

Experiment No. - 8

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Branch: BE-CSE(LEET)

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Subject Name: Mobile Application Development Lab

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1. Aim:

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

2. Objective:

Understanding and analyse the specific requirement, possibilities and challenges when developing for a mobile application context.

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:

- You will use Android Studio IDE to create an Android application and name it as tutorials point under a package in.innovateria.ws8application
- No need to Modify src/MainActivity.java.
- Modify layout XML file res/layout/activity_main.xml add any GUI component if required. I'm adding a simple GUI to implement all type of Layout such as linear, relative, absolute.
- No need to define default string constants at res/values/strings.xml. Android studio takes care of default constants.
- No need to Modify AndroidManifest.xml and Add the Permissions.
- Run the application to launch Android emulator and verify the result of the changes done in the application.

5. Code:

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"
    android:background="@color/white"
    tools:context=".MainActivity">
```

```
<AbsoluteLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toTopOf="@+id/linear"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    tools:ignore="MissingConstraints">
    <!--Setting up TextViews-->
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/heading"
        android:textSize="24sp"
        android:textStyle="bold"
        android:textColor="@color/black"/>
</AbsoluteLayout>

<LinearLayout
    android:id="@+id/linear"
    android:layout_width="match_parent"
    android:layout_height="250dp"
    android:gravity="center"
    android:orientation="horizontal"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintBottom_toTopOf="@+id/relative"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent">

    <ViewFlipper
        android:layout_width="match_parent"
        android:layout_height="200dp"
        android:flipInterval="2000"
        android:autoStart="true"
        android:inAnimation="@android:anim/slide_in_left"
        android:outAnimation="@android:anim/slide_out_right">
        <ImageView
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:src="@drawable/baseline_video_label_24"/>
        <ImageView
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:src="@drawable/baseline_event_available_24"/>
    </ViewFlipper>

</LinearLayout>
```

```
<RelativeLayout
    android:id="@+id/relative"
    android:layout_width="match_parent"
    android:layout_height="300dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent">

    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:text="Top Left Button" />
    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:text="Top Right Button" />
    <Button
        android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentBottom="true"
        android:text="Bottom Left Button" />
    <Button
        android:id="@+id/button4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:text="Bottom Right Button" />
    <Button
        android:id="@+id/button5"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_centerVertical="true"
        android:text="Middle Button" />
</RelativeLayout>

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

MainActivity.java

```
package in.innovateria.ws8application;
```

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

```
import android.os.Bundle;
```

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

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

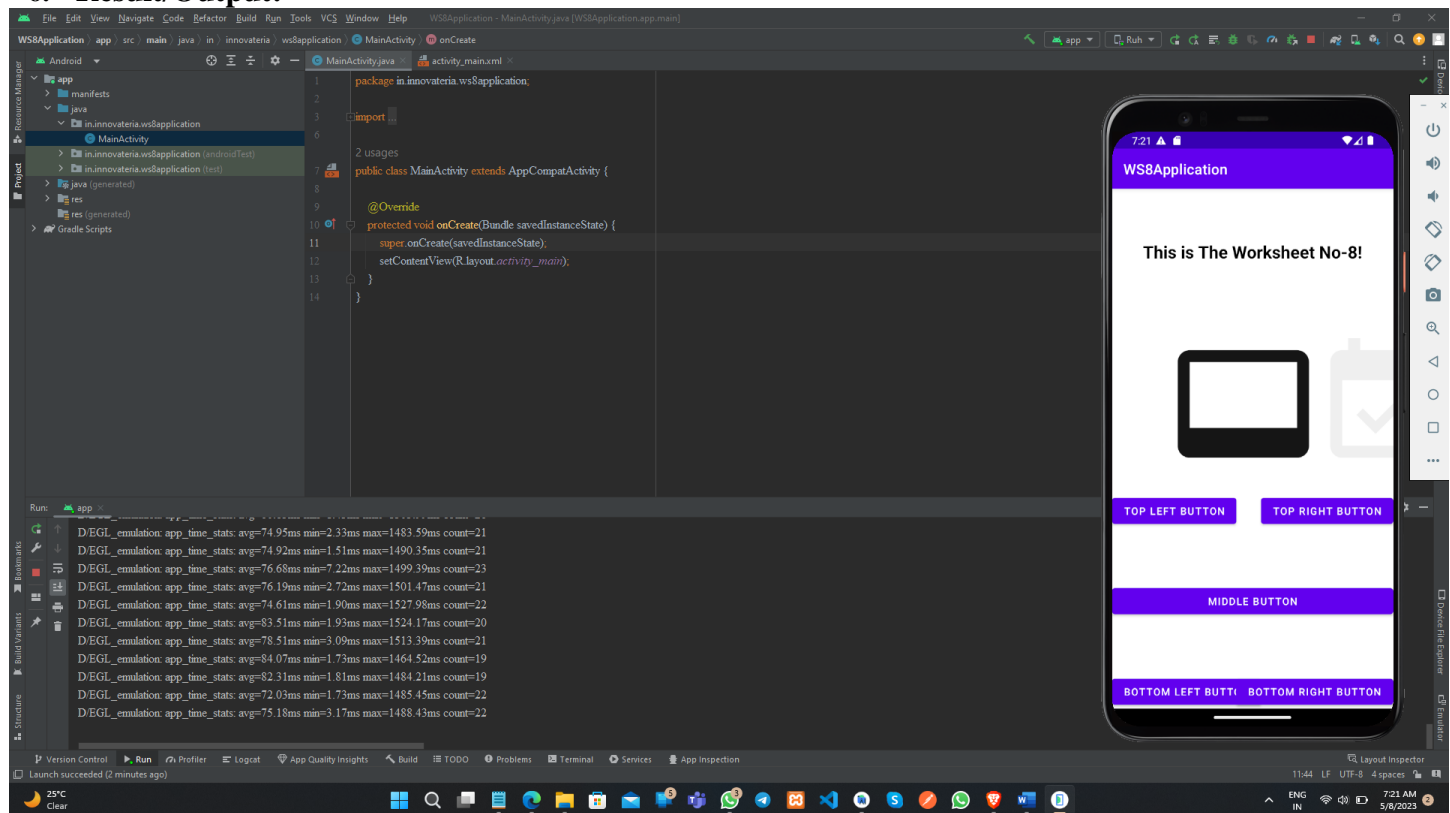
```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
```

```
    }
```

```
}
```

6. Result/Output:



Learning outcomes (What I have learnt):

- To design an android application which uses fragments in android studio.
- Learnt about running application on android studio.
- Creating Application by Implementing Fragment App.