Centurion University
Shaping Lives... Empowering Communities...

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 Experiement :

Coding Phase: Pseudo Code / Flow Chart / Algorithm

Open Android Studio

- Launch Android Studio and open your project or create a new one.

Create or Edit the XML Layout File

- In your project's res/layout folder, create or modify an XML file.
- Add a **ListView** element in the layout where you want to display the list.

Go to the Corresponding Activity/Fragment

- Navigate to the .java or .kt file linked to your layout.

Initialize the ListView in Code

- Use findViewById() to reference the ListView in your Activity/Fragment.

Create a String Array for Data

- Define an array of items (e.g., fruits, countries, etc.) in your code or in res/values/strings.xml.

Create an ArrayAdapter

- Instantiate an ArrayAdapter by passing the context, layout type (e.g., android.R.layout.simple_list_item_1), and your data array.

Set the Adapter to the ListView

- Use .setAdapter() to bind the adapter with the ListView.

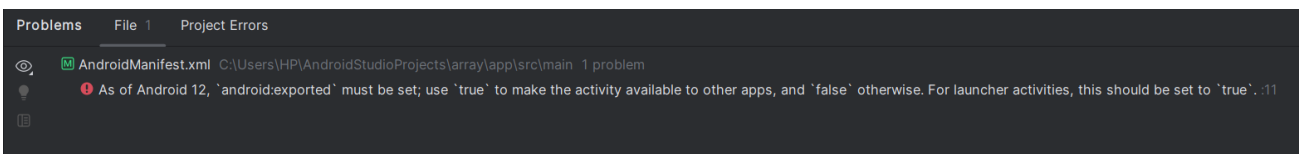
Add Item Click Listener

- Use .setOnItemClickListener() to define what happens when an item is selected.

Run and Test the Application

- Build and run your project to ensure the ListView displays the array data properly.

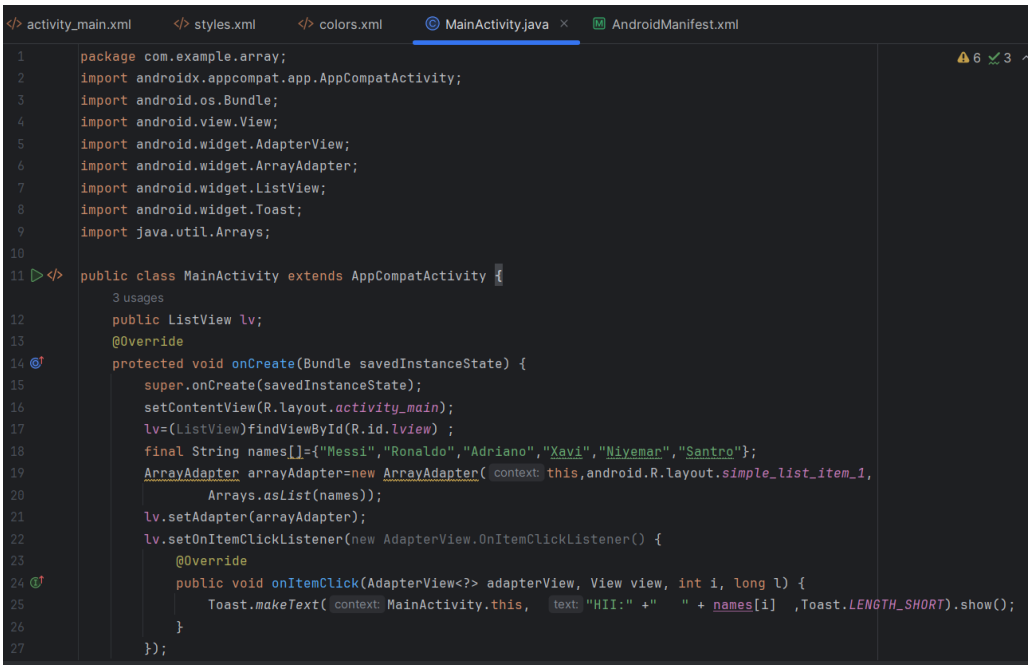
Testing Phase: Compilation of Code (error detection)



Implementation Phase: Final Output(no error)

