Introduction

Name of the Project : **Basics in Python GUI Calculator.**

Welcome to our project, where we introduce you to a fundamental Python GUI application called "Convertor." The primary purpose of this project is to provide essential assistance to users by simplifying unit conversions.

The Convertor application is designed to perform conversions between various units, making it a valuable tool for anyone who needs to quickly convert measurements in everyday life or work. We have organized the conversions into three main categories: Length, Temperature, and Currency.

Within each of these categories, you'll find a range of sub-units that can be seamlessly converted from one to another and vice versa. Whether you need to convert miles to kilometers, Celsius to Fahrenheit, or dollars to euros, Convertor has got you covered. It's a user-friendly solution that takes the hassle out of unit conversions, making your life easier and more efficient. So, let's dive into the world of Convertor and start simplifying your conversion needs today!

• Python Code:

```
import tkinter as tk
from tkinter import ttk
import datetime


def page1():
 notebook.select(tab1)


def page2():
 notebook.select(tab2)


def page3():
 notebook.select(tab3)


def page4():
 notebook.select(tab4)


def update_datetime():
 current_datetime = datetime.datetime.now().strftime("%Y-%m-%d
%H:%M:%S")
 datetime_label.config(text=current_datetime)
 tab1.after(1000, update_datetime)


app = tk.Tk()
app.title("Convertor")
app.resizable(0, 0)
app.geometry("525x400+490+150")


# Create a notebook widget (tabbed interface)
notebook = ttk.Notebook(app)


# =========================Create Page
1============================ tab1 = ttk.Frame(notebook)
notebook.add(tab1, text="Home")

##setting the background color
canvas1 = tk.Canvas(tab1, background="#0072BB")
canvas1.pack(fill="both", expand=True)

# Creating a label to display date and time
datetime_label = tk.Label(canvas1, font=("CourierNew",
16)) datetime_label.place(x=150, y=10)


# Label for introdution
label1 = tk.Label(tab1, text="Welcome to GUI Based
Converter") label1.place(x=175, y=50)
update_datetime()


lab1_label = tk.Label(tab1, text="", bg="red")
lab1_label.place(x=120, y=80)
lab1 = f"""This GUI can be used to convert the unit of 3
```

```
category""" lab1_label.config(text=lab1)

##Button for length
button_length = tk.Button(tab1, text="Length",
command=page2) button_length.place(x=250, y=130)

##Button for temperature
button_temperature = tk.Button(tab1, text="Temperature",
command=page3) button_temperature.place(x=235, y=190)

##Button for currency
button_currency = tk.Button(tab1, text="Currency",
command=page4) button_currency.place(x=250, y=250)

## ========================Create Page
2========================== tab2 = ttk.Frame(notebook)
notebook.add(tab2, text="Page 1")

coloor = tk.Canvas(tab2, background="#FFF700")
