5"
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    android:layout_weight="1"
                    android:text="Button" />

                <Button
                    android:id="@+id/button6"
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content"
                    android:layout_weight="1"
                    android:text="Button" />
            </LinearLayout>
        </LinearLayout>
    </LinearLayout>

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

Main activity.java

```
package com.example.layouts_views;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

5. **Develop an android application to create a Registration form using appropriate widgets**.

Step 1 create a new android project with empty activity

Step 2 xml file drag and drop

Step 3 main activity.java fill the properties

```
<?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="com.example.applicationform.MainActivity"
    tools:layout_editor_absoluteY="81dp"
    tools:layout_editor_absoluteX="0dp">
    <TextView
        android:id="@+id/textView"
        android:layout_width="0dp"
        android:layout_height="33dp"
        android:layout_marginEnd="13dp"
        android:layout_marginStart="13dp"
        android:text="Register"
        android:textAlignment="center"
        tools:layout_constraintTop_creator="1"
        tools:layout_constraintRight_creator="1"
        tools:layout_constraintBottom_creator="1"
        app:layout_constraintBottom_toTopOf="@+id/editText"
        app:layout_constraintRight_toRightOf="parent"
        android:layout_marginTop="34dp"
        tools:layout_constraintLeft_creator="1"
        android:layout_marginBottom="27dp"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="42dp"
        android:ems="10"
        android:hint="UserName"
        android:inputType="text|textPersonName"
        tools:layout_constraintBottom_creator="1"
        app:layout_constraintBottom_toTopOf="@+id/editText2"
        tools:layout_constraintLeft_creator="1"
        android:layout_marginBottom="27dp"
        app:layout_constraintLeft_toLeftOf="@+id/textView"
/>
    <EditText
```

```
        android:id="@+id/editText2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Password"
        android:inputType="textPassword|textWebPassword"
        tools:layout_constraintRight_creator="1"
        tools:layout_constraintBottom_creator="1"
        app:layout_constraintBottom_toTopOf="@+id/editText3"
    app:layout_constraintRight_toRightOf="@+id/editText"
    tools:layout_constraintLeft_creator="1"
    android:layout_marginBottom="27dp"
    app:layout_constraintLeft_toLeftOf="@+id/editText" />
<EditText
    android:id="@+id/editText3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Confirm Password"
    android:inputType="textPassword|textWebPassword"
    tools:layout_constraintRight_creator="1"
    tools:layout_constraintBottom_creator="1"
    app:layout_constraintBottom_toTopOf="@+id/editText4"
    app:layout_constraintRight_toRightOf="@+id/editText2"
    tools:layout_constraintLeft_creator="1"
    android:layout_marginBottom="33dp"
    app:layout_constraintLeft_toLeftOf="@+id/editText2" />
<EditText
    android:id="@+id/editText4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Contact Number"
    android:inputType="phone"
    tools:layout_constraintRight_creator="1"
    tools:layout_constraintBottom_creator="1"
    app:layout_constraintBottom_toTopOf="@+id/editText5"
    app:layout_constraintRight_toRightOf="@+id/editText3"
    tools:layout_constraintLeft_creator="1"
    android:layout_marginBottom="26dp"
    app:layout_constraintLeft_toLeftOf="@+id/editText3" />
<EditText
    android:id="@+id/editText5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="email id"
    android:inputType="textEmailAddress|textWebEmailAddress"
    tools:layout_constraintRight_creator="1"
    tools:layout_constraintBottom_creator="1"
    app:layout_constraintBottom_toTopOf="@+id/button"
    app:layout_constraintRight_toRightOf="@+id/editText4"
    tools:layout_constraintLeft_creator="1"
    android:layout_marginBottom="23dp"
    app:layout_constraintLeft_toLeftOf="@+id/editText4" />
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
            android:layout_marginEnd="48dp"
            android:onClick="verify_reg"
            android:text="SUBMIT"
            tools:layout_constraintRight_creator="1"
            tools:layout_constraintBottom_creator="1"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintRight_toRightOf="@+id/editText5"

            android:layout_marginBottom="18dp" />
    </androidx.constraintlayout.widget.ConstraintLayout>
```

Main activity.java

```
package com.example.applicationform;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    EditText uname, pwd, cpwd, phno, email;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    public static boolean isValidEmailAddress(String mail) {
        String emailPattern = "[a-zA-Z0-9._-]+@[a-z]+\\.[a-
z]+";
        return mail.matches(emailPattern);
    }
    public void verify_reg(View view) {
        uname = (EditText)findViewById(R.id.editText);
        pwd = (EditText)findViewById(R.id.editText2);
        cpwd = (EditText)findViewById(R.id.editText3);
        phno = (EditText)findViewById(R.id.editText4);
        email = (EditText)findViewById(R.id.editText5);
        if(uname.getText().toString().isEmpty() ||
pwd.getText().toString().isEmpty() ||
                cpwd.getText().toString().isEmpty() ||
phno.getText().toString().isEmpty() ||
                email.getText().toString().isEmpty()) {
            Toast.makeText(this,"Please Enter all the
details...", Toast.LENGTH_LONG).show();
        }
        else if(pwd.getText().toString().length()<=8) {
            Toast.makeText(this,"Password should be more than
8 characters...",Toast.LENGTH_LONG).show();
```

```
        }
        else
if(!pwd.getText().toString().equals(cpwd.getText().toString())
) {
            Toast.makeText(this,"Passwords do not
match..!!",Toast.LENGTH_LONG).show();
        }
        else if(phno.getText().toString().length() < 10) {
            Toast.makeText(this,"Invalid Mobile
Number..!!",Toast.LENGTH_LONG).show();
        }
        else if(!isValidEmailAddress(email.getText().toString())) {
            Toast.makeText(this,"Invalid Email
ID",Toast.LENGTH_LONG).show();
        }
        else {
            Intent obj = new Intent(this,secondactivity.class);
            obj.putExtra("Uname",uname.getText().toString());
            obj.putExtra("Pwd", pwd.getText().toString());
            obj.putExtra("Mobile", phno.getText().toString());
            obj.putExtra("Email", email.getText().toString());
            startActivity(obj);
        }
    }
}
```

6. **Develop an android application to embed Picker Views in an activity.**

Step1 create an android project with java as programming language

Step 2 choose empty activity

Step 3 write the xml file with linear layout

Step 4 write the mainactivity.java file

```
7. <?xml version="1.0" encoding="utf-8"?>
   <LinearLayout
   xmlns:android="http://schemas.android.com/apk/res/android
   "
       android:layout_width="fill_parent"
       android:layout_height="fill_parent"
       android:orientation="vertical" >
       <Button android:id="@+id/btnSet"
           android:layout_width="wrap_content"
           android:layout_height="wrap_content"
           android:text="I am all set!"
           android:onClick="onClick" />
       <DatePicker android:id="@+id/datePicker"
           android:layout_width="wrap_content"
           android:layout_height="wrap_content" />
       <TimePicker android:id="@+id/timePicker"
           android:layout_width="wrap_content"
           android:layout_height="wrap_content" />
   </LinearLayout>
```

Main activity.java

```
package com.example.pickerview;

import androidx.appcompat.app.AppCompatActivity;

import android.app.TimePickerDialog;
import android.icu.text.SimpleDateFormat;
import android.os.Bundle;
import android.view.View;
import android.widget.DatePicker;
import android.widget.TimePicker;
import android.widget.Toast;

import java.util.Date;

public class MainActivity extends AppCompatActivity {
        TimePicker timePicker;
        DatePicker datePicker;
        int hour, minute;
        /** Called when the activity is first created. */
        @Override
        public void onCreate(Bundle savedInstanceState) {
            super.onCreate(savedInstanceState);
            setContentView(R.layout.activity_main);
            timePicker = (TimePicker)
findViewById(R.id.timePicker);
            timePicker.setIs24HourView(true);
            datePicker = (DatePicker)
findViewById(R.id.datePicker);
        }
        private TimePickerDialog.OnTimeSetListener
mTimeSetListener =
                new TimePickerDialog.OnTimeSetListener()
                {
                    public void onTimeSet(
                            TimePicker view, int hourOfDay,
int minuteOfHour)
                    {
                        hour = hourOfDay;
                        minute = minuteOfHour;
                        SimpleDateFormat timeFormat = new
SimpleDateFormat("hh:mm aa");
                        Date date = new Date();
                        String strDate =
timeFormat.format(date);
                        Toast.makeText(getBaseContext(),
                                "You have selected " +
strDate,
```

