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Language translator app:

English to Gujarati

Code:

   ❖ Androidmanifest.xml
Code:

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.languagetranslator">

    <uses-permission
android:name="android.permission.INTERNET"></uses-permission>

    <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.LanguageTranslator">
        <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>
```

build.gradle(project:language translator)

```gradle
// Top-level build file where you can add configuration options common to all
sub-projects/modules.
buildscript {
    repositories {
        google()
        mavenCentral()
    }
```

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```gradle
    dependencies {
        classpath "com.android.tools.build:gradle:7.0.3"
        classpath 'com.google.gms:google-services:4.3.10'

        // NOTE: Do not place your application dependencies here; they belong
        // in the individual module build.gradle files
    }
}

task clean(type: Delete) {
    delete rootProject.buildDir
}
```

build.gradle(app)

```gradle
plugins {
    id 'com.android.application'
    id 'com.google.gms.google-services'
}

android {
    compileSdk 31

    defaultConfig {
        applicationId "com.example.languagetranslator"
        minSdk 27
        targetSdk 31
        versionCode 1
        versionName "1.0"

        testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"
    }

    buildTypes {
        release {
            minifyEnabled false
            proguardFiles
getDefaultProguardFile('proguard-android-optimize.txt'), 'proguard-rules.pro'
        }
    }
    compileOptions {
        sourceCompatibility JavaVersion.VERSION_1_8
        targetCompatibility JavaVersion.VERSION_1_8
    }
}

dependencies {

    implementation 'androidx.appcompat:appcompat:1.4.1'
```

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```
implementation 'com.google.android.material:material:1.5.0'
implementation 'androidx.constraintlayout:constraintlayout:2.1.3'
testImplementation 'junit:junit:4.+'
androidTestImplementation 'androidx.test.ext:junit:1.1.3'
androidTestImplementation 'androidx.test.espresso:espresso-core:3.4.0'
implementation platform('com.google.firebase:firebase-bom:29.0.4')
implementation 'com.google.firebase:firebase-analytics'
implementation 'com.google.mlkit:translate:17.0.0'


}
```

The first step app is to connect app to firebase:
So need some dependencies

References:
https://firebase.google.com/docs/ml-kit/android/translate-text

First step-to create app project in firebase and register app and get google service.json file

Now create xml code (UI)
```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical"
    android:layout_gravity="center"
    android:gravity="center"
    tools:context=".MainActivity"
    android:background="@color/blackbg">

<ImageView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:src="@drawable/ic_baseline_translate_24"
    app:tint="@color/orange"
    android:layout_gravity="center"
    android:foregroundGravity="center"
    android:layout_marginTop="5dp"
    android:padding="10dp"


    />

    <TextView
        android:layout_width="match_parent"
```

```xml
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_marginTop="0dp"
        android:gravity="center"
        android:text="Language translator"
        android:textColor="@color/orange"
        android:textSize="24dp"
        android:textStyle="bold"

        />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Translator from english to gujarati"
        android:textSize="24dp"
        android:id="@+id/orgtext"
        android:textColor="@color/white"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
         />
<EditText
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textColor="@color/orange"
    android:hint="enter the text"
    android:textColorHint="@color/orange"
    android:id="@+id/srctext"
    android:layout_margin="20dp"
    android:textStyle="normal"
    android:textSize="24dp"
    android:paddingLeft="0dp"
    android:layout_marginStart="10dp"
    android:layout_marginTop="5dp"


    />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Translated Text"
        android:textSize="24dp"
        android:layout_margin="10dp"
        android:textColor="@color/white"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
```

```xml
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />



    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Result"
        android:layout_marginLeft="15dp"
        android:layout_marginEnd="10dp"
        android:layout_marginStart="15dp"
        android:textAlignment="textStart"
        android:textSize="24dp"
        android:textColor="@color/orange"
        android:id="@+id/translatedtv"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />




    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="translate"
        android:textColor="@color/black"
        android:textSize="30dp"
        android:id="@+id/btntranslate"
        android:backgroundTint="@color/orange"/>


</LinearLayout>
```

Drawable directory:

Ic_baseline_translate_24

```xml
Code:
<vector xmlns:android="http://schemas.android.com/apk/res/android"
    android:width="24dp"
    android:height="24dp"
    android:viewportWidth="24"
    android:viewportHeight="24"
    android:tint="?attr/colorControlNormal">
  <path
```