coloor.pack(fill="both", expand=True)

c_tab2 = tk.Label(coloor, text="")

##Button to go home page
home_b1 = tk.Button(tab2, text="<-", command=page1)
home_b1.place(x=0, y=0)

title_label = tk.Label(tab2, text="--This Page helps you in Convertion of
Length--")
title_label.place(x=130, y=10)

lscale = ["Meters", "Inches", "Foot", "Centimeter"]
_from = tk.StringVar()

from_label = tk.Label(tab2, text="Select Unit : ")
from_label.place(x=80, y=60)

from_menu = tk.OptionMenu(tab2, _from, *lscale)
from_menu.place(x=180, y=55)

labl = tk.Label(tab2, text="Convert to : ")
labl.place(x=300, y=60)

to_ = tk.StringVar()
to_menu = tk.OptionMenu(tab2, to_, *lscale)
to_menu.place(x=380, y=55)

enter = tk.Label(tab2, text="Enter the Length : ")
enter.place(x=80, y=105)

# Input box widget to get number
val = tk.Entry(tab2)
val.place(x=230, y=105)


def conv():

 frem = _from.get()
 to = to_.get()
 try:

 num_val = val.get()
 num = float(num_val)
 result_text = ""
```

```
 # Meter to *
 if frem == "Meters" and to == "Inches":
 con_num = num * 39.37
 elif frem == "Meters" and to == "Foot":
 con_num = num * 3.28
 elif frem == "Meters" and to == "Centimeter":
 con_num = num * 100

 # Inches to *
 elif frem == "Inches" and to == "Foot":
 con_num = num * 0.08
 elif frem == "Inches" and to == "Centimeter":
 con_num = num * 2.54
 elif frem == "Inches" and to == "Meters":
 con_num = num * 0.02

 # Foot to *
 elif frem == "Foot" and to == "Inches":
 con_num = num * 12
 elif frem == "Foot" and to == "Meters":
 con_num = num * 30.48
 elif frem == "Foot" and to == "Centimeter":
 con_num = num * 2.54

 # Centimeter to *
 elif frem == "Centimeter" and to == "Meters":
 con_num = num * 0.01
 elif frem == "Centimeter" and to == "Foot":
 con_num = num * 0.03
 elif frem == "Centimeter" and to == "Inches":
 con_num = num * 0.39

 else:
 con_num = num

 except ValueError:
 result_label.config(text="Enter a valid number : ")

 result_text = f"{num} {frem} is equal to {con_num:.2f} {to}."
result_label.config(text=result_text)


result_label = tk.Label(tab2, text="", fg="#964B00",
font=("CourierNew", 18))
result_label.place(x=10, y=200)


# Convertion Button
convbut = tk.Button(tab2, text="Convert",
command=conv) convbut.place(x=230, y=150)

# ============================Create Page
3============================ tab3 = ttk.Frame(notebook)
notebook.add(tab3, text="Page 2")
##Background Color
coloor = tk.Canvas(tab3, background="#00F700")
coloor.pack(fill="both", expand=True)
c_tab3 = tk.Label(coloor, text="")

##Button to go home page
home_b2 = tk.Button(tab3, text="<-", command=page1)
home_b2.place(x=0, y=0)
```

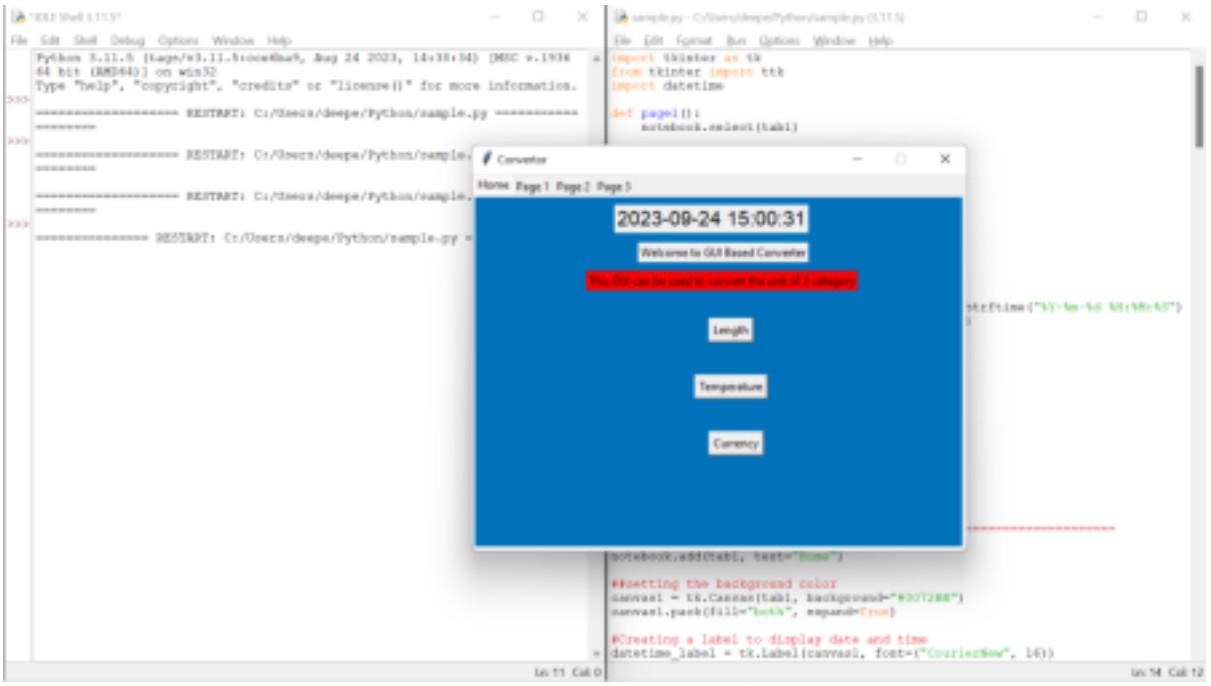
```
title_label = tk.Label(
 tab3, text="--This Page helps you in Convertion of Temperature--" )
title_label.place(x=130, y=10)

Tscale = ["° Celsius", "Kelvin", "Fahrenheit"]


from_label1 = tk.Label(tab3, text="Select Unit : ")
