



School: Campus:
Academic Year: Subject Name: Subject Code:
Semester: Program: Branch: Specialization:
Date:

Applied and Action Learning

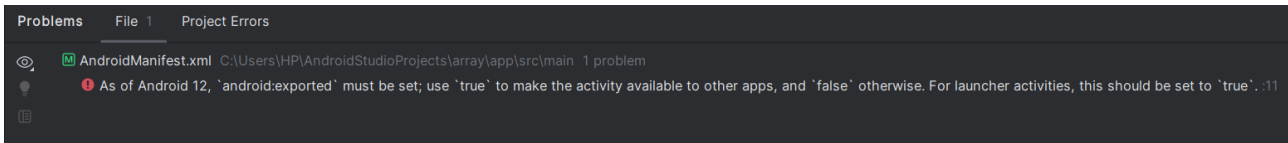
(Learning by Doing and Discovery)

Name of the Experiment :

Coding Phase: Pseudo Code / Flow Chart / Algorithm

- 1. Open Android Studio**
 - Launch Android Studio and open your project or create a new one.
- 2. Add the Necessary Permissions**
 - In AndroidManifest.xml, add the following permission: `<uses-permission android:name="android.permission.POST_NOTIFICATIONS"/>`
- 3. Create or Edit the XML Layout File**
 - Add a **Button** in your layout that will trigger the notification.
- 4. Go to the Corresponding Activity/Fragment**
 - Navigate to the .java or .kt file linked to your layout.
- 5. Initialize the Button in Code**
 - Use `findViewById()` to reference the Button in your Activity/Fragment.
- 6. Create a Notification Channel (For Android 8.0 and above)**
 - Use `NotificationChannel` with properties like **ID**, **Name**, and **Importance**.
 - Register the channel using `NotificationManager`.
- 7. Build the Notification**
 - Use `NotificationCompat.Builder` to create the notification.
 - Set properties like **title**, **text**, **icon**, and **priority**.
- 8. Set Up a Pending Intent (Optional)**
 - Create an Intent to define what happens when the notification is clicked.
 - Wrap the intent in a `PendingIntent`.
- 9. Trigger the Notification**

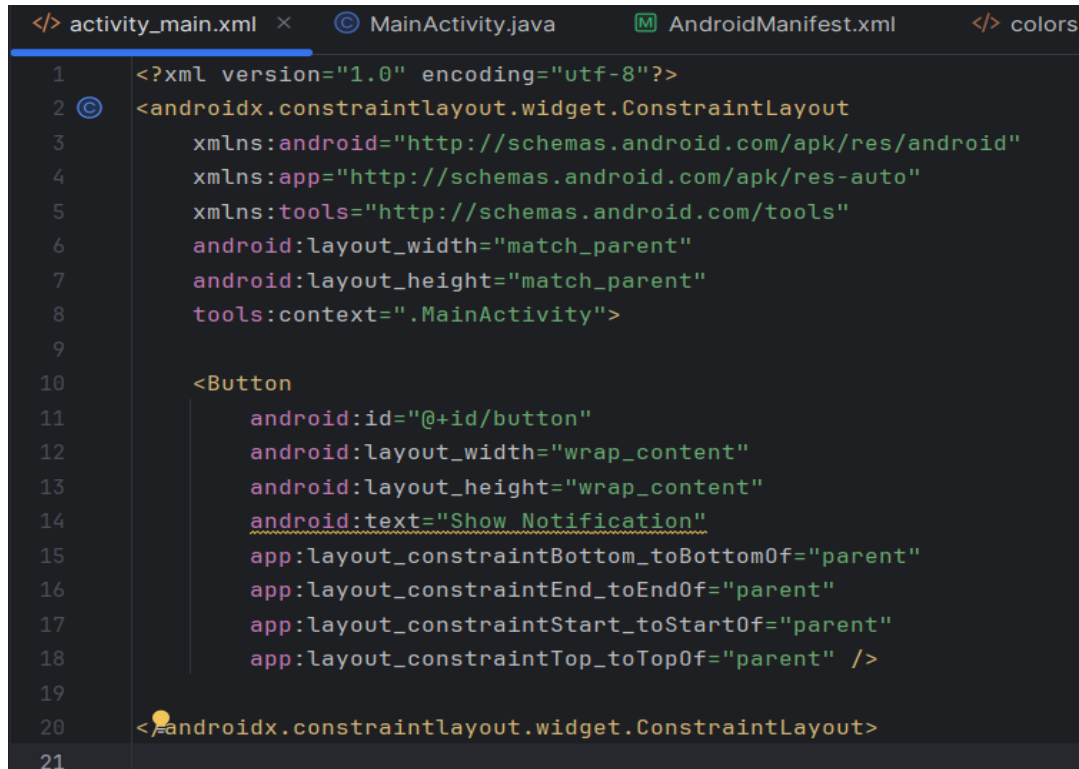
Testing Phase: Compilation of Code (error detection)



Implementation Phase: Final Output(no error)

Step 1: Design the Layout

- Open activity_main.xml from the res → layout folder.



