

## Experiment 1.3

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**Subject Name:** MAD LAB

**Subject Code:** 21CSH-355

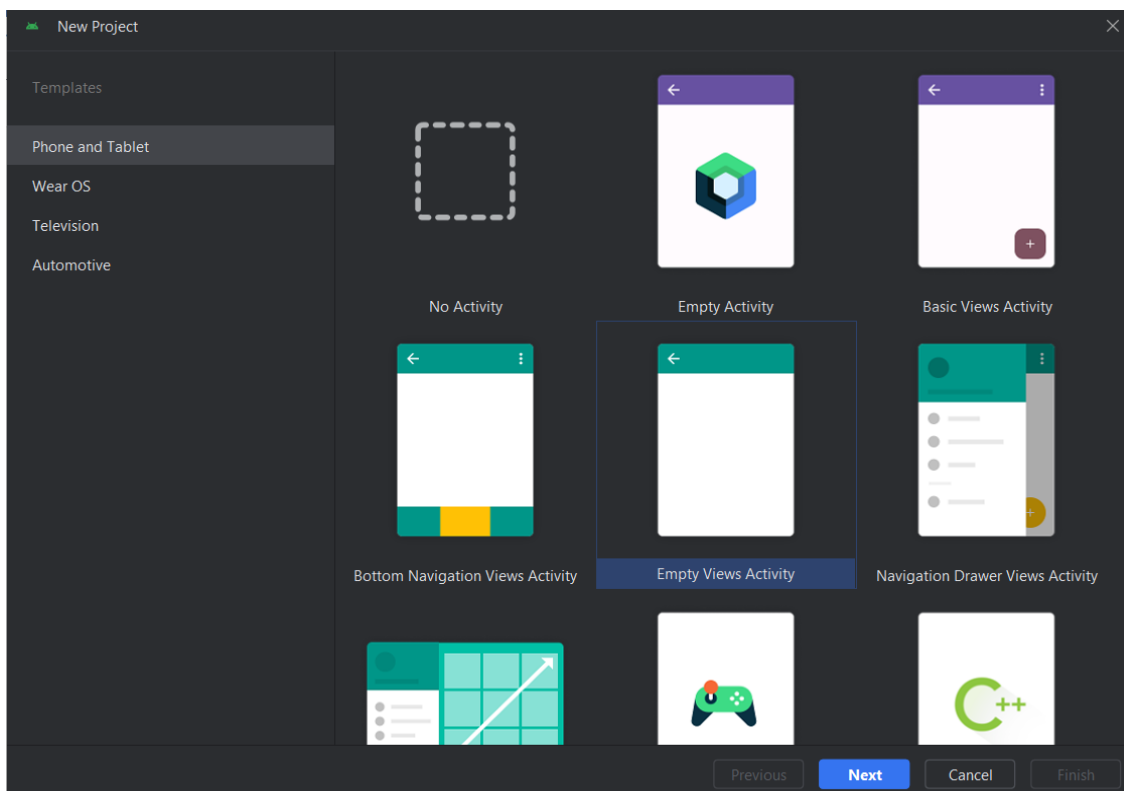
**Aim:** Create an Android-based application using widgets. It can be embedded in other applications (such as the home screen) and receive periodic updates.

**Objective:** The objective is to develop an Android application featuring customizable widgets that can be embedded in diverse applications, including the home screen. The application should seamlessly receive periodic updates, ensuring real-time information and enhanced user interaction.

**Apparatus/Requirements:** Android Studio

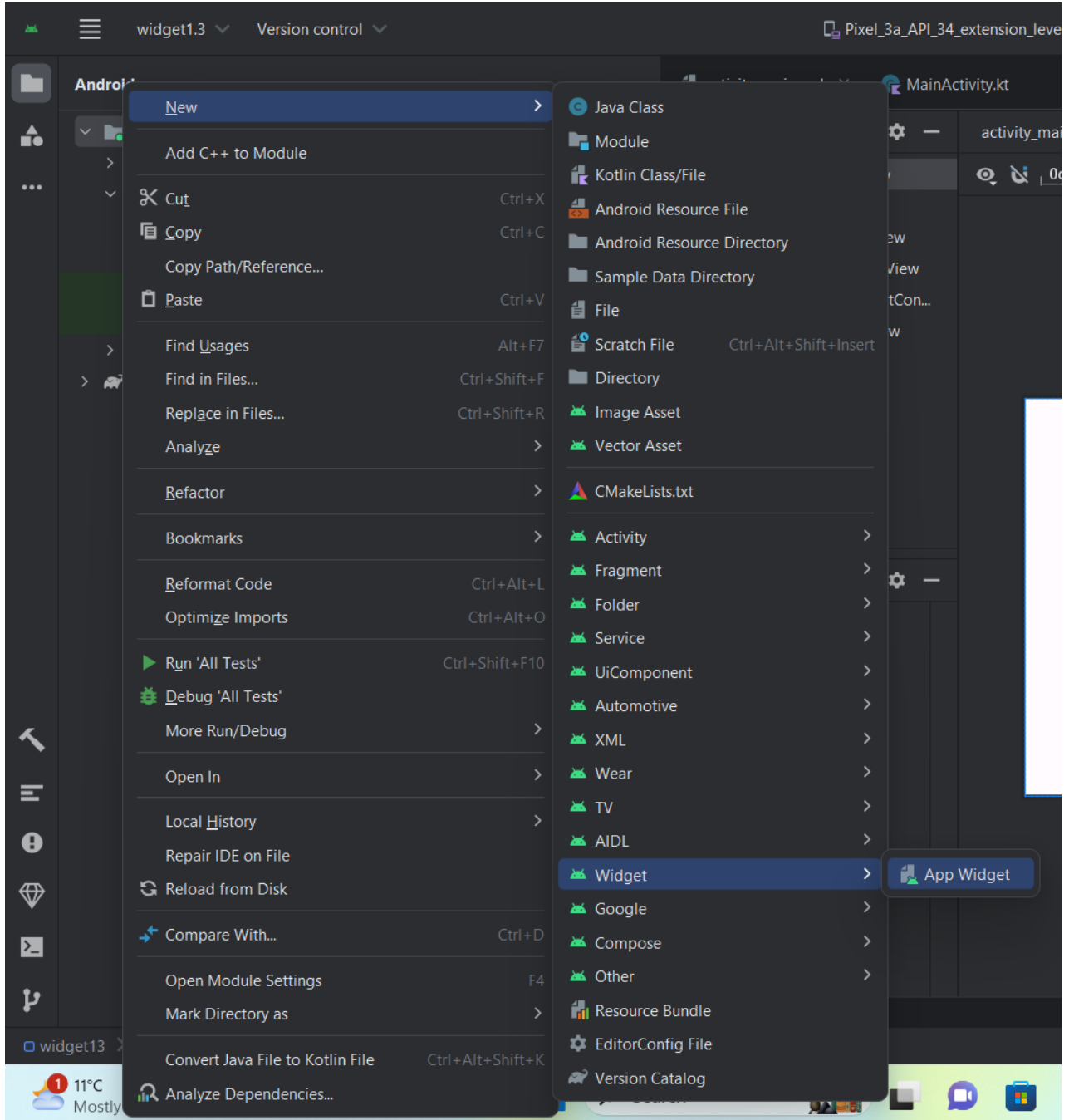
### **Procedure:**

1. Create a new project and select Empty views activity



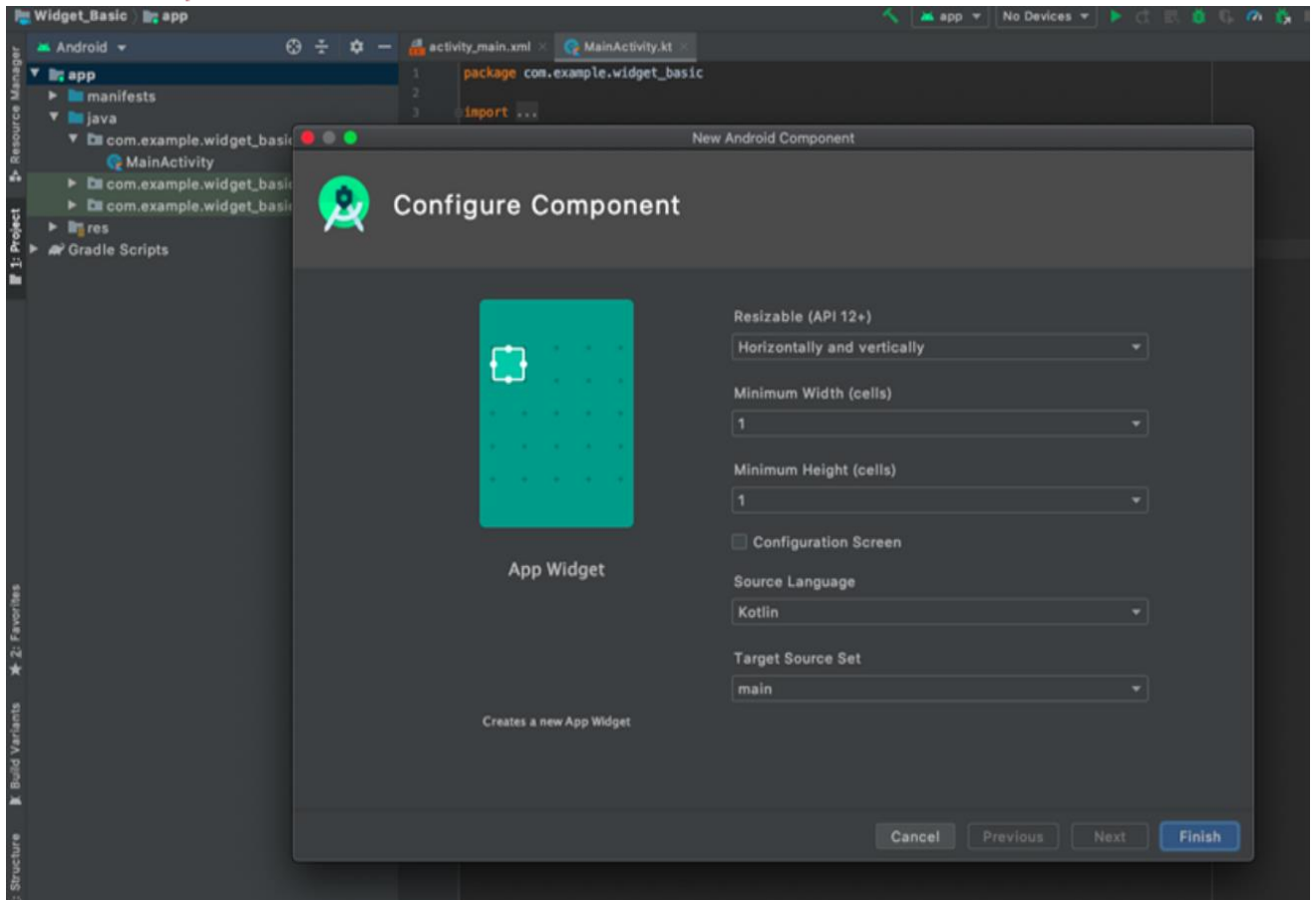
## 2. Add the App Widget to the Project

Right-Click on the app, move the cursor to new, find the “Widget” option at the end, select it.



## 3. Install and Run the Code

- Install and Run the code on Android Virtual Device (AVD) or a personal device.
- Open the widget section of the phone, lookup for a widget with the Application name, select it, bring it to the home screen.



#### 4. new\_app\_widget.xml

<RelativeLayout

xmlns:android="<http://schemas.android.com/apk/res/android>"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:background="#09C"

android:padding="@dimen/widget\_margin">

<TextView

android:id="@+id/appwidget\_text"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_centerHorizontal="true"

```
android:layout_centerVertical="true"
```

```
android:layout_margin="8dp"
```

```
android:background="#09C"
```

```
android:contentDescription="@string/appwidget_text"
```

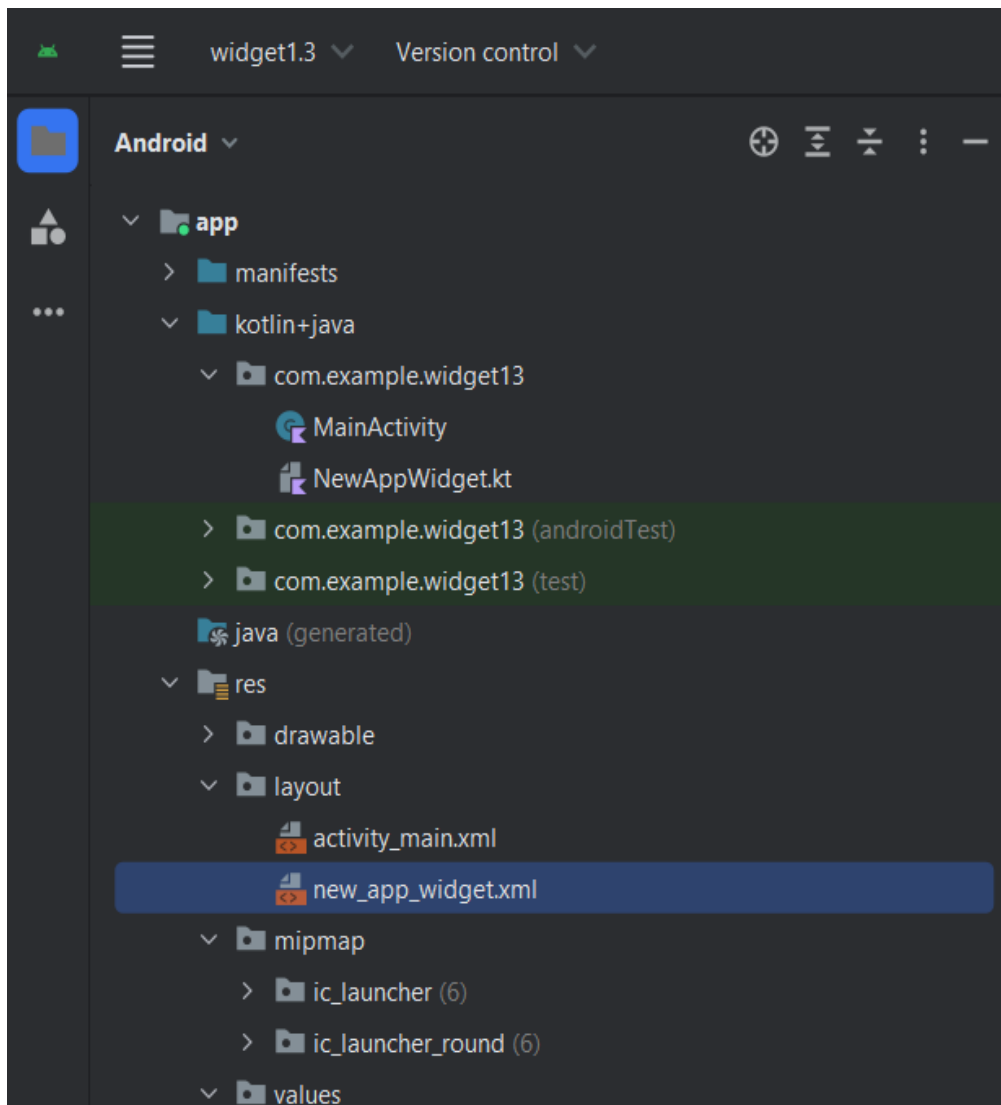
```
android:text="@string/appwidget_text"
```

```
android:textColor="#ffffff"
```

```
android:textSize="24sp"
```

```
android:textStyle="bold|italic" />
```

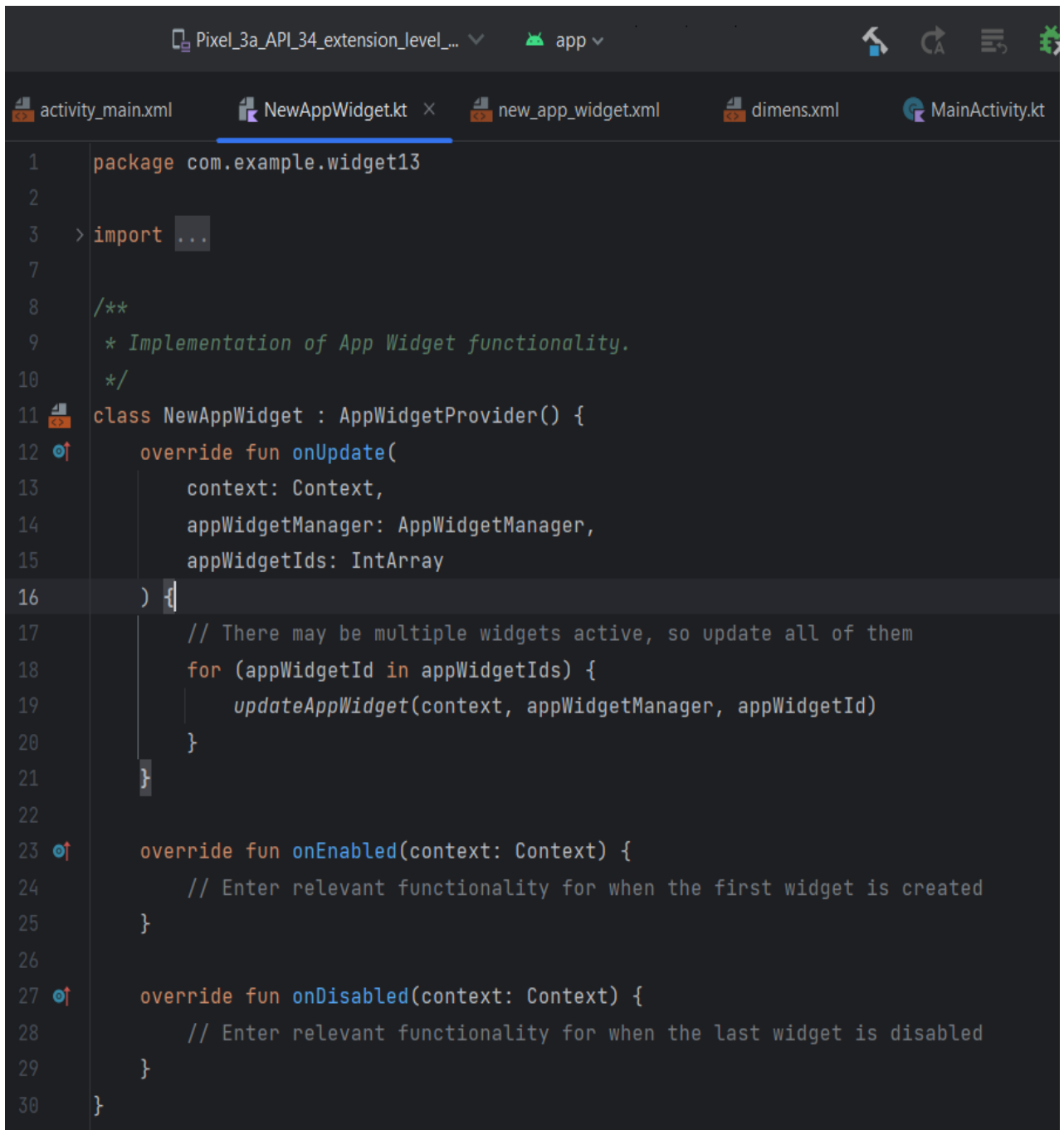
```
</RelativeLayout>
```



## 5. Android main activity file

The main activity file in android application is NewAppWidget.kt and it will exist in java folder. The NewAppWidget.kt file will contain the java code to handle all the activities related to our app.

Following is the default code of NewAppWidget.kt file which is generated by our widget mobile application.



```
1 package com.example.widget13
2
3 > import ...
4
5
6
7
8 /**
9  * Implementation of App Widget functionality.
10 */
11 class NewAppWidget : AppWidgetProvider() {
12     override fun onUpdate(
13         context: Context,
14         appWidgetManager: AppWidgetManager,
15         appWidgetIds: IntArray
16     ) {
17         // There may be multiple widgets active, so update all of them
18         for (appWidgetId in appWidgetIds) {
19             updateAppWidget(context, appWidgetManager, appWidgetId)
20         }
21     }
22
23     override fun onEnabled(context: Context) {
24         // Enter relevant functionality for when the first widget is created
25     }
26
27     override fun onDisabled(context: Context) {
28         // Enter relevant functionality for when the last widget is disabled
29     }
30 }
```

## Output:



## Learning Outcomes:

- Learnt about creating project in Android studio.
- Learnt about to add widgets in Mobile application.
- Learnt how to customize widgets in mobile application.