from_label1.place(x=80, y=60)

_tfrom = tk.StringVar()
Tfrom_menu = tk.OptionMenu(tab3, _tfrom, *Tscale)
Tfrom_menu.place(x=180, y=55)

Tlabl = tk.Label(tab3, text="Convert to : ")
Tlabl.place(x=280, y=60)

Tto_ = tk.StringVar()
Tto_menu = tk.OptionMenu(tab3, Tto_, *Tscale)
Tto_menu.place(x=380, y=55)

Tenter = tk.Label(tab3, text="Enter the Temperature : ")
Tenter.place(x=80, y=105)

# Input box widget to get number
T_val = tk.Entry(tab3)
T_val.place(x=230, y=105)


def conv():

 T_frem = _tfrom.get()
 T_to = Tto_.get()
 try:

 num_valu = T_val.get()
 temp_val = float(num_valu)
 resul_text = ""

 # Celsius to *
 if T_frem == "° Celsius" and T_to == "Kelvin":
 temp = temp_val + 273.15 ##0°C + 273.15
 elif T_frem == "° Celsius" and T_to == "Fahrenheit":  temp =
(temp_val * (1.8)) + 32 ##(0°C x 9/5) + 32

 # Kelvin to *
 elif T_frem == "Kelvin" and T_to == "Fahrenheit":  temp = (temp_val -
273.15) * (1.8) + 32 ##(0K - 273.15) x 9/5  + 32
 elif T_frem == "Kelvin" and T_to == "° Celsius":
 temp = temp_val - 273.15 ##0K - 273.15

 # Fahrenheit to *
 elif T_frem == "Fahrenheit" and T_to == "° Celsius":  temp = (temp_val -
32) * (0.56) ##(0°F - 32) x 5/9  elif T_frem == "Fahrenheit" and T_to ==
"Kelvin":  temp = (temp_val - 32) * (0.56) + 273.15 ##(0°F - 32) x 5/9 +
273.15

 else:
 temp = temp_val

 except ValueError:
 result_label.config(text="Enter a valid number")
```

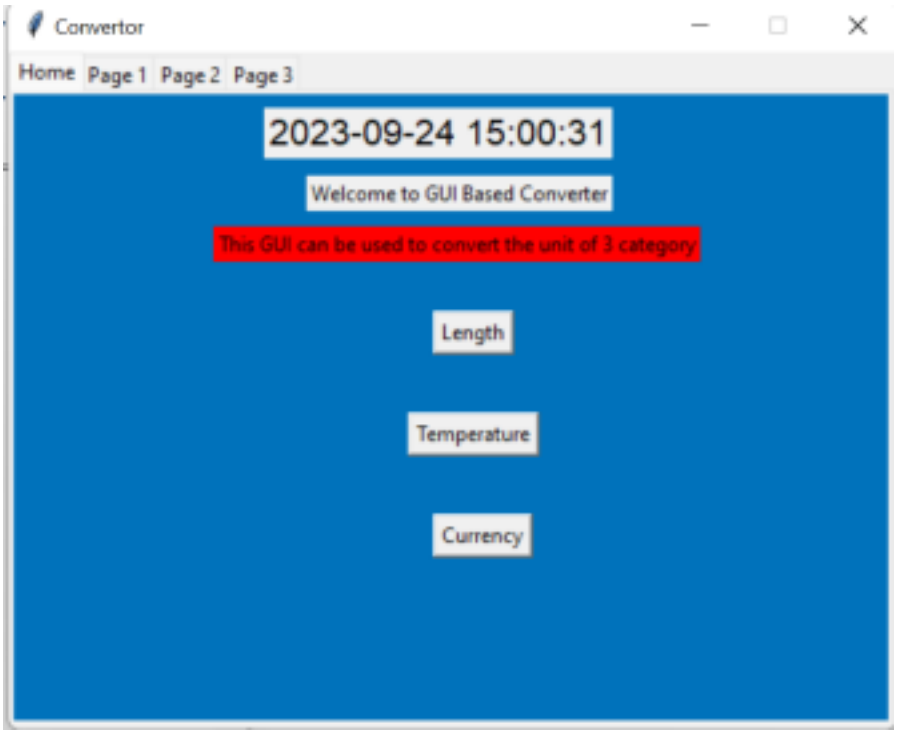