```
    android:fillColor="@android:color/white"
    android:pathData="M12.87,15.07l-2.54,-2.51 0.03,-0.03c1.74,-1.94
2.98,-4.17 3.71,-6.53L17,6L17,4h-7L10,2L8,2v2L1,4v1.99h11.17C11.5,7.92
10.44,9.75 9,11.35 8.07,10.32 7.3,9.19 6.69,8h-2c0.73,1.63 1.73,3.17
2.98,4.56l-5.09,5.02L4,19l5,-5 3.11,3.11
0.76,-2.04zM18.5,10h-2L12,22h2l1.12,-3h4.75L21,22h2l-4.5,-12zM15.88,17l1.62,-4.
33L19.12,17h-3.24z"/>
</vector>
```

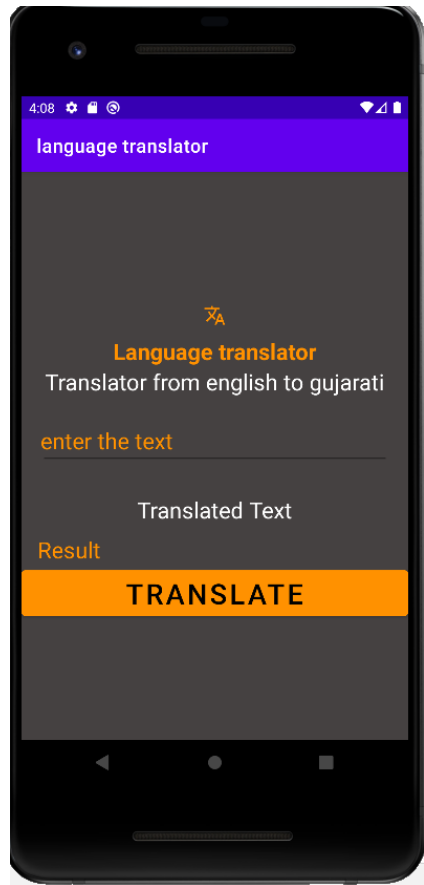Colors.xml

Code:

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="purple_200">#FFBB86FC</color>
    <color name="purple_500">#FF6200EE</color>
    <color name="purple_700">#FF3700B3</color>
    <color name="teal_200">#FF03DAC5</color>
    <color name="teal_700">#FF018786</color>
    <color name="black">#FF000000</color>
    <color name="white">#FFFFFFFF</color>
    <color name="blackbg">#454141</color>
    <color name="yellow">#e8a761</color>
    <color name="orange">#FF9100</color>
    <color name="bg_black">#41413B</color>
</resources>
```

Output of xml :
App look like be:

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MainActivity.java

Code:
```java
package com.example.languagetranslator;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Spinner;
import android.widget.Switch;
import android.widget.TextView;
import android.widget.Toast;


import com.google.android.gms.tasks.OnFailureListener;
import com.google.android.gms.tasks.OnSuccessListener;
import com.google.mlkit.nl.translate.TranslateLanguage;
```

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```java
import com.google.mlkit.nl.translate.Translation;
import com.google.mlkit.nl.translate.Translator;
import com.google.mlkit.nl.translate.TranslatorOptions;



public class MainActivity extends AppCompatActivity  {



//    TextView orgtext;
    Button btntranslate;
    EditText srctext;
//    TextView result;
    TextView translatedtv;
    Translator result;
    String originaltext="";




    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

//        orgtext=findViewById(R.id.orgtext);
        translatedtv=findViewById(R.id.translatedtv);
        btntranslate=findViewById(R.id.btntranslate);
        srctext=findViewById(R.id.srctext);
       // result=findViewById(R.id.result);




        btntranslate.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                //stores srctext into variable original text
                originaltext=srctext.getText().toString();

                //make ready model
                    readymodel();
            }
        });
```

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```java
    }



    private void readymodel(){
        TranslatorOptions options=new TranslatorOptions.Builder()
                .setSourceLanguage(TranslateLanguage.ENGLISH)
                .setTargetLanguage(TranslateLanguage.GUJARATI)
                .build();

        result= Translation.getClient(options);


//        for download model if there is not availabel

result.downloadModelIfNeeded().addOnSuccessListener(new
OnSuccessListener<Void>() {
    @Override
    public void onSuccess(Void unused) {
//        now model is ready to use so can download
//now do translate
            translate();

    }
}).addOnFailureListener(new OnFailureListener() {
    @Override
    public void onFailure(@NonNull Exception e) {
        System.out.println(e);
    }
});

    }
    public  void translate() {
        result.translate(originaltext).addOnSuccessListener(new
OnSuccessListener<String>() {
            @Override
            public void onSuccess(String s) {
                translatedtv.setText(s);


            }
        }).addOnFailureListener(new OnFailureListener() {
            @Override
            public void onFailure(@NonNull Exception e) {
                translatedtv.setText("can not be translated" + e.getMessage());
            }
        });
```
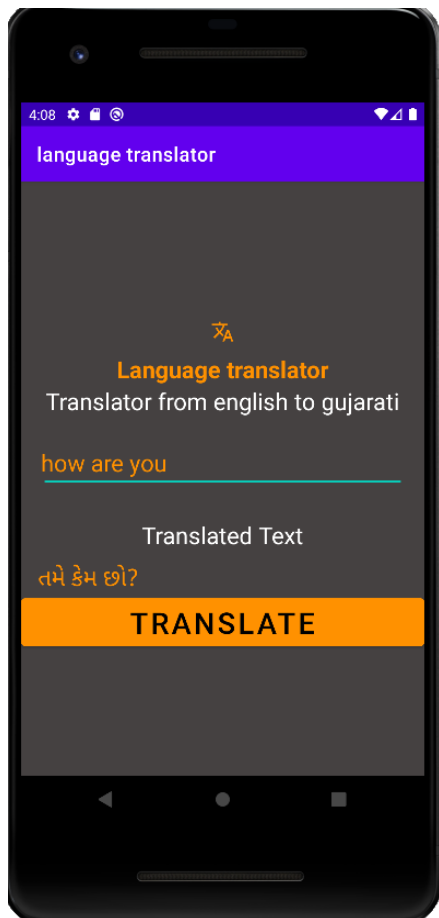
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        }

}

Output: