

# Experiment -3.2

Student Name: Abhinav Verma UID: 20BCS9258

Branch: CSE Section/Group: 20BCS\_KRG\_DM-1A Semester: 06 Date of Performance: 05/05/2023

**Subject Name:** Mobile Application Development Lab **Subject Code:** 20CSP-356

## 1. Aim/Overview of the practical:

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

## 2. System Requirements:

The required tools to develop Android applications are open source and can be downloaded from the Web. Following is the list of software's you will need before you start your Android application programming.

- ➤ Android Studio .exe file
- > Java JDK5 or later version
- ➤ Java Runtime Environment (JRE) 6 Android Studio

#### 3. Steps of Experiment:

In this experiment, we are implementing building blocks for Android Application using different layouts (such as linear, relative and absolute). And by using toast, we display whether our device is connected to power or not.

**Step 01:** Now, start Android Studio app and start new project as "Experiment08" and select activity as "Empty Activity" as shown below and enter activity details such as activity name, package name, save location, language as Java, minimum SDK and then select Finish.

**Step 02:** New window will open with MyActivity.java file, our new project is started as shown below:

### **Code:**

#### MainActivity.java:

```
package com.example.experiment08;
import androidx.appcompat.app.AppCompatActivity;
import android.content.BroadcastReceiver;
```

```
Discover. Learn. Empower.
```

```
import android.content.Context;
import android.content.Intent;
import android.content.IntentFilter;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
   Button sendBtn, gotoNext;
   EditText name;
   MyBroadcastReceiver receiver = new MyBroadcastReceiver();
    IntentFilter inf = new IntentFilter();
   protected void onPause() {
        super.onPause();
        unregisterReceiver (receiver);
    protected void onResume() {
        super.onResume();
        registerReceiver(receiver, inf);
    }
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main);
        sendBtn=findViewById(R.id.submitBtn);
        gotoNext=findViewById(R.id.gotoNext);
        name=findViewById(R.id.etName);
        inf.addAction(Intent.ACTION POWER CONNECTED);
        inf.addAction(Intent.ACTION POWER DISCONNECTED);
        sendBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String n= name.getText().toString();
                Intent i=new
Intent(getApplicationContext(), MainActivity2.class);
                i.putExtra("Name",n);
                startActivity(i);
            }
        });
        gotoNext.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i=new
Intent(getApplicationContext(), MainActivity3.class);
                startActivity(i);
        });
```

Discover. Learn. Empower.

```
activity main.xml:
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout</pre>
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"
    android:paddingBottom="200dp">
    <RelativeLayout
        android:id="@+id/relativeLayout"
        android:layout width="match parent"
        android:layout height="wrap content"
        tools:ignore="MissingConstraints">
        <TextView
            android:layout width="match parent"
            android:layout height="wrap content"
            android:layout marginBottom="20dp"
            android:gravity="center"
            android:text="Relative Layout"
            android:textSize="18dp" />
        <EditText
            android:id="@+id/etName"
            android:layout width="match parent"
            android:layout height="wrap content"
            android:layout marginTop="20dp"
            android:hint="Enter Name"
            android:textSize="18dp" />
        <Button
            android:id="@+id/submitBtn"
            android:layout width="wrap content"
            android:layout height="wrap content"
            android:layout below="@id/etName"
            android:layout centerInParent="true"
            android:text="Send to Activity 2" />
    </RelativeLayout>
    <LinearLayout
        android:id="@+id/linearLayout"
        android:layout width="match parent"
        android:layout height="wrap content"
        android:layout marginTop="20dp"
        app:layout constraintTop toBottomOf="@+id/relativeLayout"
        android:orientation="vertical">
        <TextView
            android:layout width="match parent"
            android:layout height="wrap content"
```

android:gravity="center"

```
android:text="Linear Layout"
            android:textSize="18dp"/>
            android:id="@+id/gotoNext"
            android:layout width="wrap content"
            android:layout height="wrap content"
            android:text="Go To Activity 3"
            android:layout gravity="center"/>
    </LinearLayout>
    <FrameLayout</pre>
        android:id="@+id/frameLayout"
        android:layout width="match parent"
        android:layout height="wrap content"
        app:layout constraintBottom toBottomOf="parent">
            android:layout width="match parent"
            android:layout height="wrap content"
            android:gravity="center"
            android:text="Frame Layout"
            android:textSize="18dp" />
        <TextView
            android:layout width="match parent"
            android:layout height="wrap content"
            android:gravity="center"
            android:paddingTop="20dp"
            android:text="Abhinav Verma 20BCS9258"
            android:textColor="@color/black"
            android:textSize="18dp" />
    </FrameLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

#### MyBroadcastReceiver.java:

