**A**

# REAL-TIME RESEARCH PROJECT

**ON**

# CURRENCY CONVERTER PROJECT

Submitted in partial fulfillment of the requirement for the award of the degree of

## BACHELOR OF TECHNOLOGY

## IN

## COMPUTER SCIENCE AND ENGINEERING

Submitted by

T. AKHILA(22R91A05P2)

P.PREMALATHA(22R91A05K7)

SH.ASIF(22R91A05M3)

T.SURYAVARDHAN REDDY(22R91A05N9)

Under the Guidance Of

## Dr.BNV Madhu Babu ( Professor)

**Department of CSE**



Department of Computer Science and Engineering

TEEGALA KRISHNA REDDY ENGINEERING COLLEGE

(An Autonomous Institution)

Medbowli, Meerpet, Saroornagar, Hyderabad – 500097

(Affiliated to JNTUH, Approved by AICTE, Accredited by NBA & NAAC ‘A’)

## TEEGALA KRISHNA REDDY ENGINEERING COLLEGE

(Sponsored by TKR Educational Society)

Approved by AICTE, Affiliated by JNTUH, Accredited by NBA & NAAC-A) Medbowli, Meerpet, Saroornagar, Hyderabad – 500 097.



Phone: 040-24092838 Fax[:](http://www.tkrec.ac.in/) [+91-040-2409255](http://www.tkrec.ac.in/)5

E-mail: tkrec@rediffmail.com Website: [www.tkrec.ac.in](http://www.tkrec.ac.in/)

Department of Computer Science & Engineering

College code: R9

# CERTIFICATE

This is to certify that the Real-Time Project report on(“**currency converter** ”) is a bonafide work carried out by **T.Akhila-** (22R91A05P2) , **P.Premalatha-** (22R91A05K7), SH.Asif**-** (22R91A05M3),T.Suryavardhan Reddy(22R91A05N9) in partial fulfillment for the requirement of the award of B.Tech degree in Computer Science and Engineering, Teegala Krishna Reddy Engineering College, Hyderabad, affiliated to Jawaharlal Nehru Technological University, Hyderabad under my guidance and supervision.

The result of investigation enclosed in this report have been verified and found satisfactory. The results embodied in the project work have not been submitted to any other University for the award many degree.

|  |  |
| --- | --- |
| **INTERNAL GUIDE**  Dr.BNV Madhu Babu  (Professor)  ……………………………….. | **HEAD OF DEPARTMENT**  Dr.CH.V.Phani Krishna Professor  …………………………….. |

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Phone: 040-24092838 Fax[:](http://www.tkrec.ac.in/) [+91-040-240925](http://www.tkrec.ac.in/)55

E-mail: tkrec@rediffmail.com Website: [www.tkrec.ac.in](http://www.tkrec.ac.in/)

Department of Computer Science & Engineering

College code: R9

# DECLARATION

We hereby declare that Real-Time Project report entitled “**CURRENCY CONVERTER PROJECT**” is done under the guidance of **Dr.BNV Madhu Babu (Professor)**, Department of Computer Science and Engineering, Teegala Krishna Reddy Engineering College, is submitted in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering from Jawaharlal Nehru Technological

University,Hyderabad.

This is a record of bonafide work carried out by us in Teegala Krishna Reddy Engineering College and the results embodied in this project have not been reproduced or copied from any source.

**Submitted by**

**T.Akhila-(22R91A05P2)**

**P.Premalatha-(22R91A05K7)**

**SH.Asif(22R91A05M3)**

**T.Suryavardhan Reddy(22R91A05N9)**

**-**

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**By**

**T.Akhila-(22R91A05P2)**

**P.Premalatha-(22R91A05K7)**

**SH.asif-(22R91A05M3)**

**T.Suryavardhan Reddy(22R91A05N9)**

# ABSTRACT

This project is website-based project and this website help to currency covert according to rate of country currency. The Currency Converter website is helping to the convert money like Indian Rupees to American Dollar or Indian Rupees to Dubai Dirham. And this website. Different countries use different currency, and there is daily variation in these currencies relative to one another. Those who transfer money from one country to another (one currency to another) must be updated with the latest currency exchange rates in the market. And this website mainly helpful in business, shares, and finance. Different countries use different currencies and these currencies change daily compared to each other. Those who have transferred money (one currency to another) from one country to another must be updated with the latest currency exchange rates in the market. With this in mind, the Currency Converter project has been created. This is just an app development like a calculator using Python. In this application, there are regular updates about each country's currency by which it reflects the current currency market value and conversion rate. Such an application can be used by any user, but it is mainly useful for business, shares and finance related areas where money transfer and currency exchange takes place daily. In this currency converter app, users are given the option to choose the type of conversion, i.e. "this" currency to "to" currency. This simple feature allows users to enter the display the converted amount (say currency in amount to convert (say currency in dollars.