```
 resul = f"{temp_val} {T_frem} is equal to {temp:.2f} {T_to}."
resul_label.config(text=resul)


resul_label = tk.Label(tab3, text="", fg="#8F00FF",
font=("CourierNew", 18))
resul_label.place(x=10, y=200)


# Convertion Button
convbut = tk.Button(tab3, text="Convert", command=conv)
convbut.place(x=200, y=150)

# ============================Create Page
4========================== tab4 = ttk.Frame(notebook)
notebook.add(tab4, text="Page 3")

##Set Background Color
page_color = tk.Canvas(tab4, background="#FF2700")
page_color.pack(fill="both", expand=True)
tab_color = tk.Label(page_color, text="")

##Button to go home page
home_b3 = tk.Button(tab4, text="<-", command=page1)
home_b3.place(x=0, y=0)

##Page Title
label4 = tk.Label(tab4, text="--This Page helps you in Convertion of
Currency--")
label4.place(x=130, y=10)

##List of Currncy
c_list = ["₹ INR", "$ USD Dollor", "¥ Yen", "€ Euro", "₩ Won"]


##First Label for dropbox
f1_label = tk.Label(tab4, text="Select Currency :")
f1_label.place(x=80, y=60)

##First Dropbox,
currenc1 = tk.StringVar()
drop_box1 = tk.OptionMenu(tab4, currenc1, *c_list)
drop_box1.place(x=180, y=55)

##Second Label for dropbox
f2_label = tk.Label(tab4, text="Convert to : ")
f2_label.place(x=300, y=60)

##Second Dropbox,
currenc2 = tk.StringVar()
drop_box2 = tk.OptionMenu(tab4, currenc2,
*c_list) drop_box2.place(x=380, y=55)

##Label for input box
curr_labl = tk.Label(tab4, text="Enter the Value
