DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CHANDIGARH UNIVERSITY
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Experiment 1.3

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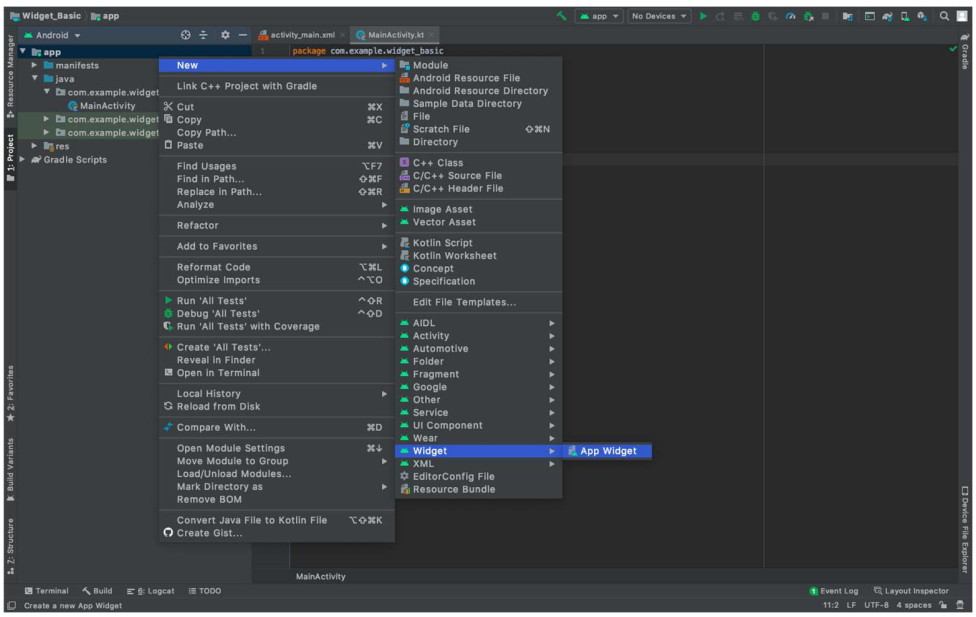
Branch: CSE **Section/Group: 714/A**
Semester: 6th **Date of Performance:25/2/23**
Subject Name: MAD LAB **Subject Code: 20CSP356**

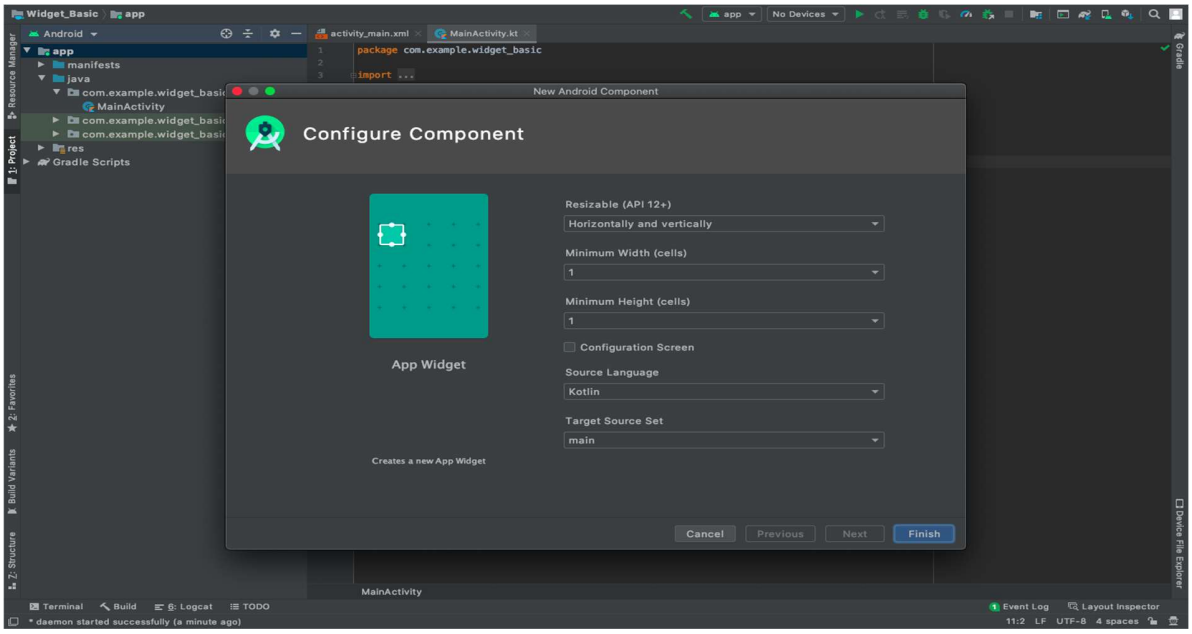
1. **Aim:** Create Application by Using Widgets
2. **Objective:** Creating an android application with widget named "Open Web".

