Report of Mini Project

on

CURRENCY CONVERTER

as part of submission towards VSEC02 course work

(April 2024)

for the Programming Skills in Python (VSEC02) course at

F.Y.B.Tech Instrumentation and Control

[AY 2023-2024 Semester II]

by

CNo: UIT2023811- GAURI BANSODE
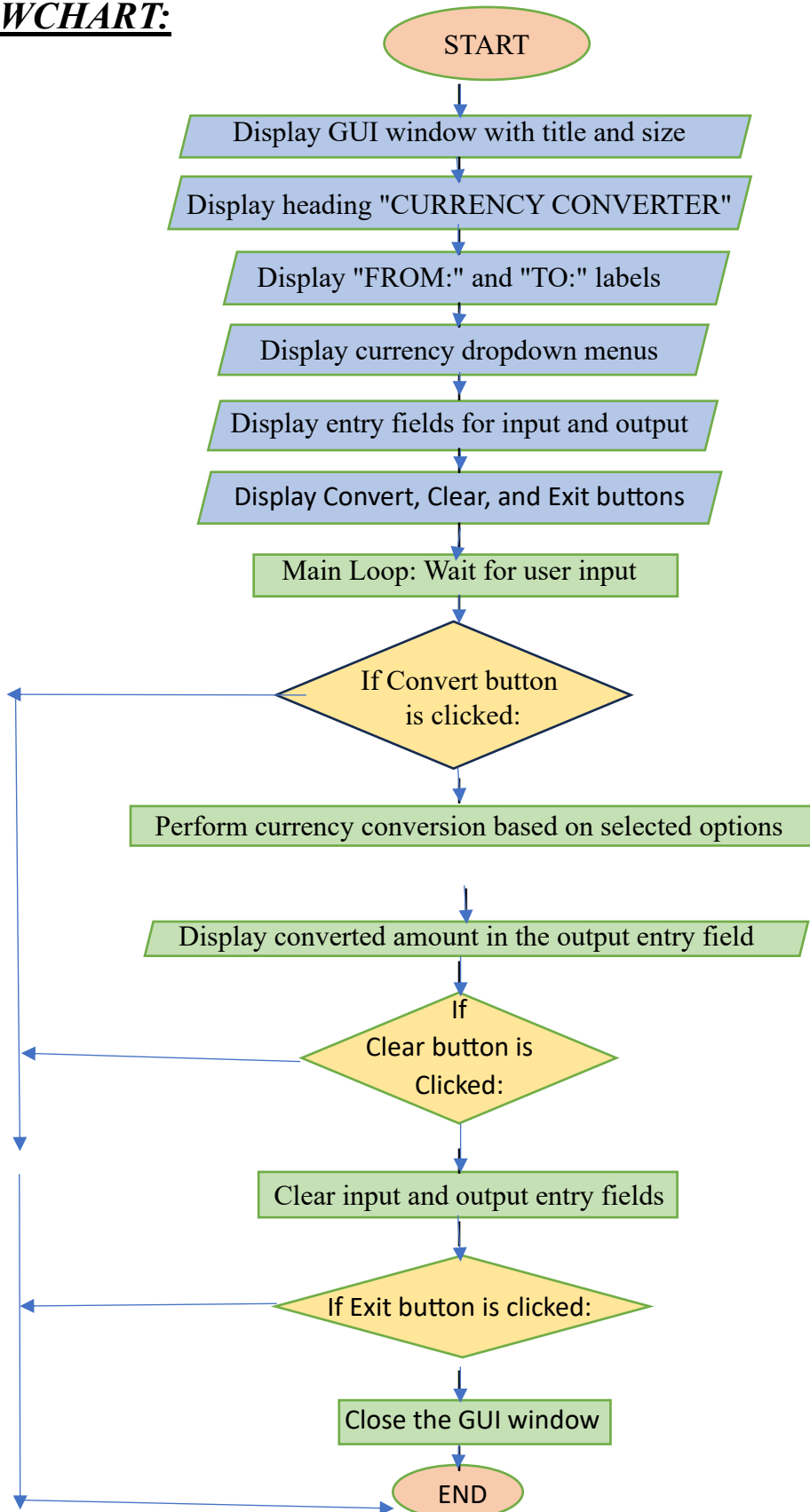
CNo: UIT2023812- SEJAL BARAPATRE

CNo:UIT2023813- SHRUTI BARGALE

CNo: UIT2023814-SHARVARI BOBADE

CNo:UIT2023815- SANYOGITA CHAVAN

MKSSS's Cummins College of Engineering for Women,Pune

FLOWCHART:

START

Display GUI window with title and size

Display heading "CURRENCY CONVERTER"

Display "FROM:" and "TO:" labels

Display currency dropdown menus

Display entry fields for input and output

Display Convert, Clear, and Exit buttons

Main Loop: Wait for user input

If Convert button is clicked:

Perform currency conversion based on selected options

Display converted amount in the output entry field

If Clear button is Clicked:

Clear input and output entry fields

If Exit button is clicked:

Close the GUI window

END

2.0

EXPLANATION:

Imports:

import tkinter as tk: This imports the tkinter module and aliases it as tk for easier reference.

from tkinter import OptionMenu: This imports the OptionMenu class from the tkinter module.

Creating the Main Window:

m = tk.Tk(): This creates the main window of the application.

m.title("Exchange Master"): Sets the title of the window.

m.minsize(500, 300): Sets the minimum size of the window.

m.maxsize(800, 250): Sets the maximum size of the window.

m['bg'] = "powderblue": Sets the background color of the window to powder blue.

Defining Styles:

font_style_heading = ('Algerian', 16, 'bold'): Defines a font style for the heading label.

Font_tuple = ("Comic Sans MS", 15, "bold"): Defines a font style for other labels.

Creating and Placing Widgets:

Labels for "FROM" and "TO" fields: These labels are created using the Label class and placed at specific positions on the window.

conversion_table: This dictionary contains conversion rates between different currencies.

conversion_rate_euro_to_rupees: This variable holds the conversion rate from Euro to Rupees.

Functions:

convert_currency(): This function is called when the "Convert" button is pressed. It retrieves the amount to be converted and the selected currencies, performs the conversion, and displays the result.

clear(): This function clears the input and output fields when the "Clear" button is pressed.

exit_program(): This function exits the program when the "Exit" button is pressed.

Entry Fields:

E1 and E2: These are Entry widgets for input and output respectively, where users can enter the amount to be converted and see the result.

Dropdown Menus:

drop1 and drop2: These are dropdown menus for selecting the "FROM" and "TO" currencies. They are created using the OptionMenu class.

Buttons:

button, clear_button, and exit_button: These buttons trigger the conversion, clearing of fields, and exiting the program respectively.

Mainloop:

m.mainloop(): This starts the tkinter event loop, which listens for events (like button clicks) and updates the GUI accordingly.

3.0

CODE & OUTPUT:

```python
import tkinter as tk              # Importing tkinter module as tk
from tkinter import OptionMenu    # Importing OptionMenu from tkinter

m = tk.Tk()                                    # Creating main window
m.title("Exchange Master")                     # Setting title
m.minsize(500, 300)                            # Setting minimum size
m.maxsize(800, 250)                            # Setting maximum size
m['bg'] = "powderblue"                         # Setting background color

font_style_heading = ('Algerian', 16, 'bold')        # Define the font style for the heading

heading = tk.Label(m, text="CURRENCY CONVERTER", height=1, padx=140, pady=16,anchor="center", font=font_style_heading, bg="mediumpurple")
# Creating and placing heading label
heading.place(x=0, y=0)

Font_tuple = ("Comic Sans MS", 15, "bold")           # Define font style for other labels

# Creating labels for "FROM" and "TO" fields
l1 = tk.Label(text="FROM:", anchor="w", width=11, bg="turquoise", fg="white")
l1.configure(font=Font_tuple)
l1.place(x=110, y=80)

l2 = tk.Label(text="TO:", anchor="w", width=11, bg="turquoise", fg="white")
l2.configure(font=Font_tuple)
l2.place(x=260, y=80)

# Conversion table containing exchange rates
conversion_table = {
    "INR": {
        "INR": 1,
        "CNY": 0.085,
        "USD": 0.012,
        "Euro": 0.011,
        "JPY": 1.84
    },
    "CNY": {
        "INR": 11.75,
        "CNY": 1,
        "USD": 0.14,
        "Euro": 0.13,
        "JPY":21.57
    },
    "USD": {
        "INR": 83.30,
        "CNY": 7.23,
        "USD": 1,
        "Euro": 0.92,
        "JPY": 153.09
    },
    "Euro": {
        "INR": 90.37,
        "CNY": 7.85,
        "USD": 1.08,
        "Euro": 1,
        "JPY":164.31
    },
    "JPY": {
        "INR": 0.54,
        "CNY": 0.047,
        "USD": 0.0065,
        "Euro": 0.0061,
        "JPY": 1
    }
}

conversion_rate_euro_to_rupees = 90.91   # Conversion rate for Euro to Rupees

# Function to convert currency
def convert_currency():
    amount = float(E1.get())              # Get amount from input field
    from_currency = drop1_var.get()       # Get "FROM" currency selection
    to_currency = drop2_var.get()         # Get "TO" currency selection
```

```python
    # Conversion logic
    if from_currency == "Euro" and to_currency == "INR":
        converted_amount = amount * conversion_rate_euro_to_rupees
    elif from_currency == "INR" and to_currency == "Euro":
        converted_amount = amount / conversion_rate_euro_to_rupees
    else:
        conversion_rate = conversion_table[from_currency][to_currency]
        converted_amount = amount * conversion_rate

    E2.delete(0, tk.END)          # Clear output field
    E2.insert(0, str(converted_amount))  # Display result

# Function to clear input and output fields
def clear():
    E1.delete(0, tk.END)
    E2.delete(0, tk.END)

# Function to exit the program
def exit_program():
    m.destroy()

# Entry fields for input and output
E1 = tk.Entry(m, font=("Arial", 10))
E1.place(x=110, y=180)

E2 = tk.Entry(m, font=("Arial", 10))
E2.place(x=260, y=180)

font_style=('CityBlueprint', 16, 'bold')

# Dropdown menu for selecting "FROM" currency
drop1_var = tk.StringVar()
drop1_var.set("Currency")
drop1 = OptionMenu(m, drop1_var, "Euro", "USD", "INR", "CNY","JPY")
drop1.place(x=100, y=130)
drop1.config(font=font_style,width=8,bg="plum")
```

```python
# Dropdown menu for selecting "TO" currency
drop2_var = tk.StringVar()
drop2_var.set("Currency")
drop2 = OptionMenu(m, drop2_var, "Euro", "USD", "INR", "CNY","JPY")
drop2.place(x=250, y=130)
drop2.config(font=font_style,width=8,bg="plum")

# Button to trigger currency conversion
button = tk.Button(m, text="Convert", command=convert_currency,width=12,bg="sandybrown", font=("Arial", 12))
button.place(x=180, y=210)

# Button to clear input and output fields
clear_button = tk.Button(m, text='Clear', command=clear,bg="pink",width=12, font=("Arial", 12))
clear_button.place(x=100, y=250)

# Button to exit the program
exit_button = tk.Button(m, text='Exit', command=exit_program,bg="pink",width=12,font=("Arial", 12))
exit_button.place(x=275, y=250)

m.mainloop()         # Start the GUI event loop
```
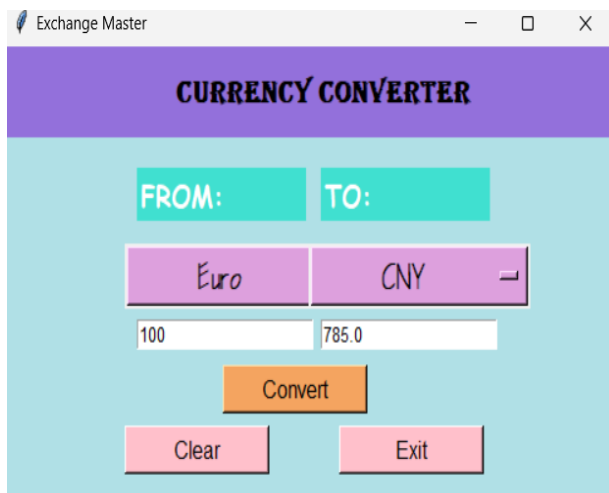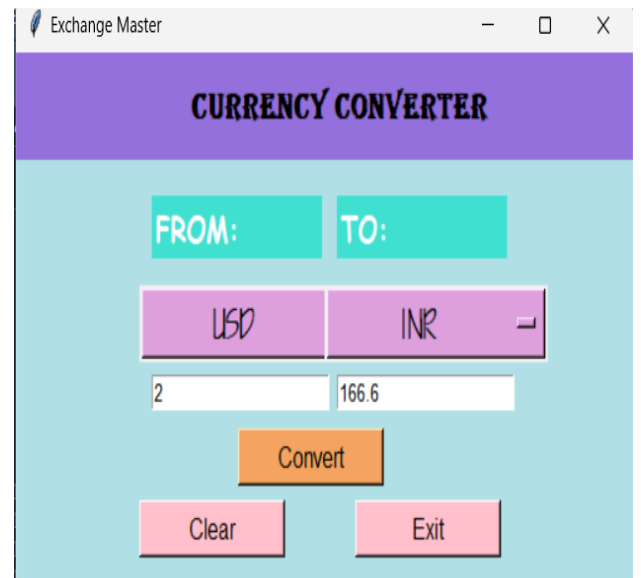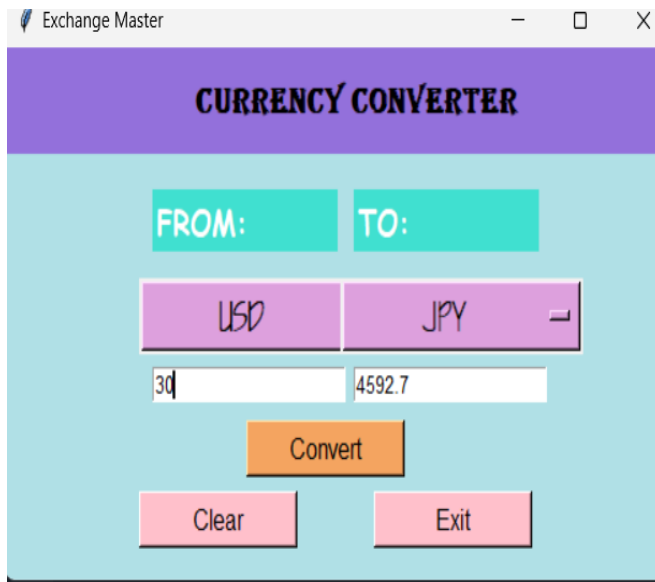
-*REFERENCE:*

1.LINK: https://www.tutorialspoint.com/real-time-currency-converter-using-python-tkinter#:~:text=After%20running%20the%20application%2C%20a,amount%20in%20the%20result%20label

2. TEXTBOOK: Python Programming Using Problem Solving Approach

3. Reference Book: Think Python