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## INTRODUCTION

Purpose: An easily accessible online currency converter is very useful to show travelers how their own currencies will fare when exchanged with other foreign currency. Moreover, currency converters help international import and export businesses by helping them determine the selling and buying profits of different products.

Scope: The Currency Converter App is helping to the convert money like Indian Rupees to American Doller or Indian Rupees to Dubai Dirham. Currency Converter is a calculator or a software or a tool that converts quantity or value of one currency into the relative quantities or values of other.Every software may have some cases of bugs, errors, security related problems or system faults. There are many problems or system faults for example, computer collapse or crashes due to power supply problem will invalidate efforts of number of students. So in future we can develop

**2.LITERATURE SURVEY**

1. Research Papers:

- Look for academic papers that discuss the implementation of currency converters using Python or other programming languages.

- Explore research on currency exchange rate APIs, data processing techniques, and user interface design in currency converter projects.

2. Articles and Blogs:

- Read articles and blog posts that provide insights into building currency converter applications with Python.

- Look for tutorials, case studies, and best practices shared by developers who have worked on similar projects.

3. Documentation:

- Refer to official documentation of currency exchange rate APIs that can be integrated into Python projects.

- Explore documentation on GUI libraries like Tkinter or PyQt for creating user interfaces in Python applications.

4. Online Forums and Communities:

- Engage with online forums such as Stack Overflow, Reddit, or Python community forums to seek advice, share experiences, and learn from others working on currency converter projects.

5. GitHub Repositories:

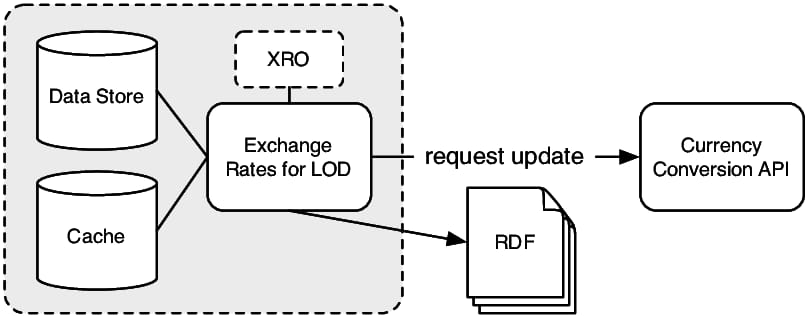
- Explore GitHub repositories that contain open-source currency converter projects implemented in Python.

- Analyze the code structure, implementation details, and features of existing projects to gain insights for your own implementation.

6. Technical Journals and Publications:

- Look for technical journals and publications related to financial technology, currency exchange, and software development that may cover topics relevant to currency converter projects.

**3.SYTEM DESIGN**



**3.IMPLEMENTATION**

1: Setting Up the Project

1.1 Environment Setup:

* Installing Python and setting up a development environment.
* Utilizing a virtual environment to keep project dependencies isolated.
  1. Library Installation:

Introduction to the required libraries:

* tkinter: A standard GUI library for creating the user interface.
* requests: A library for making HTTP requests to fetch currency conversion rates.
* json: A built-in library for working with JSON data.

2: Implementing the CurrencyConverter Class

2.1 Fetching Currency Rates:

* Understanding the API used to fetch live currency rates.

Utilizing the requests library to make a GET request and obtain the rates in JSON format.

* Extracting the rates from the API response using the json library.

3: Building the User Interface

3.1 Creating the Main Window:

* Importing the necessary modules from tkinter.

Setting up the main window with a title and dimensions.

\*Centering the window on the screen.

3.2 Adding Labels and Entry Fields:

* Creating labels and entry fields for source currency, target currency, and amount.
* Utilizing the grid() method to organize the layout within the window.

3.3 Implementing the Conversion Function:

* Defining the convert() function to perform the currency conversion.
* Retrieving user input from the entry fields.
* Using the requests library to fetch the current conversion rate from a web page.
* Performing the currency conversion calculation.

3.4 Displaying the Result:

* Adding a label to display the converted amount.
* Updating the label with the calculated result.

4: Interacting with the Web

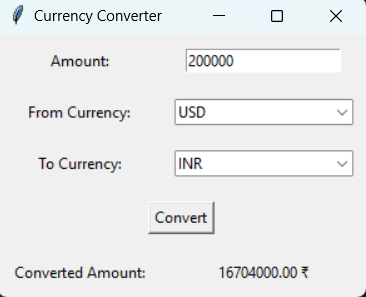
4.1 Making HTTP Requests:

* Discussing the requests library in more detail.
* Exploring different types of requests and HTTP methods.

**5.CODING**

import tkinter as tk  
from tkinter import ttk, messagebox  
import requests  
from babel import Locale  
  
class CurrencyConverter:  
 def \_\_init\_\_(self, root):  
 self.root = root  
 self.root.title("Currency Converter")  
  
 self.api\_url = "https://api.exchangerate-api.com/v4/latest/USD"  
 self.currencies = self.get\_currencies()  
  
 self.create\_widgets()  
  
 def get\_currencies(self):  
 try:  
 response = requests.get(self.api\_url)  
 data = response.json()  
 return data['rates'].keys()  
 except requests.exceptions.RequestException as e:  
 messagebox.showerror("Error", f"Unable to fetch currency data: {e}")  
 return []  
  
 def get\_currency\_symbol(self, currency\_code):  
 try:  
 locale = Locale('en', 'US')  
 return locale.currency\_symbols[currency\_code]  
 except KeyError:  
 return currency\_code  
  
 def create\_widgets(self):  
 self.amount\_label = tk.Label(self.root, text="Amount:")  
 self.amount\_label.grid(row=0, column=0, padx=10, pady=10)  
  
 self.amount\_entry = tk.Entry(self.root)  
 self.amount\_entry.grid(row=0, column=1, padx=10, pady=10)  
  
 self.from\_currency\_label = tk.Label(self.root, text="From Currency:")  
 self.from\_currency\_label.grid(row=1, column=0, padx=10, pady=10)  
  
 self.from\_currency\_combo = ttk.Combobox(self.root, values=list(self.currencies))  
 self.from\_currency\_combo.grid(row=1, column=1, padx=10, pady=10)  
 self.from\_currency\_combo.set('USD')  
  
 self.to\_currency\_label = tk.Label(self.root, text="To Currency:")  
 self.to\_currency\_label.grid(row=2, column=0, padx=10, pady=10)  
  
 self.to\_currency\_combo = ttk.Combobox(self.root, values=list(self.currencies))  
 self.to\_currency\_combo.grid(row=2, column=1, padx=10, pady=10)  
 self.to\_currency\_combo.set('INR')  
  
 self.convert\_button = tk.Button(self.root, text="Convert", command=self.convert)  
 self.convert\_button.grid(row=3, column=0, columnspan=2, padx=10, pady=10)  
  
 self.result\_label = tk.Label(self.root, text="Converted Amount:")  
 self.result\_label.grid(row=4, column=0, padx=10, pady=10)  
  
 self.result = tk.Label(self.root, text="")  
 self.result.grid(row=4, column=1, padx=10, pady=10)  
  
 def convert(self):  
 amount = self.amount\_entry.get()  
 from\_currency = self.from\_currency\_combo.get()  
 to\_currency = self.to\_currency\_combo.get()  
  
 if not amount:  
 messagebox.showerror("Error", "Please enter an amount to convert")  
 return  
  
 try:  
 amount = float(amount)  
 except ValueError:  
 messagebox.showerror("Error", "Please enter a valid amount")  
 return  
 try:  
 response = requests.get(f"{self.api\_url}?base={from\_currency}")  
 data = response.json()  
 rate = data['rates'][to\_currency]  
 converted\_amount = amount \* rate  
 to\_currency\_symbol = self.get\_currency\_symbol(to\_currency)  
 self.result.config(text=f"{converted\_amount:.2f} {to\_currency\_symbol}")  
 except requests.exceptions.RequestException as e:  
 messagebox.showerror("Error", f"Unable to fetch conversion data: {e}")  
 exceptKeyError:  
 messagebox.showerror("Error", "Invalid currency code")  
  
if \_\_name\_\_ == "\_\_main\_\_":  
 root = tk.Tk()  
 app = CurrencyConverter(root)  
 root.mainloop()

**6.OUTPUT SCREENS**

****

**7.CONCLUSION**

In conclusion, the currency converter serves as a crucial tool in facilitating international transactions and financial planning. Its user-friendly interface and real-time exchange rate updates make it accessible and reliable for users worldwide. However, it's important to consider its limitations, such as possible transaction fees and the impact of fluctuating exchange rates on actual conversions. Despite these challenges, advancements in technology continue to enhance its accuracy and effciency, making it an indispensable asset for both individuals and businesses navigating the global economy."This conclusion summarizes the benefits of a currency converter while acknowledging potential drawbacks and highlighting ongoing improvements in technology.

**8.REFERENCE**

1. \*XE Currency Converter\*: XE provides a popular online currency converter that offers live exchange rates and historical charts.

1. \*Currency Converter API Documentation\*: Many financial APIs, such as those provided by XE or OANDA, offer documentation that outlines how their currency conversion services work, including API endpoints, parameters, and usage examples.
2. \*Financial News Websites\*: Websites like Bloomberg, Reuters, or CNBC often provide articles and analyses related to currency markets and converters, including discussions on trends, challenges, and advancements in currency conversion technology.
3. \*Academic Journals and Publications\*: For a more scholarly approach, academic journals in finance, economics, or technology may publish studies or articles on currency converters, their efficacy, limitations, and technological innovations in the field.
4. \*Financial Institutions\*: Banks and financial institutions often have resources or publications on their websites that explain currency conversion services they offer, including factors affecting exchange rates and considerations for users.