3. **Script and Output:**

Step 1: Create a New Project
Step 2: Add the App Widget to the Project
Right-Click on the **app**, move the cursor to **new**, find the "**Widget**" option at the end, select it.



Specify the required properties for the widget such as **min. width** and **height**, config file and preferred language, etc, and proceed. Files are automatically generated.



Step 3 : Create Code according to app requirements.
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">

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

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

first_widget.xml

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    style="@style/Widget.Exp3_WidgetApp.AppWidget.Container"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:theme="@style/Theme.Exp3_WidgetApp.AppWidgetContainer">

    <Button
        android:id="@+id/openWebButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Open Web"
        android:textColor="@color/white"
        android:background="@color/purple_500"

        />
</RelativeLayout>
```

first_widget.kt

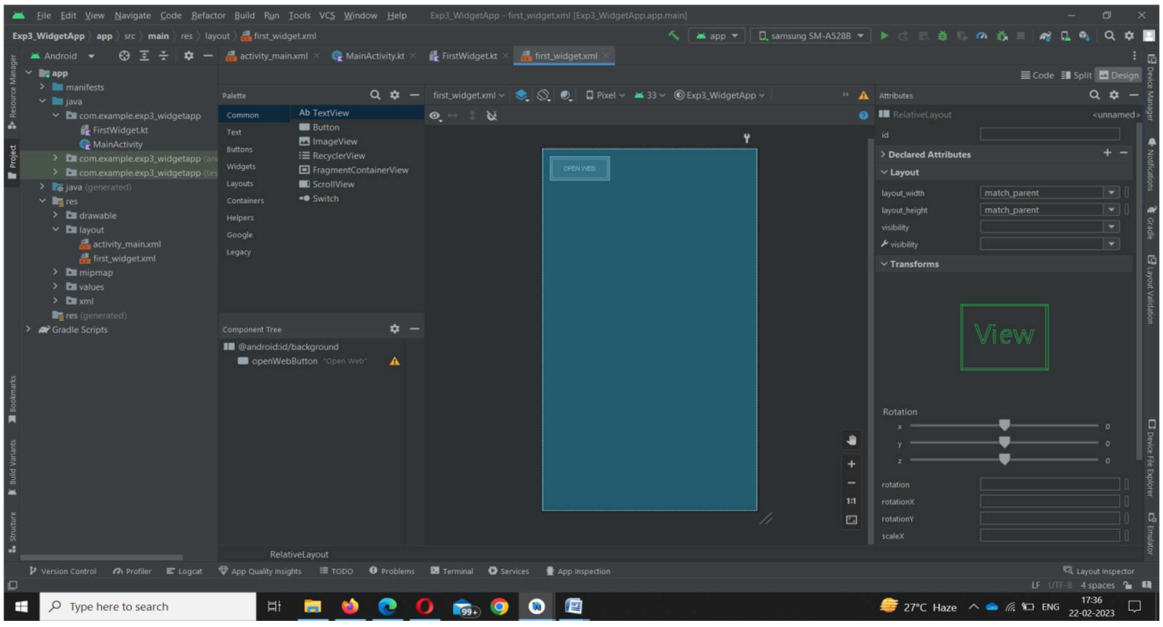
```
package com.example.exp3_widgetapp

import android.app.PendingIntent
import android.appwidget.AppWidgetManager
import android.appwidget.AppWidgetProvider
import android.content.Context
import android.content.Intent
import android.net.Uri
import android.widget.RemoteViews