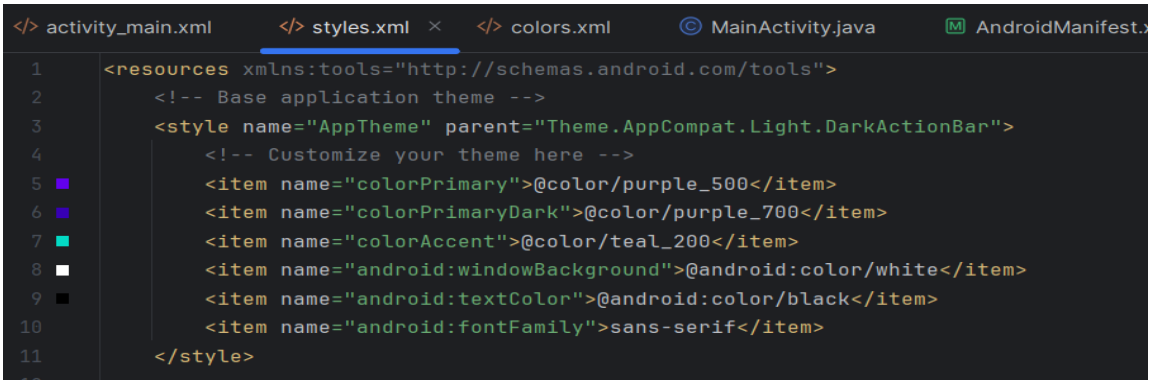
Step 1: Design the Layout

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



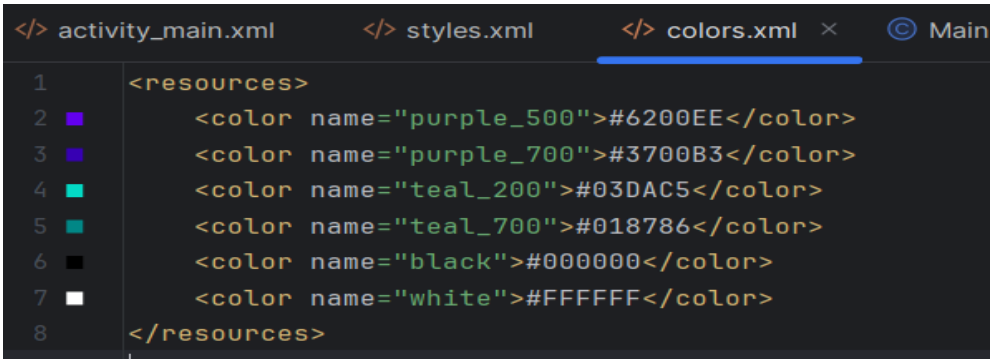
```java
package com.example.array;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;
import java.util.Arrays;

public class MainActivity extends AppCompatActivity {
    3 usages
    public ListView lv;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        lv=(ListView)findViewById(R.id.lview) ;
        final String names[]={"Messi","Ronaldo","Adriano","Xavi","Niyemar","Santro"};
        ArrayAdapter arrayAdapter=new ArrayAdapter( context: this,android.R.layout.simple_list_item_1,
                Arrays.asList(names));
        lv.setAdapter(arrayAdapter);
        lv.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> adapterView, View view, int i, long l) {
                Toast.makeText( context: MainActivity.this,   text: "HII:" +"   " + names[i]  ,Toast.LENGTH_SHORT).show();
            }
        });
```

Configuring styles.xml (For Custom Theme/Style)
Location: res → values → styles.xml



```xml
<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme -->
    <style name="AppTheme" parent="Theme.AppCompat.Light.DarkActionBar">
        <!-- Customize your theme here -->
        <item name="colorPrimary">@color/purple_500</item>
        <item name="colorPrimaryDark">@color/purple_700</item>
        <item name="colorAccent">@color/teal_200</item>
        <item name="android:windowBackground">@android:color/white</item>
        <item name="android:textColor">@android:color/black</item>
        <item name="android:fontFamily">sans-serif</item>
    </style>
```

Configuring colors.xml (For Custom Theme/colors)



```xml
<resources>
    <color name="purple_500">#6200EE</color>
    <color name="purple_700">#3700B3</color>
    <color name="teal_200">#03DAC5</color>
    <color name="teal_700">#018786</color>
    <color name="black">#000000</color>
    <color name="white">#FFFFFF</color>
</resources>
```

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.

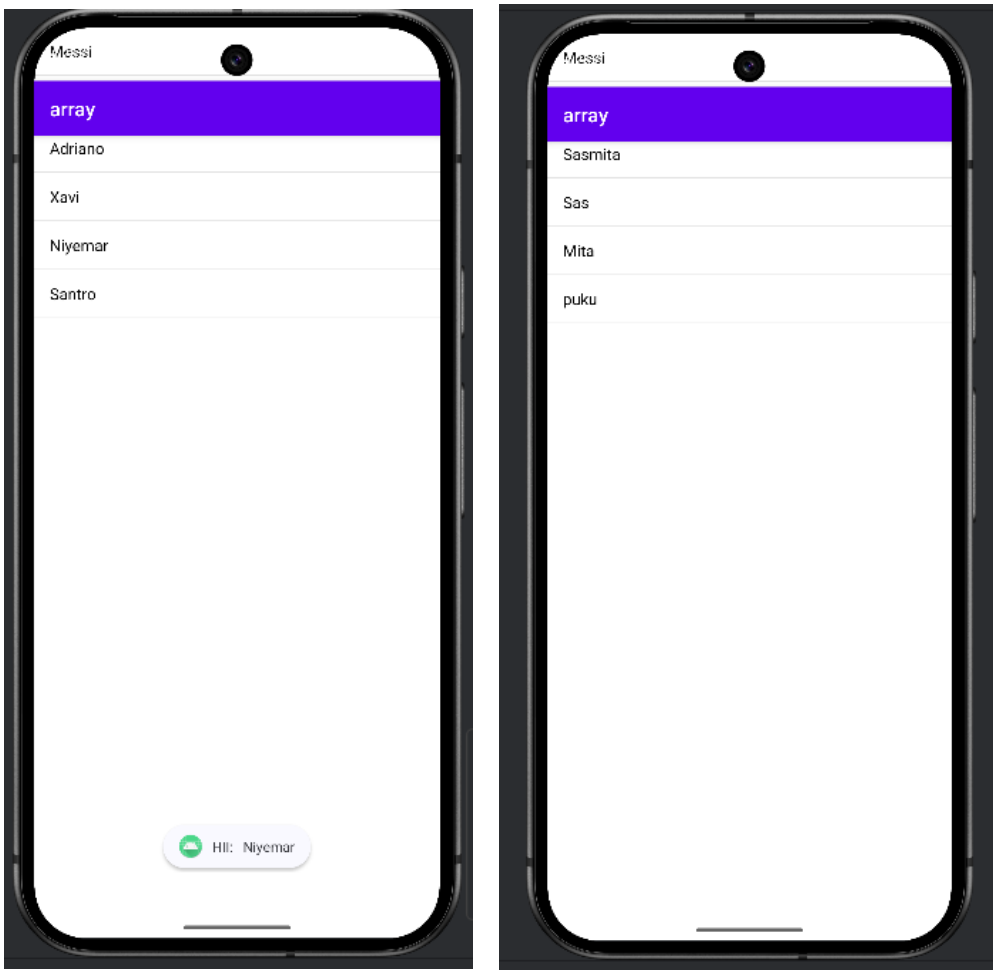
activity_main.xml | styles.xml | colors.xml | MainActivity.java | AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.array">
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <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>
    </application>
</manifest>
```

Configuring Mainactivity.java

```java
public class MainActivity extends AppCompatActivity {
    3 usages
    public ListView lv;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        lv=(ListView)findViewById(R.id.lview) ;
        final String names[]={"Messi","Aayush","Sasmita","Sas","Mita","puku"};
        ArrayAdapter arrayAdapter=new ArrayAdapter( context: this,android.R.layout.simple_list_item_1,
                Arrays.asList(names));
        lv.setAdapter(arrayAdapter);
        lv.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> adapterView, View view, int i, long l) {
                Toast.makeText( context: MainActivity.this,  text: "HII:" +"   " + names[i]  ,Toast.LENGTH_SHORT).show();
            }
        });
    }
}
```

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: