

Experiment 3.1

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Date of Performance:
Subject Code: 20CSP_356

1. Aim:

Implement building blocks for Android Application using different layouts (such as linear, and absolute).

2. Objective:

Understanding of the interactions between user interface and underlying application infrastructure.

3. System Requirements:

- Microsoft Windows 7/8/10 (32-bit or 64-bit)
- 4 GB RAM minimum, 8 GB RAM recommended (plus 1 GB for the Android Emulator)
- 2 GB of available disk space minimum, 4 GB recommended (500 MB for IDE plus 1.5 GB for Android SDK and emulator system image)
- 1280 x 800 minimum screen resolution
- Java JDK5 or later version
- Java Runtime Environment (JRE) 6 or higher.

4. Steps/Program:

```
MainActivity.java package
com.example.fragmentapp; import
android.content.Intent; import
android.view.View; import
android.widget.Button;

import androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle;

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.button6);    b1.setOnClickListener(
```

```

        new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                Intent i = new Intent(MainActivity.this, MainActivity2.class);
                startActivity(i);
            }
        }
    );
}
}

```

MainActivity2.java package

```

com.example.fragmentapp; import
android.content.Intent; import
android.view.View; import
android.widget.Button;

```

```

import androidx.appcompat.app.AppCompatActivity; import
android.os.Bundle;

```

```

public class MainActivity2 extends AppCompatActivity {

    Button b2 ;
    @Override

    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);    b2 =
        findViewById(R.id.button5);    b2.setOnClickListener(

            new View.OnClickListener() {

                @Override

                public void onClick(View v) {

                    Intent i = new Intent(MainActivity2.this, MainActivity.class);
                    startActivity(i);

                }

            }

        );

    }

}

```

activity_main.xml

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

<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"    tools:context=".MainActivity">

    <LinearLayout        android:id="@+id/linearLayout"
android:layout_width="295dp"
android:layout_height="240dp"
android:orientation="vertical"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.977">

        <TextView            android:id="@+id/textView4"
android:layout_width="wrap_content"
android:layout_height="wrap_content"        android:text="content 1"
android:textSize="25dp"        android:padding="15dp"
app:layout_constraintBottom_toTopOf="@+id/linearLayout"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.516" />

        <TextView            android:id="@+id/textView5"
android:layout_width="wrap_content"
android:layout_height="wrap_content"        android:text="content 2"
android:padding="15dp"        android:textSize="25dp"
app:layout_constraintBottom_toTopOf="@+id/linearLayout"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
```

```

app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.516" />

    <TextView        android:id="@+id/textView6"
android:layout_width="wrap_content"
android:layout_height="wrap_content"        android:text="content 3"
android:textSize="25dp"        android:padding="15dp"
app:layout_constraintBottom_toTopOf="@+id/linearLayout"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.516" />

    </LinearLayout>    <TextView        android:id="@+id/textView2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"        android:text="Hello Android
User"        app:layout_constraintBottom_toTopOf="@+id/linearLayout"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.498"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.147" />

    <LinearLayout
        android:layout_width="302dp"
        android:layout_height="268dp"        android:orientation="horizontal"
app:layout_constraintBottom_toTopOf="@+id/linearLayout"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView2">

        <TextView        android:id="@+id/textView9"
android:layout_width="wrap_content"
android:layout_height="wrap_content"        android:padding="15dp"
android:text="content 1"        android:textSize="15dp"
app:layout_constraintBottom_toTopOf="@+id/linearLayout"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"

```

```
app:layout_constraintVertical_bias="0.516"
tools:ignore="TextSizeCheck" />
```

```
    <TextView
        android:id="@+id/textView8"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:padding="15dp"
        android:text="content 2"
        android:textSize="15dp"
        app:layout_constraintBottom_toTopOf="@+id/linearLayout"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.516"
        tools:ignore="TextSizeCheck" />
```

```
    <TextView            android:id="@+id/textView7"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"            android:padding="15dp"
        android:text="content 3"            android:textSize="15dp"
        app:layout_constraintBottom_toTopOf="@+id/linearLayout"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.516"
        tools:ignore="TextSizeCheck" />
```

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

        android:text="Button"
        app:layout_constraintBottom_toTopOf="@+id/textView2"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
```

```
app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

activity_main2.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=".MainActivity2">

    <RelativeLayout        android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    xmlns:android="http://schemas.android.com/apk/res/android"
    tools:ignore="MissingConstraints">

        <Button            android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Top Left Button"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"/>

        <Button            android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Top Right Button"
        android:layout_alignParentTop="true"
        android:layout_alignParentRight="true"/>

        <Button            android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Bottom Left Button"
        android:layout_alignParentLeft="true"
        android:layout_alignParentBottom="true"/>
```

```

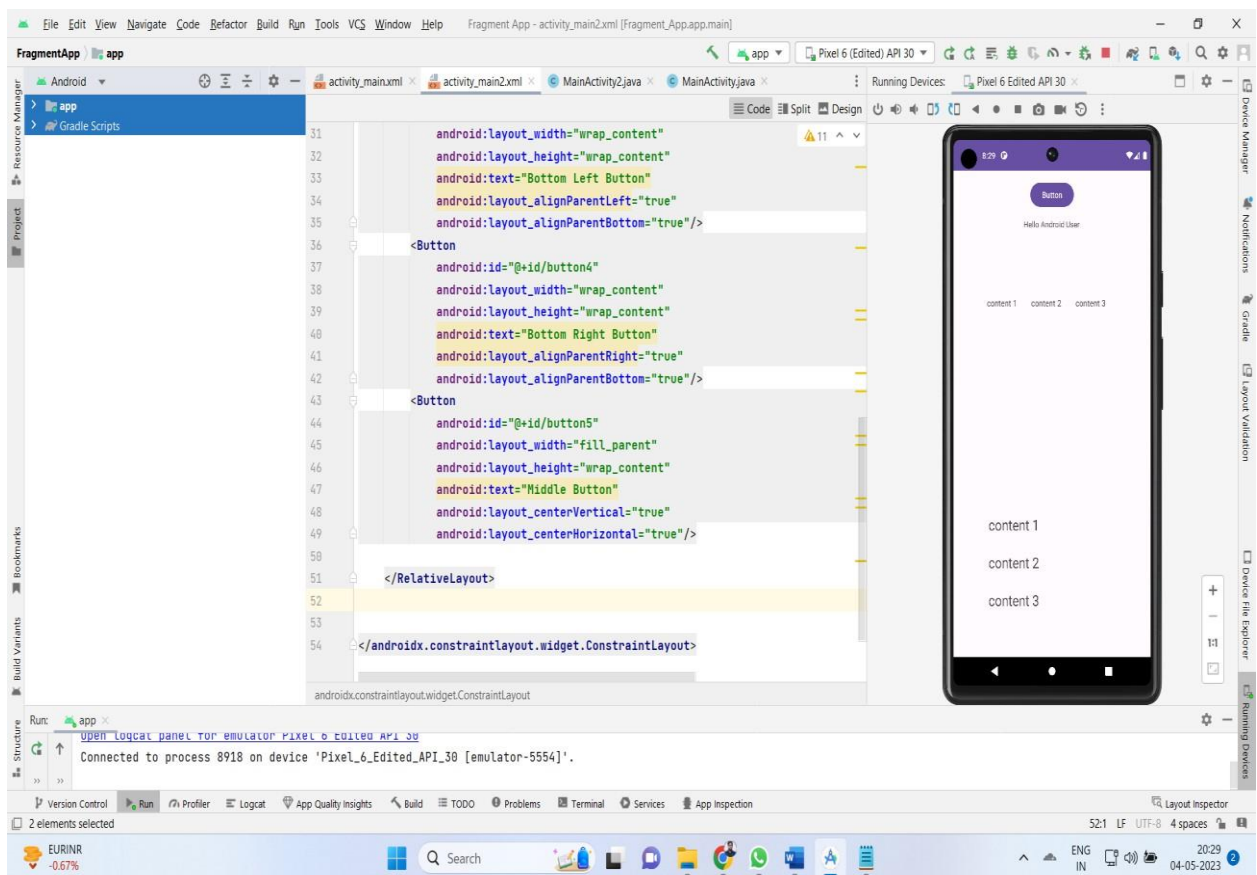
        <Button            android:id="@+id/button4"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Bottom Right Button"
            android:layout_alignParentRight="true"
            android:layout_alignParentBottom="true"/> <Button
            android:id="@+id/button5"
            android:layout_width="fill_parent"
            android:layout_height="wrap_content"
            android:text="Middle Button"
            android:layout_centerVertical="true"
            android:layout_centerHorizontal="true"/>

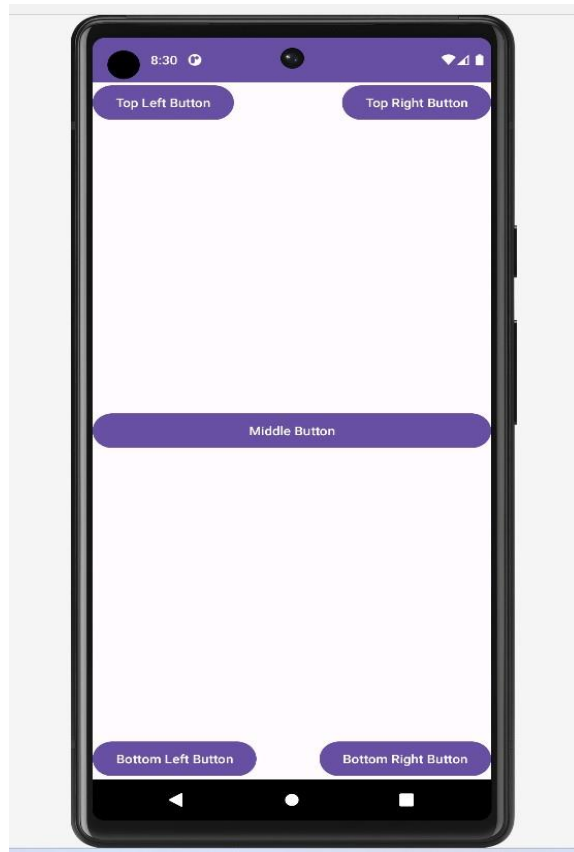
    </RelativeLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

```

Output:



**Learning outcomes (What I have learnt):**

- To design an android application which uses widget in android studio.
- Learnt about running application on android studio.
- Create an Android application using different layout.

Conclusion:-

I have successfully completed this experiment.