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1  ## Python Project on Currency Converter
2
3  import requests
4  from tkinter import *
5  import tkinter as tk
6  from tkinter import ttk
7
8
9  class RealTimeCurrencyConverter():
10     def _init_(self, url):
11         self.data = requests.get(url).json()
12         self.currencies = self.data['rates']
13
14     def convert(self, from_currency, to_currency,
15 amount):
16         initial_amount = amount
17         if from_currency != 'USD':
18             amount = amount / self.currencies[
19 from_currency]
20
21         # limiting the precision to 4 decimal places
22         amount = round(amount * self.currencies[
23 to_currency], 4)
24         return amount
25
26
27 class App(tk.Tk):
28
29     def _init_(self, converter):
30         tk.Tk._init_(self)
31         self.title = 'Currency Converter'
32         self.currency_converter = converter
33
34         # self.configure(background = 'blue')
35         self.geometry("530x200")
36
37         # Label
38         self.intro_label = Label(self, text='Real
39 Time Currency Converter', fg='black', bg='blue',
40 relief=tk.RAISED,
41 borderwidth=3)

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37         self.intro_label.config(font=('Courier', 15,
    'bold'))
38
39         self.date_label = Label(self, text=f" Date :
    {self.currency_converter.data['date']}", relief=tk.
    GROOVE,
40                                     borderwidth=5)
41
42         self.intro_label.place(x=10, y=5)
43         self.date_label.place(x=200, y=50)
44
45         # Entry box
46         valid = (self.register(self.
    restrictNumberOnly), '%d', '%P')
47         self.amount_field = Entry(self, bd=3, relief=
    tk.RIDGE, justify=tk.CENTER, validate='key',
    validatecommand=valid)
48         self.converted_amount_field_label = Label(
    self, text='', fg='black', bg='white', relief=tk.
    RIDGE,
49         justify=tk.CENTER, width=17, borderwidth=3)
50
51         # dropdown
52         self.from_currency_variable = StringVar(self)
53         self.from_currency_variable.set("INR") #
    default value
54         self.to_currency_variable = StringVar(self)
55         self.to_currency_variable.set("USD") #
    default value
56
57         font = ("Courier", 12, "bold")
58         self.option_add('*TCombobox*Listbox.font',
    font)
59         self.from_currency_dropdown = ttk.Combobox(
    self, textvariable=self.from_currency_variable,
60         values=list(self.currency_converter.currencies.keys
    ()), font=font,
61         state='readonly', width=12, justify=tk.CENTER)

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62         self.to_currency_dropdown = ttk.Combobox(
        self, textvariable=self.to_currency_variable,
63         values=list(self.currency_converter.currencies.keys
        ()), font=font,
64         state='readonly', width=12, justify=tk.CENTER)
65
66         # placing
67         self.from_currency_dropdown.place(x=30, y=
        120)
68         self.amount_field.place(x=36, y=150)
69         self.to_currency_dropdown.place(x=340, y=120
        )
70         # self.converted_amount_field.place(x = 346
        , y = 150)
71         self.converted_amount_field_label.place(x=
        346, y=150)
72
73         # Convert button
74         self.convert_button = Button(self, text="
        Convert", fg="black", bg="green", command=self.
        perform)
75         self.convert_button.config(font=('Courier',
        10, 'bold'))
76         self.convert_button.place(x=225, y=135)
77
78         def perform(self):
79             amount = float(self.amount_field.get())
80             from_curr = self.from_currency_variable.get
            ()
81             to_curr = self.to_currency_variable.get()
82
83             converted_amount = self.currency_converter.
            convert(from_curr, to_curr, amount)
84             converted_amount = round(converted_amount, 2
            )
85
86             self.converted_amount_field_label.config(
            text=str(converted_amount))
87

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88     def restrictNumberOnly(self, action, string):
89         regex = re.compile(r"[0-9,]*?(\.)?[0-9,]*$")
90         result = regex.match(string)
91         return (string == "" or (string.count('.')
92 ) <= 1 and result is not None))
92
93
94 if __name__ == '__main__':
95     url = 'https://api.exchangerate-api.com/v4/
96 latest/USD'
97     converter = RealTimeCurrencyConverter(url)
98     App(converter)
99     mainloop()
99
```