20CYS404-APPLICATION APPLICATION DEVELOPMENT

END SEM LAB EXAM

Experiment -7

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**Aim** :The aim of this Android app is to provide users with a simple and efficient currency converter that allows them to select currencies, enter an amount, and get the converted value in real-time. The app will feature a user-friendly interface displaying currency flags alongside their respective names.

**Code**:

1. **MainActivity.java**

java

package com.example.cc;

import android.os.Bundle;

import android.view.View;

import android.widget.AdapterView;

import android.widget.EditText;

import android.widget.Spinner;

import android.widget.TextView;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

// Currency flags and names

private int[] countryFlags = {

R.drawable.ic\_flag\_us,

R.drawable.ic\_flag\_ca,

R.drawable.ic\_flag\_in,

R.drawable.ic\_flag\_eu,

R.drawable.ic\_flag\_jp

};

private String[] countryNames = {"USD", "CAD", "INR", "EUR", "JPY"};

private Spinner fromCurrencySpinner, toCurrencySpinner;

private TextView resultView;

private EditText amountInput;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

// Initialize views

fromCurrencySpinner = findViewById(R.id.fromCurrencySpinner);

toCurrencySpinner = findViewById(R.id.toCurrencySpinner);

resultView = findViewById(R.id.resultView);

amountInput = findViewById(R.id.amountInput);

// Set up the CurrencyAdapter

CurrencyAdapter adapter = new CurrencyAdapter(this, countryNames, countryFlags);

fromCurrencySpinner.setAdapter(adapter);

toCurrencySpinner.setAdapter(adapter);

// Handle currency conversion

fromCurrencySpinner.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() {

@Override

public void onItemSelected(AdapterView<?> parent, View view, int position, long id) {

calculateConversion();

}

@Override

public void onNothingSelected(AdapterView<?> parent) { }

});

toCurrencySpinner.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() {

@Override

public void onItemSelected(AdapterView<?> parent, View view, int position, long id) {

calculateConversion();

}

@Override

public void onNothingSelected(AdapterView<?> parent) { }

});

}

private void calculateConversion() {

try {

double amount = Double.parseDouble(amountInput.getText().toString());

int fromPos = fromCurrencySpinner.getSelectedItemPosition();

int toPos = toCurrencySpinner.getSelectedItemPosition();

// Dummy conversion rates

double[] conversionRates = {1.0, 1.27, 74.85, 0.85, 110.25}; // Rates to USD

double result = amount / conversionRates[fromPos] \* conversionRates[toPos];

resultView.setText(String.format("%.2f", result));

} catch (NumberFormatException e) {

Toast.makeText(this, "Please enter a valid amount", Toast.LENGTH\_SHORT).show();

}

}

}

2. **CurrencyAdapter.java**

java

package com.example.cc;

import android.content.Context;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.ArrayAdapter;

import android.widget.ImageView;

import android.widget.TextView;

public class CurrencyAdapter extends ArrayAdapter<String> {

private Context context;

private String[] countryNames;

private int[] countryFlags;

public CurrencyAdapter(Context context, String[] countryNames, int[] countryFlags) {

super(context, R.layout.currency\_spinner\_item, countryNames);

this.context = context;

this.countryNames = countryNames;

this.countryFlags = countryFlags;

}

@Override

public View getView(int position, View convertView, ViewGroup parent) {

if (convertView == null) {

convertView = LayoutInflater.from(context).inflate(R.layout.currency\_spinner\_item, parent, false);

}

ImageView flag = convertView.findViewById(R.id.flagImageView);

TextView name = convertView.findViewById(R.id.currencyName);

flag.setImageResource(countryFlags[position]);

name.setText(countryNames[position]);

return convertView;

}

@Override

public View getDropDownView(int position, View convertView, ViewGroup parent) {

return getView(position, convertView, parent);

}

}

3. activity\_main.xml

This layout file contains the main user interface elements.

xml

<?xml version="1.0" encoding="utf-8"?>

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:orientation="vertical"

android:padding="16dp">

<EditText

android:id="@+id/amountInput"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Enter amount"

android:inputType="numberDecimal" />

<Spinner

android:id="@+id/fromCurrencySpinner"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content" />

<Spinner

android:id="@+id/toCurrencySpinner"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content" />

<TextView

android:id="@+id/resultView"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:textSize="18sp"

android:layout\_marginTop="16dp" />

</LinearLayout>

4. **currency\_spinner\_item.xml**

xml

<?xml version="1.0" encoding="utf-8"?>

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

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="horizontal"

android:padding="8dp">

<ImageView

android:id="@+id/flagImageView"

android:layout\_width="40dp"

android:layout\_height="40dp"

android:contentDescription="@string/flag\_desc" />

<TextView

android:id="@+id/currencyName"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginStart="8dp"

android:text="Currency Name" />

</LinearLayout>

5. **AndroidManifest.xml**

Ensure your manifest is set correctly:

xml

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

xmlns:tools="http://schemas.android.com/tools">

<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/Theme.AppCompat.DayNight"

tools:targetApi="31">

<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>