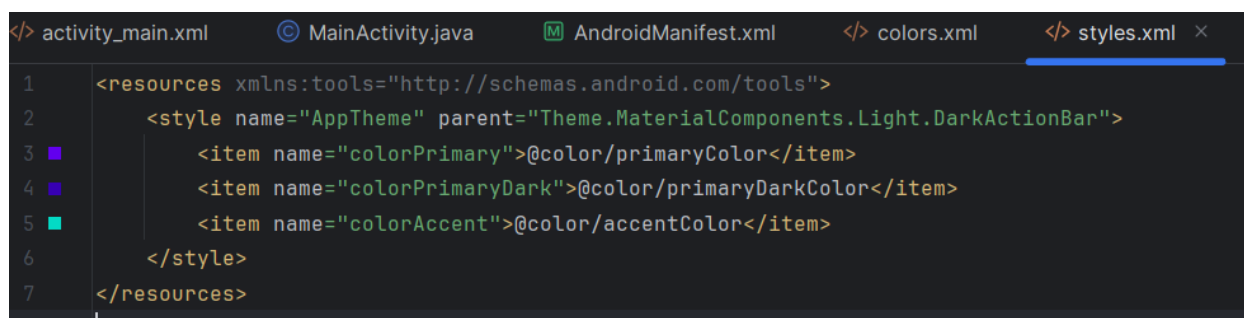
```

1  <?xml version="1.0" encoding="utf-8"?>
2  <androidx.constraintlayout.widget.ConstraintLayout
3      xmlns:android="http://schemas.android.com/apk/res/android"
4      xmlns:app="http://schemas.android.com/apk/res-auto"
5      xmlns:tools="http://schemas.android.com/tools"
6      android:layout_width="match_parent"
7      android:layout_height="match_parent"
8      tools:context=".MainActivity">
9
10     <Button
11         android:id="@+id/button"
12         android:layout_width="wrap_content"
13         android:layout_height="wrap_content"
14         android:text="Show Notification"
15         app:layout_constraintBottom_toBottomOf="parent"
16         app:layout_constraintEnd_toEndOf="parent"
17         app:layout_constraintStart_toStartOf="parent"
18         app:layout_constraintTop_toTopOf="parent" />
19
20 </androidx.constraintlayout.widget.ConstraintLayout>
21

```

Configuring styles.xml (For Custom Theme/Style)

Location: res → values → styles.xml




```

1  <resources xmlns:tools="http://schemas.android.com/tools">
2      <style name="AppTheme" parent="Theme.MaterialComponents.Light.DarkActionBar">
3          <item name="colorPrimary">@color/primaryColor</item>
4          <item name="colorPrimaryDark">@color/primaryDarkColor</item>
5          <item name="colorAccent">@color/accentColor</item>
6      </style>
7  </resources>

```

Configuring colors.xml (For Custom Theme/colors)



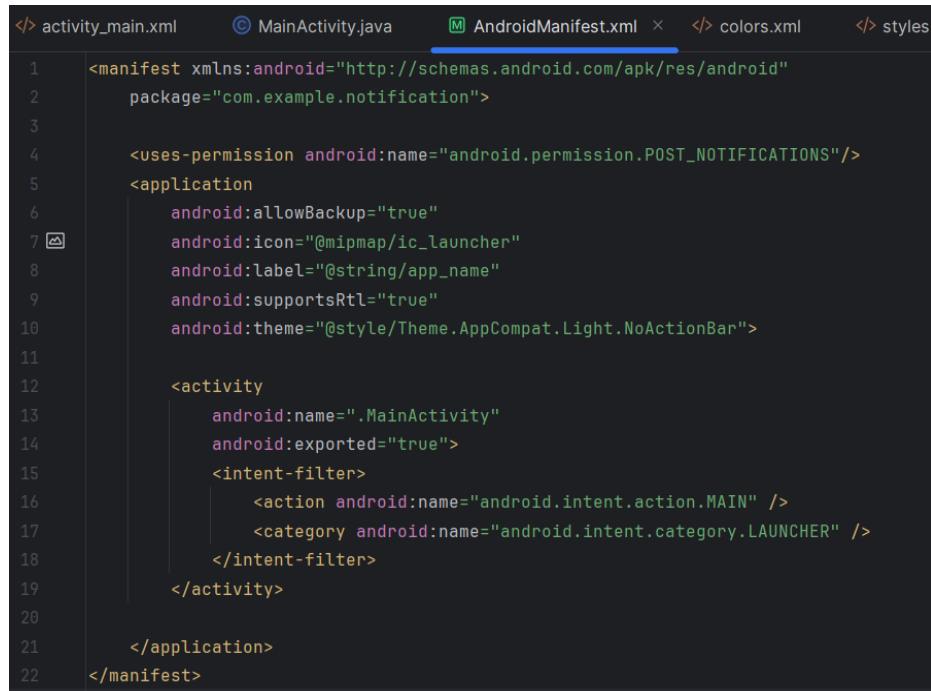
```

1  <resources>
2      <color name="primaryColor">#6200EE</color>
3      <color name="primaryDarkColor">#3700B3</color>
4      <color name="accentColor">#03DAC5</color>
5  </resources>
6

```

Implementation Phase: Final Output(no error)

Open AndroidManifest.xml in the app → src → main folder.
add android:exported="true" to the activity tag with an intent filter.

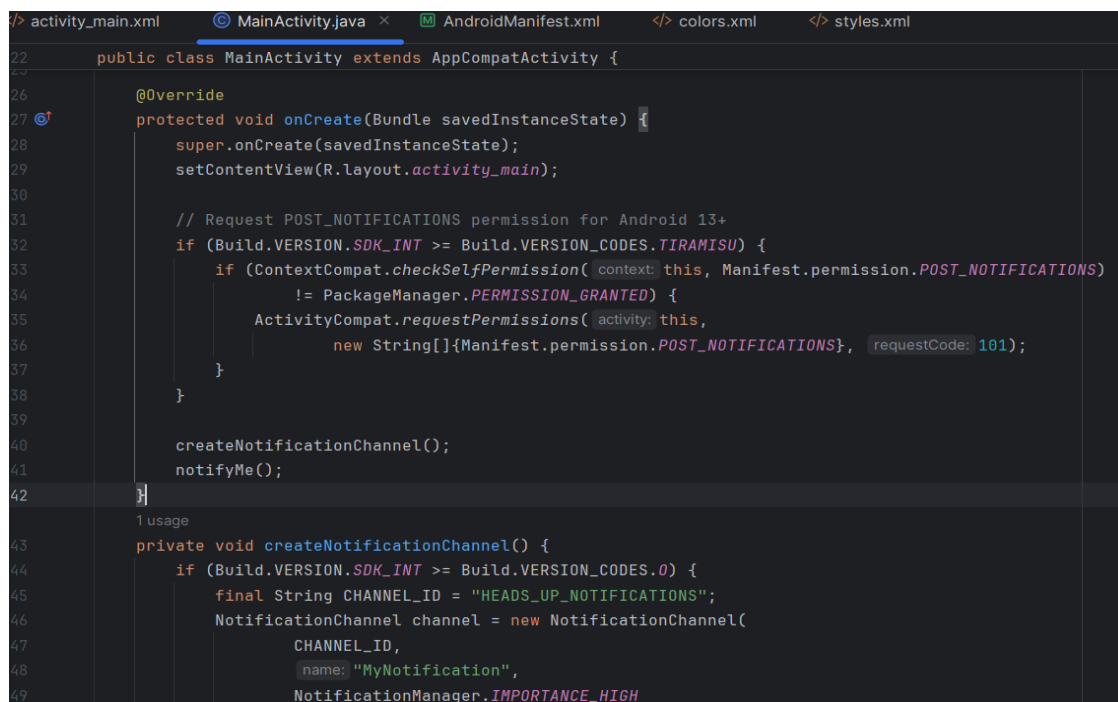


```

1  <manifest xmlns:android="http://schemas.android.com/apk/res/android"
2      package="com.example.notification">
3
4      <uses-permission android:name="android.permission.POST_NOTIFICATIONS"/>
5      <application
6          android:allowBackup="true"
7          android:icon="@mipmap/ic_launcher"
8          android:label="@string/app_name"
9          android:supportsRtl="true"
10         android:theme="@style/Theme.AppCompat.Light.NoActionBar">
11
12         <activity
13             android:name=".MainActivity"
14             android:exported="true">
15             <intent-filter>
16                 <action android:name="android.intent.action.MAIN" />
17                 <category android:name="android.intent.category.LAUNCHER" />
18             </intent-filter>
19         </activity>
20
21     </application>
22 </manifest>

```

Configuring Mainactivity.java



```

22  public class MainActivity extends AppCompatActivity {
23
24      @Override
25      protected void onCreate(Bundle savedInstanceState) {
26          super.onCreate(savedInstanceState);
27          setContentView(R.layout.activity_main);
28
29          // Request POST_NOTIFICATIONS permission for Android 13+
30          if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.TIRAMISU) {
31              if (ContextCompat.checkSelfPermission(context, this, Manifest.permission.POST_NOTIFICATIONS)
32                  != PackageManager.PERMISSION_GRANTED) {
33                  ActivityCompat.requestPermissions(activity, this,
34                      new String[]{Manifest.permission.POST_NOTIFICATIONS}, requestCode: 101);
35              }
36          }
37
38          createNotificationChannel();
39          notifyMe();
40      }
41
42      1 usage
43      private void createNotificationChannel() {
44          if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
45              final String CHANNEL_ID = "HEADS_UP_NOTIFICATIONS";
46              NotificationChannel channel = new NotificationChannel(
47                  CHANNEL_ID,
48                  name: "MyNotification",
49                  NotificationManager.IMPORTANCE_HIGH

```

Click Run .



ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10		
Planning and Execution/ Practical Simulation/ Programming	10		
Result and Interpretation	10		
Record of Applied and Action Learning	10		
Viva	10		
Total	50		

Signature of the Student:

Name :

Regn. No. :

Signature of the Faculty:

