

The Tourist Guide App

Introduction:

The tourist guide app as the name suggests guides the user of the application while searching for details about the country he/she wants to visit or wants to get an idea about. Consider a tourist who is planning a trip to some foreign country, he/she wants to know some details related to current exchange rate between his source country and destination country, details about how to speak the native language and basic information about banks, hospitals etc. The application developed, provides these functionalities and thus serves as a tourist guide for the users. The application is developed in Java with the help of Restful API's.

Functionalities and Design:

1. Users can select source country and destination country from a dropdown
2. After Clicking the button "Get Details", details about the source country and destination country are returned which include details such as Currency type and Language (certain details such as language, will be mentioned only for destination country)
3. Clicking on the currency exchange rate button i.e. "Get exchange Rate" will display the current exchange rate between the two countries.
4. For Language translation, a Text Area is provided wherein the tourist can type what they wish to say in English. After this once the Translate button is clicked it will be translated into the native languages (note that there can be different dialects of the native language and all of them will be present in drop down menu to select). This translated text will be displayed in another Text area field.
5. Tourists can type in the location in a Text Field and choose from selections such as local eateries, hospitals, banks, restaurants that they are searching for nearby to that location
6. The Application will return the name of the places and the link of that location for google map. With the help of this users can easily navigate to that location using any web browser

API's Used:

1. To get the details about the country

To get the details about the country as mentioned above, the following Restful API was used, <https://restcountries.eu/rest/v1/name/>, which takes the input parameter in the form of a country name E.g. <https://restcountries.eu/rest/v1/name/Australia> and returns details about the country in the form of JSON object.

This API makes a HTTP GET request call.

The JSON Object contains details about, country name, capital of the country, Currency used in that country, language spoken etc., but among them only name, currency, language are used in this application the currency and language will be the input to the next API given below

2. To get The Current exchange rate

To get the current exchange rate between two countries following Restful API is used

http://apilayer.net/api/live?access_key=acf2da50fbb6484ab933a5c5f56bcc00

This API makes a HTTP GET request call.

Here we need to pass the API key in the parameter and the response will provide the Exchange rate for all countries relative to USA and this can be used further to get the exchange rate between any two countries.

Eg.

```
{ "USDAED": 3.67315, "USDAFN": 69.139999, "USDALL": 124.984497, "USDAMD": 494.73999, ... }
```

Response is in JSON format

3. To translate the Text

To translate the text between English to any other language following Restful API was used,

<https://translate.yandex.net/api/v1.5/tr/translate?key=trnsl.1.1.20160220T003605Z.5abc9a5d0c01ad1e.8b191f8218d9af3087273e871eea2fb178b778f1&txt=>

```
+ textFrom
+ ""
+ "&lang="
+ languageFrom
+ "-"
+ languageTo
+ "&[format=plain]";
```

This API makes a HTTP GET request.

It takes four inputs such as API key, text to be translated, source language and destination language (destination language returned from first Api). The API will return the response in the form of XML which consists of the translated text.

4. To get the Details about the location

The Restful API to get the details of the location entered is as follows,

["http://maps.googleapis.com/maps/api/geocode/json?address=](http://maps.googleapis.com/maps/api/geocode/json?address=)
+ location + [&sensor=true"](http://maps.googleapis.com/maps/api/geocode/json?address=)

This API makes a HTTP GET request call.

Location is taken as an input parameter and the API returns the details of the address such as geometric Details, Vicinity, Longitude and Latitude and other details in JSON format. Out of this only Longitude and Latitude will be used as an input to the next API mentioned below.

5. To get the Details about the Nearby Location depending upon the type

To get details about Nearby Places following API is used,

["https://maps.googleapis.com/maps/api/place/nearbysearch/json?location=](https://maps.googleapis.com/maps/api/place/nearbysearch/json?location=)

```
+ location
+ "&radius=500&types="
+ type
+
+ "&key=AIzaSyCOGFEo6K74co0IlpuHpGdIjYrY5Vxj0dI";
```

This API makes a HTTP GET request call.

The API takes location input in the form of longitude and latitude as an input which are returned by above Api (4th) call's output and also selection type (i.e. restaurants, hospitals etc.) and API

Key returns more specific details about nearby places in that location's radius in the form of JSON Object.

Screen Shots of running Application:

1. Select Source and Destination country and click on "Get Details" Button

The screenshot shows a Java Swing window titled "Tourist Guide". The window has a light blue header bar with the text "Tourist Guide: Select Source and Destination Country". Below the header, there are two dropdown menus: "Source Country:" with "United States" selected, and "Destination Country:" with "India" selected. A "Get Details" button is positioned between these two dropdowns. A red rectangular box highlights the "Source Country:", "Destination Country:", and "Get Details" button area. Below this, there is a section titled "Select Currency For the Conversion for the selected countries" with two more dropdown menus: "Source Country Currency:" with "Select" selected, and "Destination Country Curren..." with "Select" selected. A "Get Current Exchange Rate" button is located below these. Further down, there is a section titled "Exchange Rate Result:" with a text area for "Write Text in the text Area and select one of the langauges of destination Country". Below this, there is a "Translate" section with a text area for "Enter Text To Transla...", a "Select" dropdown for language, and a "Translated Text is:" text area. A "Translate" button is below this. At the bottom, there is a section titled "Enter the Name of The place below and Select the type of place you are searching for" with a text area for "Enter Place:", a dropdown menu with "food" selected, and a "Search Places" button. The window is set against a white background with a standard Windows taskbar at the bottom.

2. Details such as Currency and Language of the destination Country are displayed

The screenshot shows the 'Tourist Guide' application window. The title bar reads 'Tourist Guide'. The main window has a blue header with the text 'Tourist Guide: Select Source and Destination Country'. Below this, there are two dropdown menus: 'Source Country:' with 'United States' selected and 'Destination Country:' with 'India' selected. A 'Get Details' button is positioned between them. The next section is titled 'Select Currency For the Conversion for the selected countries'. It contains two dropdown menus: 'Source Country Currency:' with 'USD' selected and 'Destination Country Curren...' with 'INR' selected. A 'Get Current Exchange Rate' button is below these. The 'Exchange Rate Result:' section is currently empty. Below that, there is a text input field labeled 'Enter Text To Transla...' containing 'hi', and a dropdown menu for language selection with 'hi' selected. A 'Translate' button is to the right. The bottom section is titled 'Enter the Name of The place below and Select the type of place you are searching for'. It has an 'Enter Place:' text input field, a dropdown menu with 'food' selected, and a 'Search Places' button. The Windows taskbar is visible at the bottom.

3. Get the current exchange rate between two selected currencies (note: more than one destination country can be selected) by clicking on “Get Current Exchange Rate” button and the exchange rate will be returned and displayed.

This screenshot shows the same 'Tourist Guide' application window as the previous one, but with the 'Get Current Exchange Rate' button clicked. The 'Exchange Rate Result:' section now displays the value '68.55545'. The 'Get Current Exchange Rate' button is highlighted with a red box. The rest of the interface, including the country and currency selections, remains the same. The Windows taskbar is visible at the bottom.

4. Translate the text into native language of the destination country

The screenshot shows the 'Tourist Guide' application window. The 'Source Country' is set to 'United States' and the 'Destination Country' is 'India'. The 'Source Country Currency' is 'USD' and the 'Destination Country Currency' is 'INR'. The 'Exchange Rate Result' is '68.55545'. The 'Enter Text To Translate' field contains 'What is your name?' and the 'Translated Text is' field contains 'आपका नाम क्या है?'. The 'Enter Place' field is empty, and the 'Search Places' button is visible.

5. Enter the location name in text field and click on Search Places and the details of nearby places around that location will be return in the form of Name and URL that points to that location on Google maps

The screenshot shows the 'Tourist Guide' application window. The 'Enter Place' field contains 'Bandra' and the 'Search Places' button is visible. The search results are displayed in a list below the search bar. The first result is 'Dhanraj' with the URL 'https://maps.google.com/?q=@19.0603027,72.8362052'. The second result is 'Stomach' with the URL 'https://maps.google.com/?q=@19.0598157,72.8340561'. The third result is 'Sub Way Eat Fresh' with the URL 'https://maps.google.com/?q=@19.063523,72.834852'. The fourth result is 'Lebanese Point' with the URL 'https://maps.google.com/?q=@19.0608402,72.8370059'.

6. If you search the above mentioned URL link on an external browser it will return the exact location of that place on Google maps