:") curr_labl.place(x=80, y=105)

##Input box to get value
cur_val = tk.Entry(tab4)
cur_val.place(x=200, y=105)


def currecy():
 in_curr = currenc1.get()
```

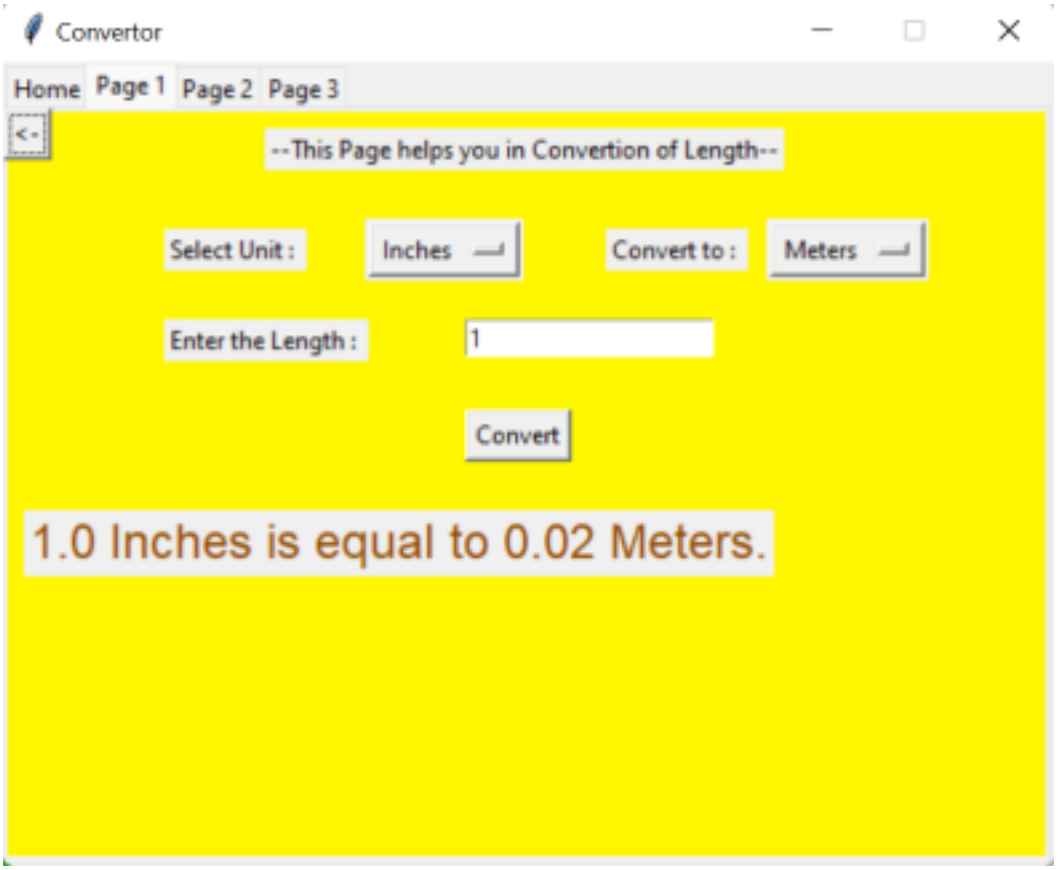
```
 out_curr = currenc2.get()
 try:
 curny = cur_val.get()
 inpt1 = float(curny)
 r_value = ""

 ##INR -> *
 if in_curr == "₹ INR" and out_curr == "$ USD Dollor":
conv_curr = inpt1 * 0.012 ## 1 -> 0.012  elif in_curr == "₹
INR" and out_curr == "¥ Yen":  conv_curr = inpt1 * 1.79 ## 1
-> 1.79  elif in_curr == "₹ INR" and out_curr == "€ Euro":
conv_curr = inpt1 * 0.011 ## 1 -> 0.011  elif in_curr == "₹
INR" and out_curr == "₩ Won":  conv_curr = inpt1 * 16.07 ##
1 -> 16.07

 ##USD Dollor --> *
 elif in_curr == "$ USD Dollor" and out_curr == "₹ INR":
conv_curr = inpt1 * 83.10 ## 1 -> 83.10  elif in_curr == "$
USD Dollor" and out_curr == "¥ Yen":
  conv_curr = inpt1 * 148.28 ## 1 -> 148.28  elif in_curr == "$
USD Dollor" and out_curr == "€ Euro":  conv_curr = inpt1 * 0.94
## 1 -> 0.94  elif in_curr == "$ USD Dollor" and out_curr == "₩
Won":  conv_curr = inpt1 * 1335.65 ## 1 -> 1335.65

 ##Yen ---> *
 elif in_curr == "¥ Yen" and out_curr == "₹ INR":  conv_curr =
inpt1 * 0.56 ## 1 -> 0.56  elif in_curr == "¥ Yen" and
out_curr == "$ USD Dollor":  conv_curr = inpt1 * 0.0067 ## 1
-> 0.0067  elif in_curr == "¥ Yen" and out_curr == "€ Euro":
conv_curr = inpt1 * 0.0063 ## 1 -> 0.0063  elif in_curr == "¥
Yen" and out_curr == "₩ Won":  conv_curr = inpt1 * 9.01 ## 1