```
package com.example.experiment08;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.widget.Toast;
public class MyBroadcastReceiver extends BroadcastReceiver {
   @Override
   public void onReceive(Context context, Intent intent) {
        // constants to receive message
        if (intent.getAction().equals(Intent.ACTION POWER CONNECTED)) {
            Toast.makeText(context, "Great! The Power is Connected!:)
", Toast. LENGTH LONG). show();
        } else if
(intent.getAction().equals(Intent.ACTION POWER DISCONNECTED)) {
            Toast.makeText(context, "Oops! The Power got Dis-connected!
:( ", Toast. LENGTH LONG).show();
```

}

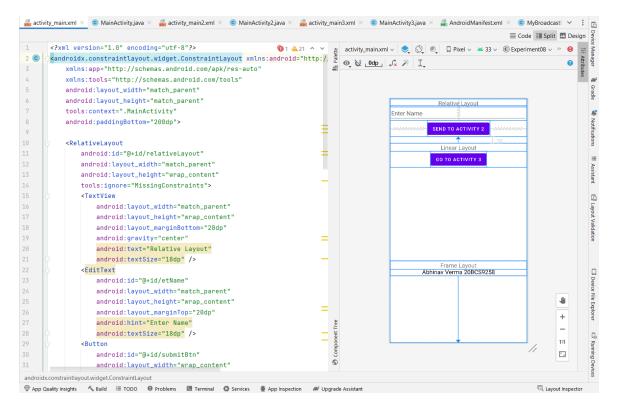
#### AndroidManifest.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
    xmlns:tools="http://schemas.android.com/tools">
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data extraction rules"
        android:fullBackupContent="@xml/backup rules"
        android:icon="@mipmap/ic launcher"
        android:label="@string/app name"
        android:supportsRtl="true"
        android:theme="@style/Theme.Experiment08"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity3"
            android:exported="false" />
            android:name=".MainActivity2"
            android:exported="false" />
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category
android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <!--permission for power connection status-->
        <receiver
            android:name=".MyBroadcastReceiver"
            android:exported="true">
            <intent-filter>
                <action
android:name="android.intent.action.ACTION POWER CONNECTED" />
android:name="android.intent.action.ACTION POWER DISCONNECTED" />
            </intent-filter>
        </receiver>
    </application>
</manifest>
```

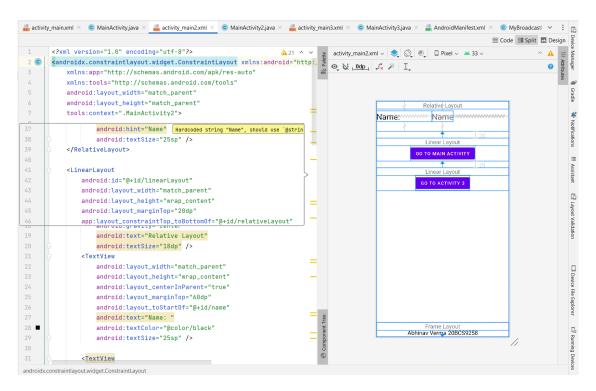
Discover. Learn. Empower.

```
Eile Edit View Navigate Code Refactor Build Run Tools VCS Window Help Experiment08 - MainActivity.java [Experiment08.app.main]
 Experiment08 \( \rightarrow \text{app} \) src \( \rightarrow \text{main} \) java \( \rightarrow \text{com} \) example \( \rightarrow \text{experiment08} \) \( \leftilde{\circ} \) MainActivity \( \rightarrow \text{m} \) onCreate
     ≚ Android ▼ ② 호 ★ Φ − nxml ×
                                                      🏿 MainActivity.java 🗴 🚣 activity_main2.xml × 💲 MainActivity2.java × 🚜 activity_main3.xml × 🚳 MainActivity3.java × 🚜 AndroidManifest.xml × 🌑 MyBroadcastReceiver.java × 😕 🗓
MainActivity 15 public class MainActivity extends AppCompatActivity { 4 usages
                                                           Button sendBtn,gotoNext; 2 usages
                                                           EditText name; 2 usages
                                                        MyBroadcastReceiver receiver = new MyBroadcastReceiver(); 2 usages
IntentFilter inf = new IntentFilter(); 3 usages
protected void onPause() {
       > Com.example.experiment08 (androidTest)
> Com.example.experiment08 (test)
                                                              unregisterReceiver(receiver);
    > AP Gradle Scripts
                                                          protected void onResume() {
                                                               super.onResume();
                                                           protected void onCreate(Bundle savedInstanceState) {
                                                               super.onCreate(savedInstanceState):
                                                               sendBtn=findViewById(R.id.submitBtn);
                                                               gotoNext=findViewById(R.id.gotoNext);
                                                               name=findViewBvId(R.id.etName):
                                                                inf.addAction(Intent.ACTION_POWER_CONNECTED);
                                                               inf.addAction(Intent.ACTION_POWER_DISCONNECTED);
                                                                sendBtn.setOnClickListener(new View.OnClickListener() {
                                                                    public void onClick(View view) {
                                                Text Source Code Editor With Preview
                                              (2) boboline Starter 28:14 LF UTF-8 4 spaces 🕍 🛤
□ Launch succeeded (7 minutes ago)
```

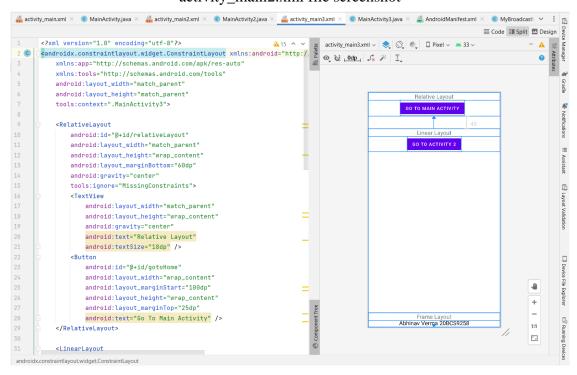
## MainActivity.java file screenshot



activity\_main.xml file screenshot



## activity\_main2.xml file screenshot

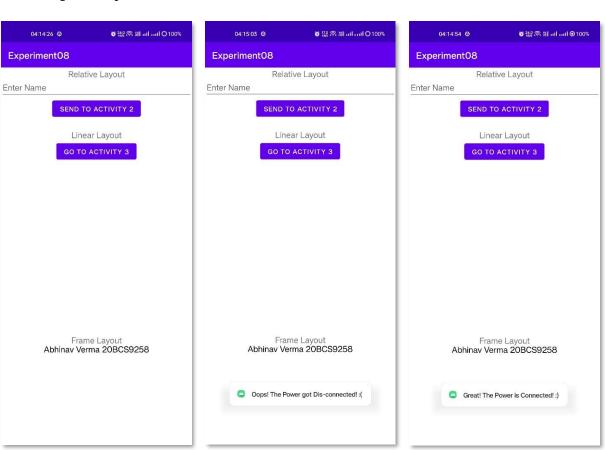


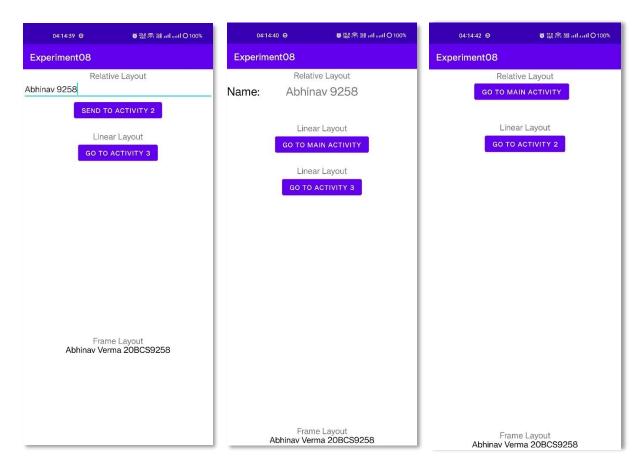
activity\_main3.xml file screenshot

🚄 activity\_main.xml × 🌘 MainActivity.java × 🚄 activity\_main2.xml × 🍭 MainActivity2.java × 🚄 activity\_main3.xml × 🕲 MainActivity3.java × <?xml version="1.0" encoding="utf-8"?> <manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre> xmlns:tools="http://schemas.android.com/tools"> android:allowBackup="true" android:dataExtractionRules="@xml/data\_extraction\_rules" android:fullBackupContent="@xml/backup\_rules"
android:icon="@mipmap/ic\_launcher" 9 android:label="Experiment08" android:supportsRtl="true" android:theme="@style/Theme.Experiment08"
tools:targetApi="31"> <activity...> <activity...: <receiver android:name=".MyBroadcastReceiver"
android:exported="true"> <intent-filter> <action android:name="android.intent.action.ACTION\_POWER\_CONNECTEO" />
<action android:name="android.intent.action.ACTION\_POWER\_DISCONNECTED" /> </intent-filter> </application> </manifest>

AndroidManifest.xml

## Step 3: Output:





From above screen shots, we can see, we have implemented various different types of layouts and from first three snaps we can clearly see toast, displaying status of power supply, whether our device is connected to power or not.

## **Learning Outcomes:**

- 1. Learned how to add toast, passing values via intent, textView, editText, layouts etc. in our application.
- 2. Learned about implementation of multiple layouts, android manifest, etc.
- 3. Learned to add buttons and textview, edittext, layouts.
- 4. Learned more about Android Studio and its components.