/**
 * Implementation of App Widget functionality.
 */
class FirstWidget : AppWidgetProvider() {
    override fun onUpdate(
        context: Context,
        appWidgetManager: AppWidgetManager,
        appWidgetIds: IntArray
    ) {
        // There may be multiple widgets active, so update all of them
        for (appWidgetId in appWidgetIds) {
            updateAppWidget(context, appWidgetManager, appWidgetId)
        }
    }
}

internal fun updateAppWidget(
    context: Context,
    appWidgetManager: AppWidgetManager,
```

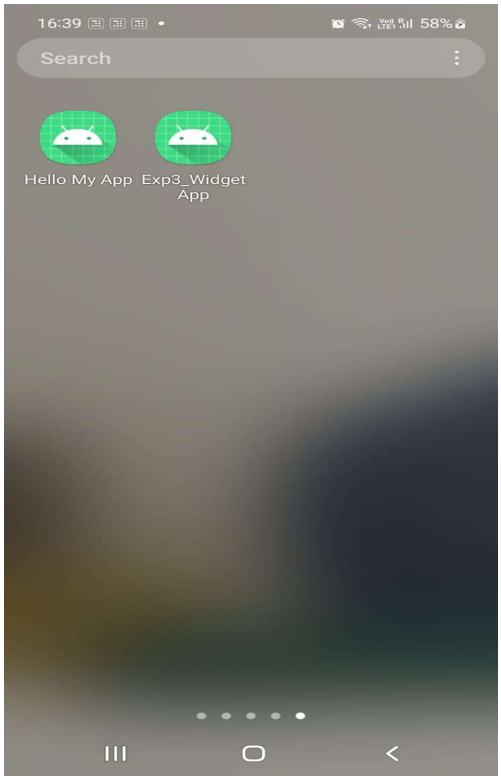
```
    appWidgetId: Int
)
{
    //1. Create remote view
    val remoteViews = RemoteViews(context.packageName, R.layout.first_widget)
    //2. define intent ---> action which will be performed
    val intent = Intent(Intent.ACTION_VIEW)
    intent.addFlags(Intent.FLAG_ACTIVITY_NEW_TASK)
    intent.data = Uri.parse("https://insideandroid.in")
    val pendingIntent = PendingIntent.getActivity(context,0,intent,0)
    //3.set pending intent on view
    remoteViews.setOnClickPendingIntent(R.id.openWebButton, pendingIntent)
    //4. update the widget
    appWidgetManager.updateAppWidget(appWidgetId, remoteViews)

}
```

MainActivity.kt

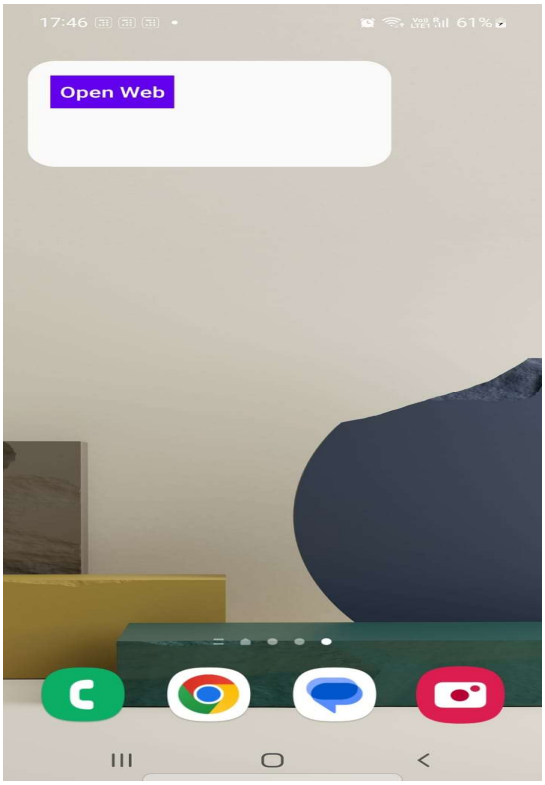
```
package com.example.exp3_widgetapp
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
    }}
```

Step 4: Select your device and run the code.




16:39
58%
Search
Hello My App
Exp3_Widget App


17:38
60%
Exp3_WidgetApp
Hello World!


17:46
61%
Open Web