```
                                    Toast.LENGTH_SHORT).show();
                        }
                    };
            public void onClick(View view) {
                Toast.makeText(getBaseContext(),
                        "Date selected:" + (datePicker.getMonth()
+ 1) +
                                "/" + datePicker.getDayOfMonth() +
                                "/" + datePicker.getYear() + "\n"
+
                                "Time selected:" +
timePicker.getHour() +
                                ":" + timePicker.getMinute(),
                        Toast.LENGTH_SHORT).show();
            }
        }
```

7 Develop an android application on using implicit & explicit Intents.

Step 1 create a new android project with empty activity

Step 2 .xml file

```
<?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="com.example.intents.MainActivity">
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/display_contacts"
        android:onClick="displayContacts"
        tools:layout_constraintTop_creator="1"
        android:layout_marginStart="27dp"
        android:layout_marginTop="12dp"
        tools:layout_constraintLeft_creator="1"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        android:layout_marginLeft="27dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Step 3 main activity.java

```
package com.example.intents;

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

```
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

    public void displayContacts(View view) {
        Intent i= new Intent(Intent.ACTION_VIEW);
        i.setData(Uri.parse("content://contacts/people"));
        startActivity(i);
    }
}
```

output:

8. **Develop an android application to utilize Action bar**.

Step 1 create an android project with basic activity

Step 2 mainactivity.java

```
package com.example.myactionbar;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;
import androidx.appcompat.widget.Toolbar;

import
com.google.android.material.floatingactionbutton.FloatingActio
nButton;
import com.google.android.material.snackbar.Snackbar;

public class MainActivity extends AppCompatActivity {
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Toolbar toolbar = (Toolbar)
findViewById(R.id.toolbar);
```

```
        setSupportActionBar(toolbar);
        FloatingActionButton fab = (FloatingActionButton)
findViewById(R.id.fab);
        fab.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Snackbar.make(view,
                                "Replace with your own
action", Snackbar.LENGTH_LONG)
                        .setAction("Action", null).show();
            }
        });
    }
    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
// Inflate the menu; this adds items to the action bar if it
is present.
//getMenuInflater().inflate(R.menu.menu_main, menu);
        CreateMenu(menu);
        return true;
    }
    private void CreateMenu(Menu menu)
    {
        MenuItem mnu1 = menu.add(0, 0, 0, "Item 1");
        {
            mnu1.setIcon(R.mipmap.ic_launcher);

mnu1.setShowAsAction(MenuItem.SHOW_AS_ACTION_IF_ROOM);
        }
        MenuItem mnu2 = menu.add(0, 1, 1, "Item 2");
        {
            mnu2.setIcon(R.mipmap.ic_launcher);

mnu2.setShowAsAction(MenuItem.SHOW_AS_ACTION_IF_ROOM);
        }
        MenuItem mnu3 = menu.add(0, 2, 2, "Item 3");
        {
            mnu3.setIcon(R.mipmap.ic_launcher);

mnu3.setShowAsAction(MenuItem.SHOW_AS_ACTION_IF_ROOM);
        }
        MenuItem mnu4 = menu.add(0, 3, 3, "Item 4");
        {

mnu4.setShowAsAction(MenuItem.SHOW_AS_ACTION_IF_ROOM);
        }
        MenuItem mnu5 = menu.add(0, 4, 4,"Item 5");
        {

mnu5.setShowAsAction(MenuItem.SHOW_AS_ACTION_IF_ROOM);
        }
```

```
    }
    private boolean MenuChoice(MenuItem item)
    {
        switch (item.getItemId()) {
            case 0:
                Toast.makeText(this, "You clicked on Item 1",
                        Toast.LENGTH_LONG).show();
                return true;
            case 1:
                Toast.makeText(this, "You clicked on Item 2",
                        Toast.LENGTH_LONG).show();
                return true;
            case 2:
                Toast.makeText(this, "You clicked on Item 3",
                        Toast.LENGTH_LONG).show();
                return true;
            case 3:
                Toast.makeText(this, "You clicked on Item 4",
                        Toast.LENGTH_LONG).show();
                return true;
            case 4:
                Toast.makeText(this, "You clicked on Item 5",
                    Toast.LENGTH_LONG).show();
              return true;
        }
        return false;
    }
    @Override
    public boolean onOptionsItemSelected(MenuItem item) {
// Handle action bar item clicks here. The action bar will
// automatically handle clicks on the Home/Up button, so long
// as you specify a parent activity in AndroidManifest.xml.
        int id = item.getItemId();
//noinspection SimplifiableIfStatement
        if (id == R.id.action_settings) {
            return true;
        }
        return MenuChoice(item);
    }
}
```

output: