

Question 1 - Create a basic Hello World program.**Solution – main_activity.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">
    <TextView
        android:layout_width="209dp"
        android:layout_height="86dp"        android:text="Hello
World!"        android:textAlignment="center"
        android:textSize="34sp"        android:textStyle="bold"
        android:gravity="center"
        android:textColor="@color/black"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

ActivityMain.java

```
package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity; public
class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

Output –My Application**Hello World!**

Question 2 - Create a simple application to change Color of background of any textbox with the click of a button. Solution – main_activity.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">

    <TextView
        android:id="@+id/TextView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:background="#FFFFFF"
        android:text="Hello World!"
        android:textColor="#FF03DAC5"
        android:textSize="50sp"
        android:textStyle="bold"

        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.314" />

    <Button
        android:id="@+id/Button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Red"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.90"
        app:layout_constraintLeft_toLeftOf="@id/Button2"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="@id/TextView1" />

    <Button
        android:id="@+id/Button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Yellow"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.10"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="@id/Button1"
        app:layout_constraintTop_toTopOf="@id/TextView1" />

    <Button
```

```
        android:id="@+id/Button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Reset"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintLeft_toLeftOf="@id/Button2"
        app:layout_constraintRight_toRightOf="@id/Button1"
        app:layout_constraintTop_toTopOf="@id/TextView1" />

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

ActivityMain.java

```
package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity;
import android.graphics.Color;
import android.os.Bundle; import
android.view.View; import
android.widget.Button;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        TextView textview;
        Button button1, button2, button3;
        textview=findViewById(R.id.TextView1);
        button1=findViewById(R.id.Button1);
        button2=findViewById(R.id.Button2);
        button3=findViewById(R.id.Button3);
        button1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                textview.setBackgroundColor(Color.RED);
            }
        });
        button2.setOnClickListener(new View.OnClickListener() {
            @Override            public
            void onClick(View v) {
                textview.setBackgroundColor(Color.YELLOW);
            }
        });
        button3.setOnClickListener(new View.OnClickListener() {
            @Override            public
            void onClick(View v) {
                textview.setBackgroundColor(Color.WHITE);
            }
        });
    }
}
```

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Output –

My Application

My Application

Hello World!

Hello World!

YELLOW

RESET

RED

YELLOW

RESET

RED



My Application

My Application

Hello World!

Hello World!

YELLOW

RESET

RED

YELLOW

RESET

RED



Question 3 - Create a simple app to change background colour on button click.

Solution – main_activity.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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:id="@+id/R"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/Button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="100dp"
        android:text="Red" />

    <Button
        android:id="@+id/Button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/Button1"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="52dp"
        android:text="Blue" />

    <Button
        android:id="@+id/Button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/Button2"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="53dp"
        android:layout_marginBottom="383dp"
        android:text="Reset" />
</RelativeLayout>
```

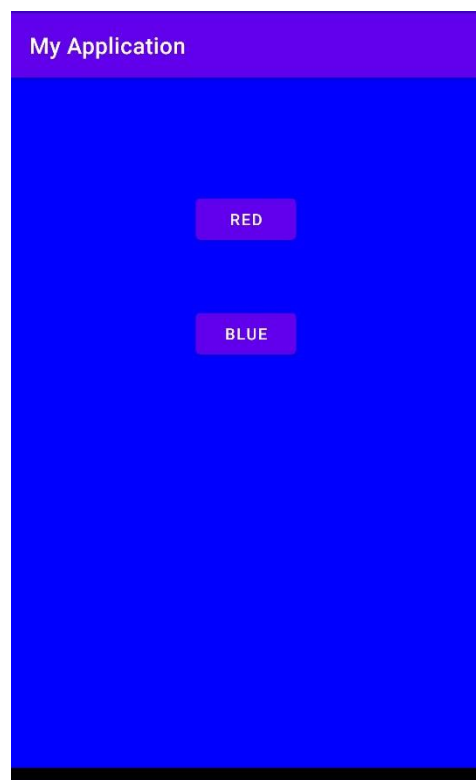
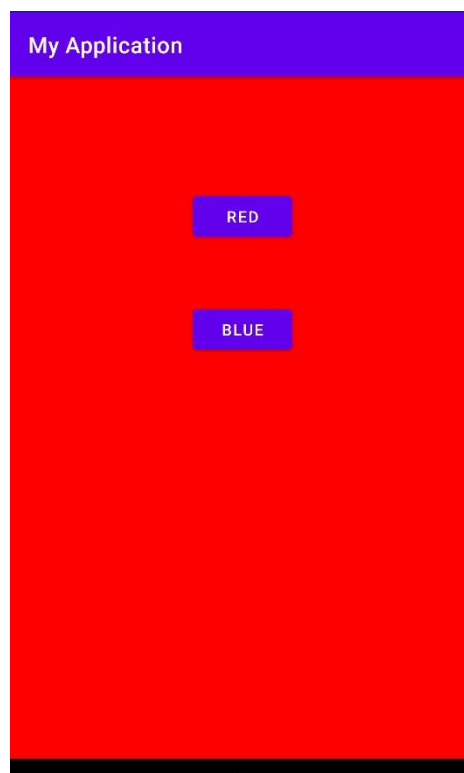
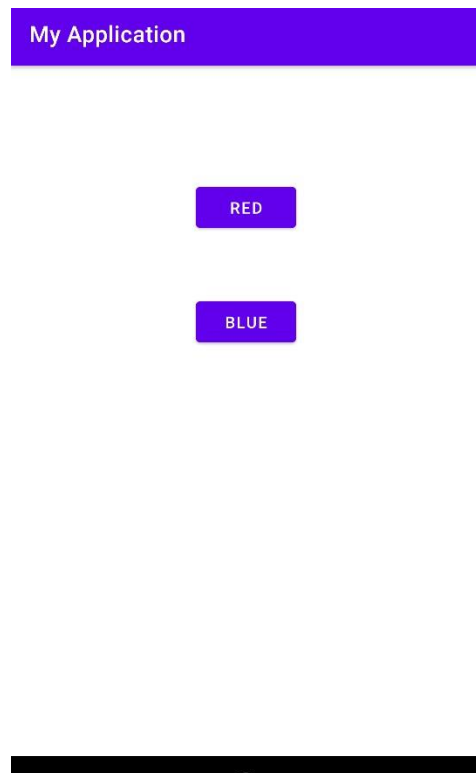
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Output –



Question 4 - Create a simple app to add two numbers.**Solution – main_activity.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">

    <TextView        android:id="@+id/tv1"
android:layout_width="wrap_content"
    android:layout_height="wrap_content"

        android:textSize="34sp"
android:textStyle="bold"
        app:layout_constraintBottom_toTopOf="@+id/b1"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/et2" />

    <EditText        android:id="@+id/et1"
android:layout_width="250dp"
android:layout_height="40dp"
android:layout_marginTop="56dp"
android:inputType="number"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText        android:id="@+id/et2"
android:layout_width="250dp"
android:layout_height="40dp"
android:layout_marginTop="52dp"
android:inputType="number"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/et1" />

    <Button          android:id="@+id/b1"
android:layout_width="100dp"
android:layout_height="48dp"
android:layout_marginBottom="304dp"
        android:text="add"
        app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.498"
app:layout_constraintStart_toStartOf="parent" />
```


</androidx.constraintlayout.widget.ConstraintLayout>

ActivityMain.java

```
package com.example.myapplication;
```

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

```
import android.os.Bundle; import  
android.view.View; import  
android.widget.Button; import  
android.widget.EditText;  
import android.widget.TextView;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
        EditText value1, value2;  
        TextView result;  
        Button b;
```

```
        value1=findViewById(R.id.et1);  
        value2=findViewById(R.id.et2);  
        result=findViewById(R.id.tv1);        b=findViewById(R.id.b1);  
        b.setOnClickListener(new View.OnClickListener() {
```

```
    @Override
```

```
        public void onClick(View view) {  
            int sum=Integer.parseInt(value1.getText().toString()) + Integer.parseInt(value2.getText().toString());  
            result.setText(String.valueOf(sum));
```

```
        }  
    });  
}
```

Output –

My Application

ADD

My Application

25

68

93

ADD



Question 5 - Create a simple app to create a simple Calculator in android.**Solution – main_activity.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">

    <TextView
        android:id="@+id/tv1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"

        android:textSize="34sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toTopOf="@+id/b1"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/et2" />

    <EditText
        android:id="@+id/et1"
        android:layout_width="250dp"
        android:layout_height="40dp"
        android:layout_marginTop="56dp"
        android:inputType="number"        android:hint="Enter
First value"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText
        android:id="@+id/et2"
        android:layout_width="250dp"
        android:layout_height="40dp"
        android:layout_marginTop="52dp"
        android:inputType="number"        android:hint="Enter
Second value"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/et1" />

    <Button
```

```
        android:id="@+id/b1"
        android:layout_width="100dp"
        android:layout_height="48dp"
        android:layout_marginBottom="308dp"
        android:text="add"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toStartOf="@+id/b2"
        app:layout_constraintHorizontal_bias="0.267"
        app:layout_constraintStart_toStartOf="parent" />

        <Button        android:id="@+id/b2"
        android:layout_width="120dp"
        android:layout_height="48dp"
        android:layout_marginBottom="308dp"
        android:text="Subtract"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toStartOf="@+id/b3"
        app:layout_constraintHorizontal_bias="0.858"
        app:layout_constraintStart_toStartOf="parent" />

        <Button        android:id="@+id/b3"
        android:layout_width="120dp"
        android:layout_height="48dp"
        android:layout_marginBottom="308dp"
        android:text="multiply"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.945"
        app:layout_constraintStart_toStartOf="parent" />

        <Button
        android:id="@+id/b4"
        android:layout_width="120dp"
        android:layout_height="48dp"
        android:text="divide"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.457"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/b2"
        app:layout_constraintVertical_bias="0.084" />

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

ActivityMain.java

```
package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle; import
android.view.View; import
android.widget.Button; import
```

```
android.widget.EditText; import
android.widget.TextView;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        EditText value1, value2;
        TextView result;
        Button b1,b2,b3,b4;

        value1=findViewById(R.id.et1);
        value2=findViewById(R.id.et2);
        result=findViewById(R.id.tv1);
        b1=findViewById(R.id.b1);    b2=findViewById(R.id.b2);
        b3=findViewById(R.id.b3);    b4=findViewById(R.id.b4);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                int sum=Integer.parseInt(value1.getText().toString()) + Integer.parseInt(value2.getText().toString());
                result.setText(String.valueOf(sum));
            }
        });
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {

                int sub=Integer.parseInt(value1.getText().toString()) - Integer.parseInt(value2.getText().toString());
                result.setText(String.valueOf(sub));
            }
        });
        b3.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {

                int mul=Integer.parseInt(value1.getText().toString()) * Integer.parseInt(value2.getText().toString());
                result.setText(String.valueOf(mul));
            }
        });
        b4.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {

                int div=Integer.parseInt(value1.getText().toString()) / Integer.parseInt(value2.getText().toString());
                result.setText(String.valueOf(div));
            }
        });
    }
}
```

My Application

Enter First value

Enter Second value

ADD

SUBTRACT

MULTIPLY

DIVIDE

My Application

25

5

20

ADD

SUBTRACT

MULTIPLY

DIVIDE

My Application

25

5

125

ADD

SUBTRACT

MULTIPLY

DIVIDE

My Application

25

5

5

ADD

SUBTRACT

MULTIPLY

DIVIDE

My Application

25

5

30

ADD

SUBTRACT

MULTIPLY

DIVIDE



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-

Question 6 Create an app to set image on Image view.**Solution – main_activity.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">

    <ImageView        android:id="@+id/imageView2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:srcCompat="@drawable/paintedstyle" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

ActivityMain.java

```
package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri; import
android.os.Bundle; import
android.util.Log; import
android.view.View; import
android.widget.Button; import
android.widget.EditText;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
    }
}
```

Output –

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My Application



-

Question 7 Create a program to change image on button click.**Solution – main_activity.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">
```

```
    <ImageView        android:id="@+id/iv1"
android:layout_width="410dp"
android:layout_height="485dp"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
```

```
    <Button
        android:id="@+id/bt1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="70dp"
        android:text="Previous"
        android:backgroundTint="@color/black"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/iv1"
        app:layout_constraintVertical_bias="0.498" />
```

```
    <Button
        android:id="@+id/bt2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginEnd="70dp"
        android:text="Next"
        android:backgroundTint="@color/black"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/iv1"
        app:layout_constraintVertical_bias="0.498" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

ActivityMain.java

```
package com.example.imageview;
```

```
import androidx.appcompat.app.AppCompatActivity;
import android.media.Image; import
android.os.Bundle; import android.view.View; import
android.widget.Button; import
android.widget.ImageView;
public class MainActivity extends AppCompatActivity {
    Button bt1, bt2;
    ImageView iv1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        iv1=findViewById(R.id.iv1);    bt1=findViewById(R.id.bt1);
        bt2=findViewById(R.id.bt2);
        bt1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                iv1.setImageResource(R.drawable.bone);
            }
        });
        bt2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                iv1.setImageResource(R.drawable.iiustration);
            }
        });
    }
}
```

Output –

Image View

Image View



PREVIOUS

NEXT

PREVIOUS

NEXT

Question 8 Create a program to depict activity lifecycle.

Solution – main_activity.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">

    <TextView
        android:id="@+id/textView4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="TextView"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

ActivityMain.java

```
package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle;
import android.util.Log;

public class MainActivity extends AppCompatActivity {
    public static final String status=MainActivity.class.getSimpleName();
    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
        Log.i(status,"In method onCreate");
    }
    @Override    protected
void onStart() {
super.onStart();
        Log.i(status,"In method onStart");
    }
    @Override    protected void
onResume() {
super.onResume();
        Log.i(status,"In method onResume");
    }
    @Override    protected
void onPause() {
super.onPause();
        Log.i(status,"In method onPause");
    }
    @Override
    protected void onStop() {
super.onStop();
        Log.i(status,"In method onStop");
    }
    @Override
    protected void onDestroy() {
super.onDestroy();
        Log.i(status,"In method onDestroy");
    }
}
```

Output -

```
Emulator Pixel_XL_API_27 Andro com.example.myapplication (1406) Verbose Q Regex Show only selected application

logcat

2021-11-03 16:02:19.895 14065-14065/com.example.myapplication I/MainActivity: In method onStop
2021-11-03 16:02:25.221 14065-14065/com.example.myapplication I/MainActivity: In method onStart
2021-11-03 16:02:25.223 14065-14065/com.example.myapplication I/MainActivity: In method onResume
2021-11-03 16:02:25.412 14065-14091/com.example.myapplication D/EGL_emulation: eglMakeCurrent: 0xdc7050c0: ver 2 0 (tinfo 0xdc703290)
2021-11-03 16:02:36.254 14065-14065/com.example.myapplication I/MainActivity: In method onPause
2021-11-03 16:02:36.294 14065-14091/com.example.myapplication D/EGL_emulation: eglMakeCurrent: 0xdc7050c0: ver 2 0 (tinfo 0xdc703290)
2021-11-03 16:02:36.382 14065-14065/com.example.myapplication I/MainActivity: In method onStop
2021-11-03 16:02:40.274 14065-14065/com.example.myapplication I/MainActivity: In method onStart
2021-11-03 16:02:40.275 14065-14065/com.example.myapplication I/MainActivity: In method onResume
2021-11-03 16:02:40.436 14065-14091/com.example.myapplication D/EGL_emulation: eglMakeCurrent: 0xdc7050c0: ver 2 0 (tinfo 0xdc703290)
2021-11-03 16:02:48.888 14065-14065/com.example.myapplication I/MainActivity: In method onPause
2021-11-03 16:02:48.922 14065-14091/com.example.myapplication D/EGL_emulation: eglMakeCurrent: 0xdc7050c0: ver 2 0 (tinfo 0xdc703290)
2021-11-03 16:02:48.928 14065-14065/com.example.myapplication I/MainActivity: In method onStop
2021-11-03 16:02:55.140 14065-14065/com.example.myapplication I/MainActivity: In method onStart
2021-11-03 16:02:55.143 14065-14065/com.example.myapplication I/MainActivity: In method onResume
2021-11-03 16:02:55.273 14065-14091/com.example.myapplication D/EGL_emulation: eglMakeCurrent: 0xdc7050c0: ver 2 0 (tinfo 0xdc703290)
2021-11-03 16:03:04.603 14065-14065/com.example.myapplication I/MainActivity: In method onPause
2021-11-03 16:03:04.977 14065-14078/com.example.myapplication I/zygote: Do partial code cache collection, code=23KB, data=29KB
2021-11-03 16:03:04.978 14065-14078/com.example.myapplication I/zygote: After code cache collection, code=23KB, data=29KB
2021-11-03 16:03:04.978 14065-14078/com.example.myapplication I/zygote: Increasing code cache capacity to 128KB
2021-11-03 16:03:04.983 14065-14091/com.example.myapplication D/EGL_emulation: eglMakeCurrent: 0xdc7050c0: ver 2 0 (tinfo 0xdc703290)
2021-11-03 16:03:05.372 14065-14065/com.example.myapplication I/MainActivity: In method onStop
2021-11-03 16:03:05.390 14065-14065/com.example.myapplication I/MainActivity: In method onDestroy
```

Question 9 Create a program to show implicit intent.

Solution – main_activity.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">
```

```

<EditText
android:id="@+id/et1"
android:layout_width="365dp"
android:layout_height="45dp"
    android:hint="Url"
    app:layout_constraintBottom_toTopOf="@+id/bt1"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.691" />
<Button
android:id="@+id/bt1"
android:layout_width="348dp"
android:layout_height="52dp"
android:text="Search"
    app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

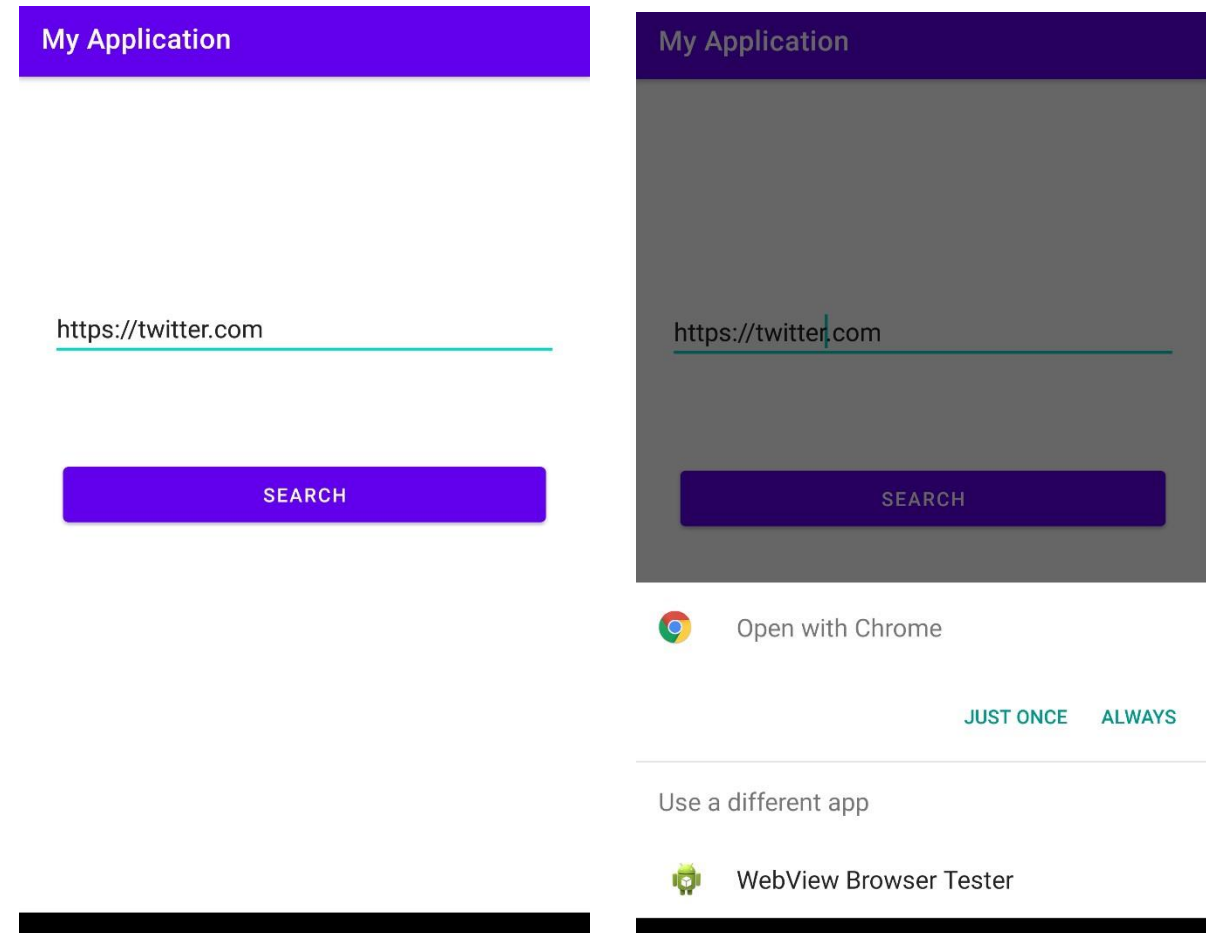
ActivityMain.java

```

package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri; import
android.os.Bundle; import
android.util.Log; import
android.view.View; import
android.widget.Button; import
android.widget.EditText;
public class MainActivity extends AppCompatActivity {
    EditText et1;
    Button bt1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        et1=findViewById(R.id.et1);    bt1=findViewById(R.id.bt1);
        bt1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String url=et1.getText().toString();
                Intent i=new Intent(Intent.ACTION_VIEW, Uri.parse(url));
                startActivity(i);
            }
        });
    }
}

```


Output –



Question 10 - Create a program to show explicit intent.**Solution – main_activity.xml****Activity1** main_activity.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/bt1"
        android:layout_width="348dp"
        android:layout_height="52dp"        android:text="Next
        Activity"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

ActivityMain.java

```
package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.net.Uri; import
android.os.Bundle; import
android.util.Log; import
android.view.View; import
android.widget.Button; import
android.widget.EditText;
public class MainActivity extends AppCompatActivity {

    EditText et1;
    Button bt1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        bt1=findViewById(R.id.bt1);
        bt1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i=new Intent(getApplicationContext(), Activity2.class);
                startActivity(i);
            }
        });
    }
}
```

```
}
```

Activity2

main_activity.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=".Activity2">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Second Activity"
        android:textColor="#157FDC"
        android:textSize="34sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.332" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

ActivityMain.java

```
package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle;
public class Activity2 extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_2);
    }
}
```

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Output –

My Application

Second Activity

My Application

NEXT ACTIVITY

Question 11 - Create a program to show text view and its attributes.**Solution – main_activity.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">
    <TextView
        android:layout_width="209dp"
android:layout_height="86dp"        android:fontFamily="sans-
serif-medium"
        android:gravity="center"
android:text="Hello World!"
android:textAlignment="center"
android:textColor="@color/black"
android:textSize="34sp"
        android:textStyle="italic"
android:typeface="monospace"
        app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

ActivityMain.java

```
package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle;
public class Activity2 extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_2);
    }
}
```

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Output –

My Application

Hello World!

Question 12 - Create a program to depict fragment.**Solution – main_activity.xml**

```
<?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"    tools:context=".MainActivity">
    <fragment
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:id="@+id/f1"
        android:layout_weight="1"
        android:name="com.example.myapplication.FirstFragment"/>
    <fragment
        android:layout_width="0dp"
        android:layout_height="match_parent"
        android:id="@+id/f2"
        android:layout_weight="1"
        android:name="com.example.myapplication.SecondFragment"/>
</LinearLayout>
```

ActivityMain.java

```
package com.example.myapplication; import
androidx.appcompat.app.AppCompatActivity; public
class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    }
}
```

fragment_first.xml

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#FF03DAC5"
    tools:context=".FirstFragment">
    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="First Fragment"
        android:gravity="center"    android:textSize="36sp"
```

```
android:textStyle="bold"
android:textColor="@color/white"/>
</FrameLayout>
```

FisrtFragment.java

```
package com.example.myapplication; import
android.os.Bundle; import
androidx.fragment.app.Fragment; import
android.view.LayoutInflater; import android.view.View;
import android.view.ViewGroup; public class
FirstFragment extends Fragment {    private static final
String ARG_PARAM1 = "param1";    private static final
String ARG_PARAM2 = "param2";    private String
mParam1;    private String mParam2;
    public FirstFragment() {
    }
    public static FirstFragment newInstance(String param1, String param2) {
        FirstFragment fragment = new FirstFragment();
        Bundle args = new Bundle();
        args.putString(ARG_PARAM1, param1);
        args.putString(ARG_PARAM2, param2);
        fragment.setArguments(args);
        return fragment;
    }
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        if (getArguments() != null) {
            mParam1 = getArguments().getString(ARG_PARAM1);
            mParam2 = getArguments().getString(ARG_PARAM2);
        }
    }
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
        Bundle savedInstanceState) {

        return inflater.inflate(R.layout.fragment_first, container, false);
    }
}
```

fragment_second.xml

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#FF03DAC5"
    tools:context=".SecondFragment">
    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="Second Fragment"
        android:gravity="center"        android:textSize="36sp"
```

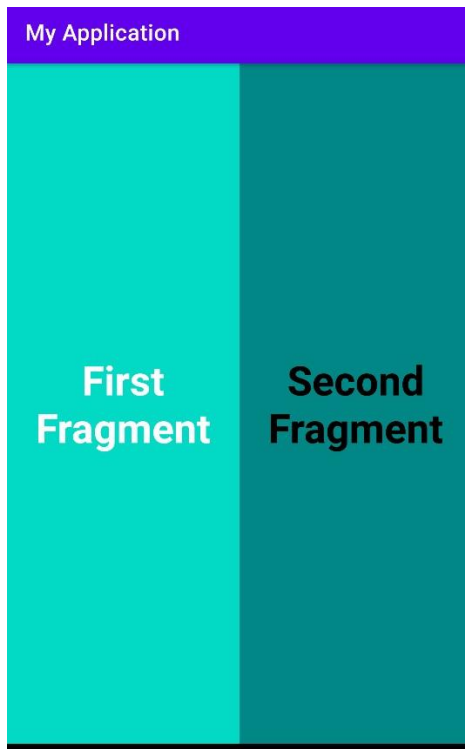


```
android:textStyle="bold"
android:textColor="@color/black"/>
</FrameLayout>
```

SecondFragment.java

```
package com.example.myapplication; import
android.os.Bundle; import
androidx.fragment.app.Fragment; import
android.view.LayoutInflater; import android.view.View;
import android.view.ViewGroup; public class
FirstFragment extends Fragment {    private static
final String ARG_PARAM1 = "param1";    private static
final String ARG_PARAM2 = "param2";    private
String mParam1;    private String mParam2;
    public FirstFragment() {
    }
    public static FirstFragment newInstance(String param1, String param2) {
        FirstFragment fragment = new FirstFragment();
        Bundle args = new Bundle();
        args.putString(ARG_PARAM1, param1);
        args.putString(ARG_PARAM2, param2);
        fragment.setArguments(args);
        return fragment;
    }
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);        if
(getArguments() != null) {
            mParam1 = getArguments().getString(ARG_PARAM1);
            mParam2 = getArguments().getString(ARG_PARAM2);
        }
    }
}
```

Output -



**Question 13 - Create a program in android to show the use of array adapter.
Solution – main_activity.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">

    <ListView
        android:id="@+id/lv1"
        android:layout_width="350dp"
        android:layout_height="500dp"
        android:background="#AEEFED"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"/>

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

ActivityMain.java

```
package com.example.arrayadapter;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle; import
android.widget.ArrayAdapter;
import android.widget.ListView;
```

```
public class MainActivity extends AppCompatActivity {  
    ListView lv1;  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
        lv1=findViewById(R.id.lv1);  
        String names[]={"Utsav","Abhey","Yogi","Sachin","Naveen","Nitin","Sanket"};  
        ArrayAdapter<String> ad=new ArrayAdapter<String>(this, R.layout.name_view, R.id.tv1, names);  
        lv1.setAdapter(ad);  
    }  
}
```

```
name_view.xml  
<?xml version="1.0" encoding="utf-8"?>  
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
    android:layout_width="match_parent"    android:layout_height="match_parent">  
    <TextView  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"    android:id="@+id/tv1"  
        android:layout_gravity="center"  
        android:textColor="@color/black"    android:textSize="32sp"  
        android:textStyle="bold"  
        android:layout_marginStart="20dp"/>  
</LinearLayout>
```

Output -

Array Adapter

Gaurav

Abhey

Yogi

Sachin

Naveen

Nitin

Sanket

Question 14 – Create a program to show a Toast.

Solution – main_activity.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/b1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:backgroundTint="#020101"        android:text="Click
for Toast"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

ActivityMain.java

```
package com.example.arrayadapter;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle; import android.view.View;
import android.widget.Button; import
android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    Button b1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b1=findViewById(R.id.b1);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Toast.makeText(MainActivity.this, "Here is your Toast", Toast.LENGTH_LONG).show();
            }});
    }}
```

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Output –

Array Adapter

CLICK FOR TOAST

Here is your Toast

Question 15 - Implement the following designs using Tabular Layout in android.**Solution – 1.:****Table.xml**

```
<?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"
    >
    <TableRow
        android:layout_width="wrap_content"
        android:layout_height="match_parent">
        <TextView
            android:layout_height="wrap_content"
            android:layout_width="wrap_content"
            android:id="@+id/tv1"
            android:text="Row 2\nColumn2"
            android:padding="18dp"
            android:gravity="center"
            android:textStyle="bold"
            android:textColor="@color/black"
            android:textSize="25sp"
            android:background="@drawable/border"/>
        <TextView
            android:layout_height="wrap_content"
            android:layout_width="wrap_content"
            android:id="@+id/tv2"
            android:text="Row 2\nColumn2"
            android:textColor="@color/black"
            android:padding="18dp"
            android:gravity="center"
            android:textStyle="bold"
            android:textSize="25sp"
            android:background="@drawable/border" />
        <TextView
            android:layout_height="wrap_content"
            android:layout_width="wrap_content"
            android:id="@+id/tv3"
            android:text="Row 2\nColumn2"
            android:textColor="@color/black"
            android:padding="18dp"
            android:gravity="center"
            android:textStyle="bold"
            android:textSize="25sp"
            android:background="@drawable/border"/>
        </TableRow>
        <TableRow>
        <TextView
            android:layout_height="wrap_content"
            android:layout_width="wrap_content"
```

```

        android:id="@+id/tv4"
        android:text="Row 2\nColumn2"
        android:textColor="@color/black"
        android:padding="18dp"
        android:gravity="center"
        android:textStyle="bold"
        android:textSize="25sp"
        android:layout_span="2"
        android:background="@drawable/border"/>
    <TextView
        android:layout_height="wrap_content"
        android:layout_width="wrap_content"
        android:id="@+id/tv5"
        android:text="Row 2\nColumn2"
        android:textColor="@color/black"
        android:padding="18dp"
        android:gravity="center"
        android:textStyle="bold"
        android:textSize="25sp"
        android:background="@drawable/border"/>
    </TableRow>
    <TableRow>        <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_span="3"
        android:background="@drawable/border"
        android:gravity="center"
        android:padding="18dp"        android:text="Row
        3\nColumn1"
        android:textColor="@color/black"
        android:textSize="25sp"
        android:textStyle="bold" />
    </TableRow>
</TableLayout>

```

ActivityMain.xml

```

package com.example.arrayadapter; 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.table);
    }
}

```


Output -

Array Adapter		
Row 2 Column2	Row 2 Column2	Row 2 Column2
Row 2 Column2		Row 2 Column2
Row 3 Column1		

2.: table.xml

```

<TableLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"    android:layout_height="match_parent">
    <TableRow
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_gravity="center"
        >
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:background="@drawable/border"
            android:gravity="center"
            android:paddingTop="30dp"
            android:paddingBottom="30dp"
            android:paddingStart="70dp"
            android:paddingEnd="70dp"
            android:text="Weather Table"
            android:textColor="@color/black"
            android:textSize="40sp"          android:textStyle="bold"
            android:layout_span="6"/>
        </TableRow>
        <TableRow>
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:background="@drawable/border"
            android:gravity="center"
            android:padding="18dp"          android:text=""
            android:paddingStart="52dp"
            android:paddingEnd="52dp"
            android:textColor="@color/black"
            android:textSize="32sp"
            />
        <TextView
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:background="@drawable/border"
            android:gravity="center"
            android:padding="18dp"          android:text="Feb

```

```
7"        android:paddingStart="60dp"
android:paddingEnd="60dp"
android:textColor="@color/black"
android:textSize="30sp"
    />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:background="@drawable/border"
        android:gravity="center"
        android:padding="18dp"        android:text="Feb 8"
        android:paddingStart="60dp"
        android:paddingEnd="60dp"
        android:textColor="@color/black"
        android:textSize="30sp"
    />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:background="@drawable/border"
        android:gravity="center"
        android:padding="18dp"        android:text="Feb
9"        android:paddingStart="60dp"
        android:paddingEnd="60dp"
        android:textColor="@color/black"
        android:textSize="30sp"
    />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:background="@drawable/border"
        android:gravity="center"
        android:padding="18dp"        android:text="Feb
10"       android:paddingStart="60dp"
        android:paddingEnd="60dp"
        android:textColor="@color/black"
        android:textSize="30sp"
    />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:background="@drawable/border"
        android:gravity="center"
        android:padding="18dp"        android:text="Feb
11"       android:paddingStart="60dp"
        android:paddingEnd="60dp"
        android:textColor="@color/black"
        android:textSize="30sp"
    />
    </TableRow>
    <TableRow>
    <TextView
```

```
        android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:background="@drawable/border"
        android:gravity="center"
android:padding="18dp"        android:text="Day
High"        android:paddingStart="52dp"
android:paddingEnd="52dp"
android:textColor="@color/black"
android:textSize="32sp"
android:textStyle="bold" />        <TextView
        android:layout_width="wrap_content"
android:layout_height="match_parent"
android:background="@drawable/border"
        android:gravity="center"
android:padding="18dp"
android:paddingStart="60dp"
android:paddingEnd="60dp"
android:text="28\u2109"
android:textColor="@color/black"
android:textSize="32sp" />
        <TextView
        android:layout_width="wrap_content"
android:layout_height="match_parent"
android:background="@drawable/border"
        android:gravity="center"
android:padding="18dp"
android:paddingStart="70dp"
android:paddingEnd="70dp"
android:text="26\u2109"
android:textColor="@color/black"
android:textSize="32sp" />
        <TextView
        android:layout_width="wrap_content"
android:layout_height="match_parent"
android:background="@drawable/border"
        android:gravity="center"
android:padding="18dp"
android:paddingStart="70dp"
android:paddingEnd="70dp"
android:text="23\u2109"
android:textColor="@color/black"
android:textSize="32sp"/>
        <TextView
        android:layout_width="wrap_content"
android:layout_height="match_parent"
android:background="@drawable/border"
        android:gravity="center"
android:padding="18dp"
android:paddingStart="60dp"
android:paddingEnd="60dp"
android:text="17\u2109"
android:textColor="@color/black"
android:textSize="32sp" />
        <TextView
```

```
        android:layout_width="wrap_content"
android:layout_height="match_parent"
android:background="@drawable/border"
        android:gravity="center"
android:padding="18dp"
android:paddingStart="60dp"
android:paddingEnd="60dp"
android:text="19\u2109"
android:textColor="@color/black"
android:textSize="32sp"/>
    </TableRow>
    <TableRow>
<TextView
        android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:background="@drawable/border"
        android:gravity="center"
android:padding="18dp"
android:text="Day                Low"
android:paddingStart="52dp"
android:paddingEnd="52dp"
android:textColor="@color/black"
android:textSize="32sp"
android:textStyle="bold" />
    <TextView
        android:layout_width="wrap_content"
android:layout_height="match_parent"
android:background="@drawable/border"
        android:gravity="center"
android:padding="18dp"
android:paddingStart="60dp"
android:paddingEnd="60dp"
android:text="15\u2109"
android:textColor="@color/black"
android:textSize="32sp" />
    <TextView
android:layout_width="wrap_content"
android:layout_height="match_parent"
android:background="@drawable/border"
        android:gravity="center"
android:padding="18dp"
android:paddingStart="70dp"
android:paddingEnd="70dp"
android:text="14\u2109"
android:textColor="@color/black"
android:textSize="32sp" />
    <TextView
        android:layout_width="wrap_content"
android:layout_height="match_parent"
android:background="@drawable/border"
        android:gravity="center"
android:padding="18dp"
android:paddingStart="70dp"
android:paddingEnd="70dp"
```

```
android:text="3\u2109"
android:textColor="@color/black"
android:textSize="32sp"/>
    <TextView
android:layout_width="wrap_content"
android:layout_height="match_parent"
android:background="@drawable/border"
    android:gravity="center"
android:padding="18dp"
android:paddingStart="60dp"
android:paddingEnd="60dp"
android:text="5\u2109"
android:textColor="@color/black"
android:textSize="32sp" />
    <TextView
    android:layout_width="wrap_content"
android:layout_height="match_parent"
android:background="@drawable/border"
    android:gravity="center"
android:padding="18dp"
android:paddingStart="60dp"
android:paddingEnd="60dp"
android:text="6\u2109"
android:textColor="@color/black"
    android:textSize="32sp"/>

</TableRow>
<TableRow>
<TextView
    android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:background="@drawable/border"
    android:gravity="center"
android:text="Conditions"
android:paddingTop="60dp"
android:paddingBottom="60dp"
android:paddingStart="52dp"
android:paddingEnd="52dp"
android:textColor="@color/black"
android:textSize="32sp"
android:textStyle="bold" />    <ImageView
android:layout_width="150dp"
android:layout_height="match_parent"
android:src="@drawable/sun2"
android:background="@drawable/border"/>
    <ImageView
android:layout_width="150dp"
android:layout_height="match_parent"
android:src="@drawable/cloud"
android:background="@drawable/border"/>
    <ImageView
android:layout_width="150dp"
android:layout_height="match_parent"
```

```

android:src="@drawable/snow"
android:background="@drawable/border"/>
    <ImageView
android:layout_width="150dp"
android:layout_height="match_parent"
android:src="@drawable/snow"
android:background="@drawable/border"/>
    <ImageView
android:layout_width="150dp"
android:layout_height="match_parent"
android:src="@drawable/cloud"
android:background="@drawable/border"/>
</TableRow>
</TableLayout>

```

ActivityMain.java






```

package com.example.arrayadapter;
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.table);
    }}

```

Output -

Weather Table

	Feb 7	Feb 8	Feb 9	Feb 10	Feb 11
Day High	28°F	26°F	23°F	17°F	19°F
Day Low	15°F	14°F	3°F	5°F	6°F
Conditions					

3.: main_activity.xml

```

<RelativeLayout 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:id="@+id/tv1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Login Form"
        android:textColor="#FF018786"
        android:gravity="center"        android:textSize="24sp"
        android:textStyle="bold"
        android:layout_marginTop="10dp"/>
    <TableLayout
        android:layout_width="match_parent"
        android:layout_height="150dp"
        android:layout_below="@+id/tv1"        android:id="@+id/tl1"
        android:paddingTop="30dp">
        <TableRow
            android:layout_height="wrap_content"
            android:layout_width="wrap_content">
            <TextView
                android:layout_height="wrap_content"
                android:layout_width="wrap_content"
                android:text="User Name"
                android:textColor="@color/black"
                android:textSize="18sp"
                android:layout_marginStart="15dp"/>
            <EditText
                android:layout_width="275dp"
                android:layout_height="wrap_content"
                android:hint="User Name"
                android:layout_marginStart="20dp"/>
            </TableRow>
        <TableRow
            android:layout_height="wrap_content"
            android:layout_width="wrap_content">
            <TextView
                android:layout_height="wrap_content"
                android:layout_width="wrap_content"
                android:text="Password"
                android:textColor="@color/black"
                android:textSize="18sp"
                android:layout_marginStart="15dp"/>
            <EditText
                android:layout_width="275dp"
                android:layout_height="wrap_content"
                android:hint="Password"
                android:layout_marginStart="20dp"/>
            </TableRow>
        </TableLayout>
    <Button
        android:layout_height="wrap_content"
        android:layout_width="wrap_content"
        android:id="@+id/bt1"
        android:layout_centerHorizontal="true"
```

```
android:text="Log In"      android:layout_below="@+id/tl1"
android:backgroundTint="#FF018786"
android:layout_marginTop="30dp"/>
</RelativeLayout>
```

ActivityMain.java

```
package com.example.tabularlayout; 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);
    }
}
```

Output –

Tabular Layout

Login Form

User Name

Password

LOG IN

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SUBJECT - MOBILE APPLICATION

Question 16 Create a program in android to demonstrate Event Handlers and Event Listeners. Solution – main_activity.xml

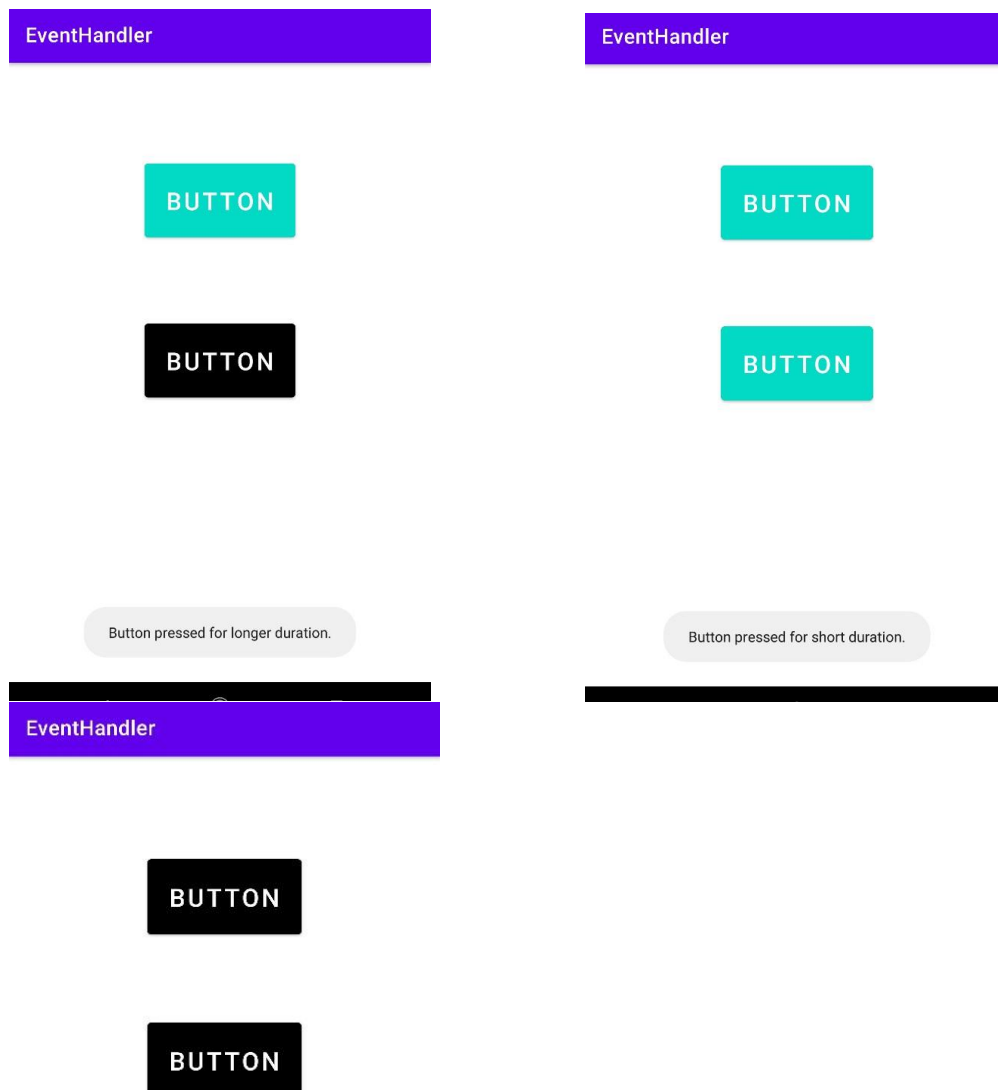
```
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
    <Button
        android:id="@+id/bt1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="92dp"
        android:backgroundTint="@color/black"
        android:padding="20dp"
        android:text="Button"        android:textSize="24sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <Button
        android:id="@+id/bt2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="72dp"
        android:backgroundTint="@color/black"
        android:padding="20dp"
        android:text="Button"        android:textSize="24sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/bt1" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

ActivityMain.java

```
package com.example.eventhandler;
import androidx.appcompat.app.AppCompatActivity;
import android.graphics.Color;
import android.os.Bundle; import
android.view.View; import
android.widget.Button; import
android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    Button bt1;
    Button bt2;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        bt1=findViewById(R.id.bt1);        bt2=findViewById(R.id.bt2);
        bt1.setOnLongClickListener(new View.OnLongClickListener() {
            @Override
```

```
-  
    public boolean onLongClick(View view) {  
        bt1.setBackgroundColor(Color.parseColor("#FF03DAC5"));  
        Toast.makeText(getApplicationContext(),"Button pressed for longer  
duration.",Toast.LENGTH_LONG).show();  
        return false;  
    }  
});  
bt2.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View view) {  
        bt2.setBackgroundColor(Color.parseColor("#FF03DAC5"));  
        Toast.makeText(getApplicationContext(),"Button pressed for short duration.",  
Toast.LENGTH_LONG).show();    }    }); }
```

Output –



Question 17 Create an android application to insert an audio and play it using Media Player Class.

Solution – Main_activity.xml

```
<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">
    <LinearLayout
android:layout_width="match_parent"
android:layout_height="600dp"
android:gravity="center"
android:orientation="horizontal"
        app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintTop_toTopOf="parent">
        <ImageView
            android:id="@+id/imageView"
android:layout_width="50dp"
android:layout_height="50dp"
android:background="#4A4A4A"            android:onClick="pause"
            app:srcCompat="@android:drawable/ic_media_pause"
            tools:layout_editor_absoluteX="47dp"
tools:layout_editor_absoluteY="498dp" />
        <ImageView
            android:id="@+id/imageView2"
android:layout_width="50dp"
android:layout_height="50dp"
android:layout_marginStart="20dp"
android:layout_marginEnd="20dp"
android:background="#3E3D3D"
            android:onClick="play"
            app:srcCompat="@android:drawable/ic_media_play"
            tools:layout_editor_absoluteX="162dp"
tools:layout_editor_absoluteY="498dp" />
        <ImageView
            android:id="@+id/imageView3"
android:layout_width="50dp"
android:layout_height="50dp"            android:onClick="stop"
            app:srcCompat="@android:drawable/btn_dialog"
            tools:layout_editor_absoluteX="287dp"
tools:layout_editor_absoluteY="498dp" />
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

ActivityMain.java

```
package com.example.eventhandler;
import androidx.appcompat.app.AppCompatActivity;
```

```
-  
import android.media.MediaPlayer;  
import android.os.Bundle; import  
android.view.View; import  
android.widget.Toast;  
public class MainActivity extends AppCompatActivity {  
    MediaPlayer player;  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
    }  
    public void play(View view)  
    {  
        if(player==null)  
        {  
            player=MediaPlayer.create(this,R.raw.teejiseat);  
        }  
        player.start();  
    }  
    public void pause(View view)  
    {  
        if(player!=null)  
        {  
            player.pause();  
        } }  
    public void stop(View view)  
    {  
        StopPlayer(); }  
    public void StopPlayer(){  
if(player!=null)  
    {  
        player.release();  
player=null;  
        Toast.makeText(this, "Media Player is released",Toast.LENGTH_LONG).show();  
    }  
    }  
}}
```

Output –



Question 18 Create an application in android to play a video and add some video controls using Media Controller class. Solution – main_activity.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">
    <VideoView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent" app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" android:id="@+id/v21"/>
</androidx.constraintlayout.widget.ConstraintLayout>
```

ActivityMain.java

```
package com.example.videoplayer;
import androidx.appcompat.app.AppCompatActivity;
import android.net.Uri; import android.os.Bundle; import android.widget.MediaController; import
android.widget.VideoView;
public class MainActivity extends AppCompatActivity {
    VideoView v1;    @Override
    protected void onCreate(Bundle savedInstanceState) {        super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);        v1=findViewById(R.id.v21);
        String path
        ="android.resource://" +getPackageName()+"/"+R.raw.videoplayback;
        Uri u = Uri.parse(path);        v1.setVideoURI(u);
        MediaController m = new MediaController(this);
        v1.setMediaController(m);
        m.setAnchorView(v1);
    }}
```

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-

Output –

Videoplayer



-

Question 19 Create a program in android to display all the built-in sensors of emulator/machine. Solution – main_activity.xml

```

<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">
<ScrollView    android:layout_width="match_parent"
android:layout_height="match_parent"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent">
    <TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/tv1"        android:text=""
        android:lineSpacingExtra="20dp"
android:textSize="24sp"
android:textColor="@color/black"
android:textAlignment="center"
        app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent" />
</ScrollView>
</androidx.constraintlayout.widget.ConstraintLayout>

```

ActivityMain.java

```

package com.example.sensors;
import androidx.appcompat.app.AppCompatActivity;
import android.hardware.Sensor; import
android.hardware.SensorManager;
import android.os.Bundle; import
android.widget.TextView;
import java.util.List;
public class MainActivity extends AppCompatActivity {
    TextView tv1;
    SensorManager sm;
    int i;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
tv1=findViewById(R.id.tv1);
        sm=(SensorManager) getSystemService(SENSOR_SERVICE);
List<Sensor> mList=sm.getSensorList(Sensor.TYPE_ALL);

```



```
for (i = 1; i<mList.size(); i++)  
{  
    tv1.append("\n"+mList.get(i).getName());  
}  
}  
}
```

Output –

Sensors

Goldfish 3-axis Gyroscope

Goldfish 3-axis Magnetic field sensor

Goldfish Orientation sensor

Goldfish Temperature sensor

Goldfish Proximity sensor

Goldfish Light sensor

Goldfish Pressure sensor

Goldfish Humidity sensor

Goldfish 3-axis Magnetic field sensor

(uncalibrated)

Game Rotation Vector Sensor

GeoMag Rotation Vector Sensor

-

Question 20 Create an application in android to fetch data from one application's database into another's using content provider.

Solution – main_activity.xml

```
<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">
    <ScrollView
android:layout_width="match_parent"
android:layout_height="match_parent"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintHorizontal_bias="1.0"
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="1.0">
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"            android:text="View
Contacts"            android:layout_gravity="center"
            android:onClick="Contacts"
            android:backgroundTint="@color/black"/>
    </ScrollView>
</androidx.constraintlayout.widget.ConstraintLayout>
```

ActivityMain.java

```
package com.example.sensors;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    public void Contacts(View view)
    {
        getContacts();
    }
    public void getContacts()
    {
        if (ContextCompat.checkSelfPermission(this, Manifest.permission.READ_CONTACTS)!=
        PackageManager.PERMISSION_GRANTED)
```

```

{
    ActivityCompat.requestPermissions(this,new String[]{Manifest.permission.READ_CONTACTS},0);
}
ContentResolver contentResolver=getContentResolver();
Uri uri= ContactsContract.CommonDataKinds.Phone.CONTENT_URI;
Cursor cursor=contentResolver.query(uri,null,null,null,null);
Log.i("Contacts","Total # of contacts::"+Integer.toString(cursor.getCount()));
if (cursor.getCount(>0)
{
    while (cursor.moveToNext()){
        String
contactName=cursor.getString(cursor.getColumnIndex(ContactsContract.CommonDataKinds.Phone.DISPLAY
_NAME));
        String
contactNum=cursor.getString(cursor.getColumnIndex(ContactsContract.CommonDataKinds.Phone.NUMBER)
);
        Log.i("Contacts","Contact Name::::"+contactName+"PH NUM::"+contactNum); }
    } } }

```

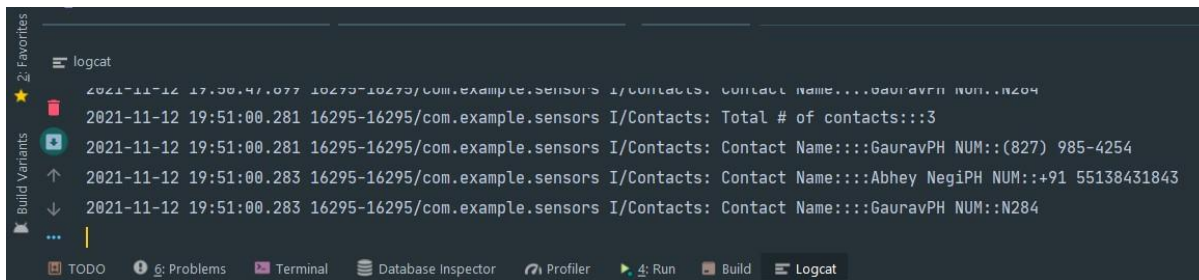
AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
package="com.example.sensors">
    <uses-permission android:name="android.permission.READ_CONTACTS"/>
    <uses-permission android:name="android.permission.WRITE_CONTACTS"/>
    <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/Theme.Sensors">
        <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>

```

Output –



Question 21 Create an android application to show Internal storage. Solution – main_activity.xml

```

<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"
android:backgroundTint="@color/white"
tools:context=".MainActivity">
    <TextView
        android:id="@+id/tv1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="24dp"
        android:text="Internal Storage"
        android:textColor="#673AB7"
        android:textSize="24sp"
        android:textStyle="bold"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <EditText
        android:id="@+id/et1"
        android:layout_width="350dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="96dp"
        android:textColor="@color/black"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.491"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/tv1" />
    <Button
        android:id="@+id/bt1"
  
```

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="76dp"
        android:layout_marginBottom="140dp"
        android:backgroundTint="#090909"
        android:text="Save"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/et1"
        app:layout_constraintVertical_bias="0.323" />
        <Button
            android:id="@+id/bt2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginEnd="76dp"
            android:layout_marginBottom="140dp"
            android:backgroundTint="#090909"      android:text="Load"
            android:textSize="18sp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintTop_toBottomOf="@+id/et1"
            app:layout_constraintVertical_bias="0.323" />
    </androidx.constraintlayout.widget.ConstraintLayout>

```

ActivityMain.java

```

public class MainActivity extends AppCompatActivity {
    EditText et1;
    TextView tv1;
    Button bt1, bt2;
    String data;
    private String file="My Data";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        et1=findViewById(R.id.et1);      tv1=findViewById(R.id.tv1);
        bt1=findViewById(R.id.bt1);
        bt2=findViewById(R.id.bt2);
        bt1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                data=et1.getText().toString();      try
            {
                FileOutputStream fout=openFileOutput(file, Context.MODE_PRIVATE);
                fout.write(data.getBytes());
                Toast.makeText(getApplicationContext(),"Save",Toast.LENGTH_SHORT).show();
            }
            catch (Exception e){
                e.printStackTrace();
            }
        }
    }
}

```

```
        -  
    }  
}  
});  
  
bt2.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View view) {  
try {  
        FileInputStream fin = openFileInput(file);  
int c;  
        String temp = "";  
        while ((c = fin.read()) != -1) {  
            temp = temp + Character.toString((char) c);  
        }  
        tv1.setText(temp);  
        Toast.makeText(getApplicationContext(), "Loaded", Toast.LENGTH_SHORT).show();  
    }  
    catch (Exception e){  
        e.printStackTrace();  
    }  
}});}}
```

Output –

Internal Storage

Internal Storage

SAVELOAD

Internal Storage

Internal Storage

Hello!

SAVELOAD

Save

Internal Storage

Hello!

Hello!

SAVELOAD

Loaded

Question 22 - Create an application to show shared preferences.**Solution – main_activity.xml**

```
<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">
    <EditText
        android:id="@+id/et1"
        android:layout_width="350dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="60dp"
        android:text=""        android:hint="Name"
        android:textColor="@color/black"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <EditText
        android:id="@+id/et2"
        android:layout_width="350dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="65dp"        android:text=""
        android:hint="Phone Number"
        android:textColor="@color/black"
        app:layout_constraintHorizontal_bias="0.491"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="@+id/et1" />
    <EditText
        android:id="@+id/et3"
        android:layout_width="350dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="65dp"
        android:hint="Email"
        android:text=""
        android:textColor="@color/black"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.508"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="@+id/et2"
        app:layout_constraintVertical_bias="0.008" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

ActivityMain.java

```
package com.example.sharedpreferences; import
androidx.appcompat.app.AppCompatActivity; public
```



```
class MainActivity extends AppCompatActivity {
    EditText et1,et2,et3;
    SharedPreferences sharedPreferences;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        et1=findViewById(R.id.et1);    et2=findViewById(R.id.et2);
        et3=findViewById(R.id.et3);
    }
    @Override
    protected void onResume(){
        super.onResume();
        SharedPreferences sharedPreferences=getSharedPreferences("MyPREFERENCES",MODE_PRIVATE);
        String n=sharedPreferences.getString("et1","");
        String pn=sharedPreferences.getString("et2","");
        String e=sharedPreferences.getString("et3","");
        et1.setText(n);    et2.setText(pn);
        et3.setText(e);
    }
    @Override    protected
    void onPause(){
        super.onPause();
        SharedPreferences sharedPreferences=getSharedPreferences("MyPREFERENCES",MODE_PRIVATE);
        SharedPreferences.Editor editor=sharedPreferences.edit();
        editor.putString("et1",et1.getText().toString());
        editor.putString("et2",et2.getText().toString());
        editor.putString("et3",et3.getText().toString());    editor.apply();
        Toast.makeText(MainActivity.this, "Data is Saved", Toast.LENGTH_SHORT).show();
    }
}
```

Output –

Shared Preferences

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Question 23 - Create a program in android to show CRUD operations using SQLite Databases and cursor.**Solution – main_activity.xml**

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"    android:layout_gravity="center"
android:gravity="center"    android:orientation="vertical"
tools:context=".MainActivity">
    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/ed1"    android:hint="Enter
Data"/>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_gravity="center"    android:gravity="center">
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Insert"
            android:onClick="insert"
            android:layout_margin="10dp"/>
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Read"
            android:onClick="read"
            android:layout_margin="10dp"/>
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Delete"
            android:onClick="delete"
            android:layout_margin="10dp"/>
    </LinearLayout>
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Click on read to load data."
        android:gravity="center"    android:id="@+id/display"/>
</RelativeLayout>
```

ActivityMain.java

```
import androidx.appcompat.app.AppCompatActivity;
import android.database.Cursor; import
android.database.sqlite.SQLiteDatabase; import
android.icu.text.UnicodeSetSpanner; import
```

```
android.os.Bundle; import android.view.View;
import android.widget.Button; import
android.widget.EditText; import
android.widget.TextView; import
android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    SQLiteDatabase db;
    Cursor c;
    TextView display;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
        db= openOrCreateDatabase("mydb",MODE_PRIVATE,null);
        db.execSQL("create table if not exists stud(name varchar2(200) not null)");
    }
    public void insert(View view){
        String name="";
        EditText ed = (EditText) findViewById(R.id.ed1);
name = ed.getText().toString();
        db.execSQL("insert into stud(name) values(\""+name+"\")");
    }
    public void read(View view){
String sql = "Select * from stud";
        display = findViewById(R.id.display);
try{
            c = db.rawQuery(sql,null);
if(c.getCount()==0){
display.setText("No data");
            }
        else{
            c.moveToFirst();
            String name = c.getString(0);
            display.setText(name);
        }
    }
    catch(Exception e){
        e.printStackTrace();
    }
}
    public void delete(View view){
        try {
            String sql = "delete from stud";
db.execSQL(sql);
        }
        catch(Exception e){
            e.printStackTrace();
        }
    }
}
```

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Output –

crud

Hello

INSERT

READ

DELETE

Hello

Question 24- Create a program to depict Bluetooth Adapter class.**Solution – main_activity.xml**

```
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity"
    android:transitionGroup="true">
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:layout_marginStart="2dp"
        android:layout_marginTop="2dp"
        android:layout_marginEnd="103dp"
        android:layout_marginRight="103dp"
        android:clickable="true"
        android:onClick="on"        android:text="Turn
On" />
    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignBottom="@+id/button"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="2dp"
        android:layout_marginEnd="160dp"
        android:layout_marginBottom="1dp"
        android:onClick="visible"
        android:text="Get visible" />
    <Button
        android:id="@+id/button3"
        android:layout_width="124dp"
        android:layout_height="38dp"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_marginStart="74dp"
        android:layout_marginLeft="74dp"
        android:layout_marginTop="4dp"
        android:layout_marginEnd="15dp"

        android:onClick="list"
        android:text="List devices" />
    <Button
```

```

        android:id="@+id/button4"
        android:layout_width="wrap_content"
        android:layout_height="37dp"
        android:layout_below="@+id/button"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"        android:onClick="off"
        android:text="turn off" />
    <ListView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/listView"
        android:layout_alignParentBottom="true"
        android:layout_alignLeft="@+id/button"
        android:layout_alignStart="@+id/button"
        android:layout_below="@+id/textView2" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Paired devices:"
        android:id="@+id/textView2"
        android:textColor="#ff34ff06"
        android:textSize="25dp"
        android:layout_below="@+id/button4"
        android:layout_alignLeft="@+id/listView"
        android:layout_alignStart="@+id/listView" />
</RelativeLayout>

```

ActivityMain.java

```

package com.example.bluetooth; import
androidx.appcompat.app.AppCompatActivity; import
android.bluetooth.BluetoothAdapter; import
android.bluetooth.BluetoothDevice; import
android.content.Intent; import android.os.Bundle;
import android.view.View; import
android.widget.AdapterView; import
android.widget.Button; import
android.widget.ListView; import
android.widget.Toast; import java.util.ArrayList;
import java.util.Set;
public class MainActivity extends AppCompatActivity {
    Button b1,b2,b3,b4;    private BluetoothAdapter BA;
        private Set<BluetoothDevice> pairedDevices;
        ListView lv;
    @Override
        protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);        b1 =
    (Button) findViewById(R.id.button);
    b2=(Button)findViewById(R.id.button2);
    b3=(Button)findViewById(R.id.button3);
    b4=(Button)findViewById(R.id.button4);        BA =

```

```
BluetoothAdapter.getDefaultAdapter();    lv =  
findViewById(R.id.listView);  
}  
public void on(View v){  
    if (!BA.isEnabled()) {  
        Intent turnOn = new Intent(BluetoothAdapter.ACTION_REQUEST_ENABLE);  
onActivityResult(0,0,turnOn);  
        Toast.makeText(getApplicationContext(), "Turned on",Toast.LENGTH_LONG).show();  
    } else {  
        Toast.makeText(getApplicationContext(), "Already on", Toast.LENGTH_LONG).show();  
    }  
}  
public void off(View v){  
BA.disable();  
    Toast.makeText(getApplicationContext(), "Turned off" ,Toast.LENGTH_LONG).show();  
}  
  
public void visible(View v){  
    Intent getVisible = new Intent(BluetoothAdapter.ACTION_REQUEST_DISCOVERABLE);  
onActivityResult(0,0,getVisible);  
}  
  
public void list(View v){  
    pairedDevices = BA.getBondedDevices();  
ArrayList list = new ArrayList();  
    for(BluetoothDevice bt : pairedDevices) list.add(bt.getName());  
    Toast.makeText(getApplicationContext(), "Showing Paired Devices",Toast.LENGTH_SHORT).show();  
  
    final ArrayAdapter adapter = new ArrayAdapter(this,android.R.layout.simple_list_item_1, list);  
lv.setAdapter(adapter);  
}  
}
```

Output –



Question 25 - Create a Google Maps application using android.

Solution – ActivityMain.java

```
package com.example.googlemap; import
androidx.fragment.app.FragmentActivity; import
android.os.Bundle;
import com.google.android.gms.maps.CameraUpdateFactory;
import com.google.android.gms.maps.GoogleMap; import
com.google.android.gms.maps.OnMapReadyCallback; import
com.google.android.gms.maps.SupportMapFragment; import
com.google.android.gms.maps.model.LatLng; import
com.google.android.gms.maps.model.MarkerOptions; import
com.example.googlemap.databinding.ActivityMapsBinding;
public class MapsActivity extends FragmentActivity implements OnMapReadyCallback {
    private GoogleMap mMap;
    private ActivityMapsBinding binding;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        binding = ActivityMapsBinding.inflate(getLayoutInflater());
        setContentView(binding.getRoot());
        // Obtain the SupportMapFragment and get notified when the map is ready to be used.
        SupportMapFragment mapFragment = (SupportMapFragment) getSupportFragmentManager()
            .findFragmentById(R.id.map);
        mapFragment.getMapAsync(this);
    }
    @Override
    public void onMapReady(GoogleMap googleMap) {
        mMap = googleMap;
```



```
mMap.setMapType(GoogleMap.MAP_TYPE_HYBRID);
LatLng India = new LatLng(30.183472, 78.174234);
mMap.addMarker(new MarkerOptions().position(India).title("Marker in Sydney"));
mMap.moveCamera(CameraUpdateFactory.newLatLng(India));
}
}
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
package="com.example.googlemap">
    <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
    <uses-permission android:name="android.permission.INTERNET"/>
    <uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION"/>
    <uses-permission android:name="android.permission.REQUEST_INSTALL_PACKAGES"/>
    <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/Theme.GoogleMap">
        <meta-data
            android:name="com.google.android.geo.API_KEY"
            android:value="@string/google_maps_key" />
        <activity
            android:name=".MapsActivity"
            android:label="@string/title_activity_maps">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

Output -

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