-> 9.01

 ##Euro ----> *
 elif in_curr == "€ Euro" and out_curr == "₹ INR":  conv_curr =
inpt1 * 88.69 ## 1 -> 88.69  elif in_curr == "€ Euro" and
out_curr == "¥ Yen":  conv_curr = inpt1 * 158.27 ## 1 -> 158.27
elif in_curr == "€ Euro" and out_curr == "$ USD Dollor":
conv_curr = inpt1 * 1.07 ## 1 -> 1.07
 elif in_curr == "€ Euro" and out_curr == "₩ Won":
conv_curr = inpt1 * 1, 425.48 ## 1 -> 1,425.48

 ##Won -----> *
 elif in_curr == "₩ Won" and out_curr == "₹ INR":
conv_curr = inpt1 * 0.062 ## 1 -> 0.062
 elif in_curr == "₩ Won" and out_curr == "¥ Yen":
conv_curr = inpt1 * 0.11 ## 1 -> 0.11
 elif in_curr == "₩ Won" and out_curr == "€ Euro":  conv_curr
= inpt1 * 0.00070 ## 1 -> 0.00070  elif in_curr == "₩ Won" and
out_curr == "$ USD Dollor":  conv_curr = inpt1 * 0.00075 ## 1
-> 0.00075

 except ValueError:
 rs_label.config(text="Enter a valid number")

 reslt = f"{inpt1} {in_curr} is equal to {conv_curr:.4f} {out_curr}."
rs_label.config(text=reslt)


rs_label = tk.Label(tab4, text="", fg="#d3806f", font=("CourierNew",
18)) rs_label.place(x=10, y=200)

# Submit Button
sub_curr = tk.Button(tab4, text="Convert",
```

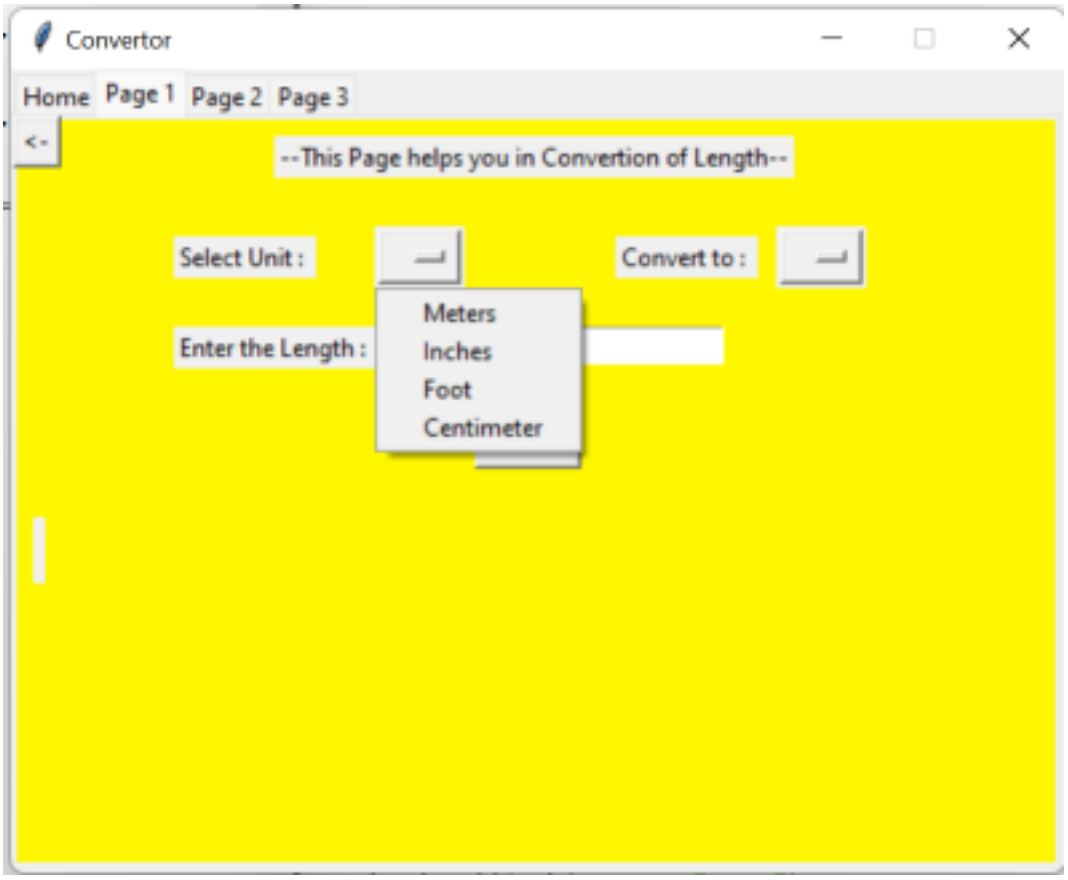
```
command=currecy) sub_curr.place(x=200, y=150)

notebook.pack(fill="both", expand=True)
page1() # Start on Page 1
app.mainloop()
```

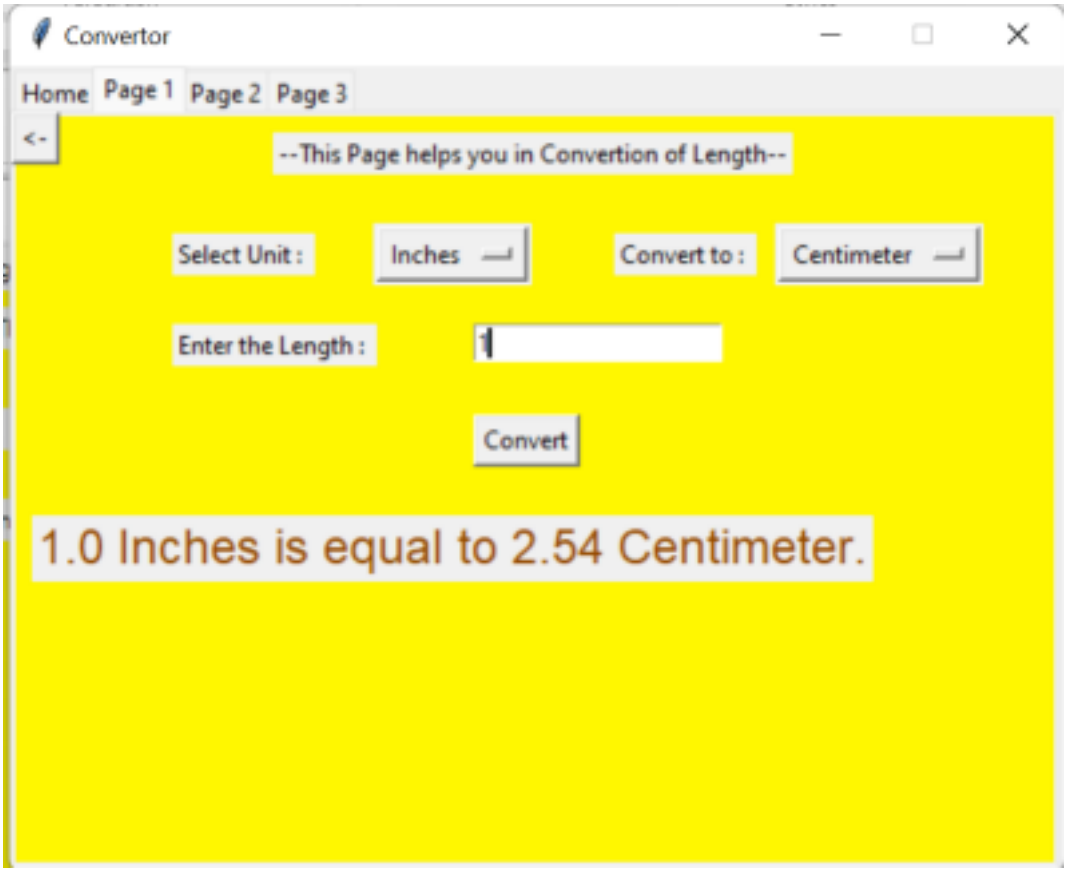
Screenshot of the Output:

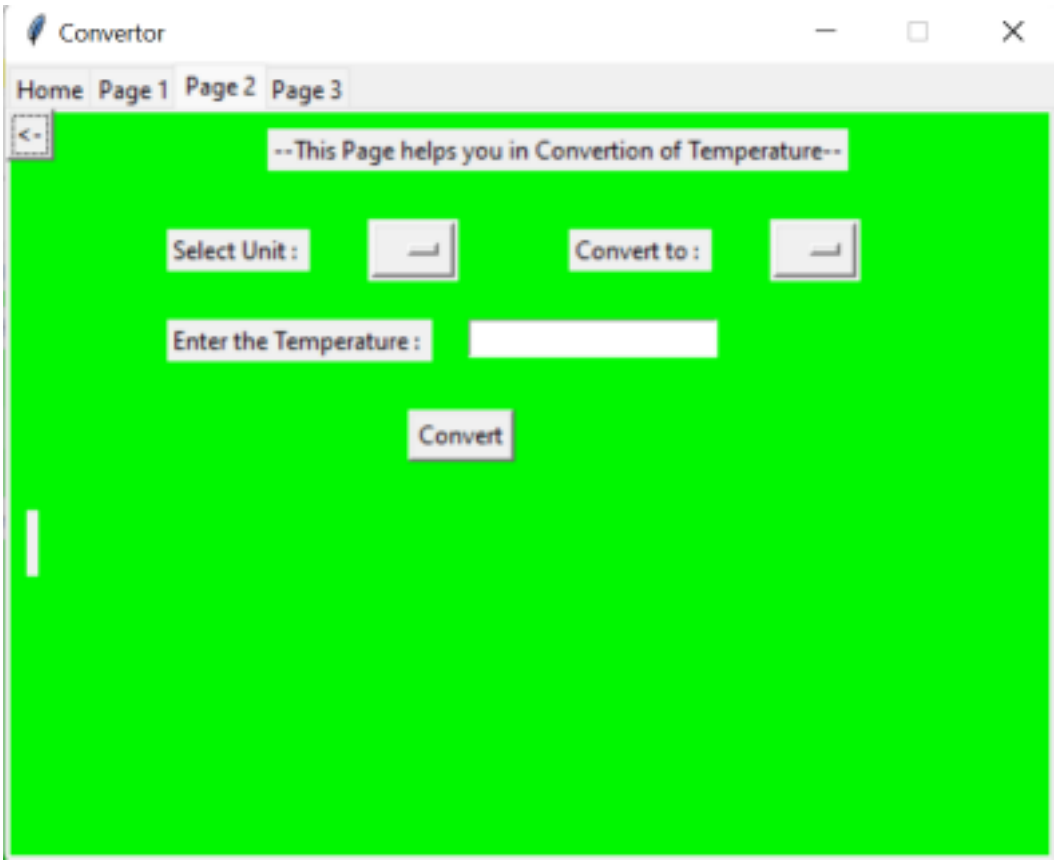


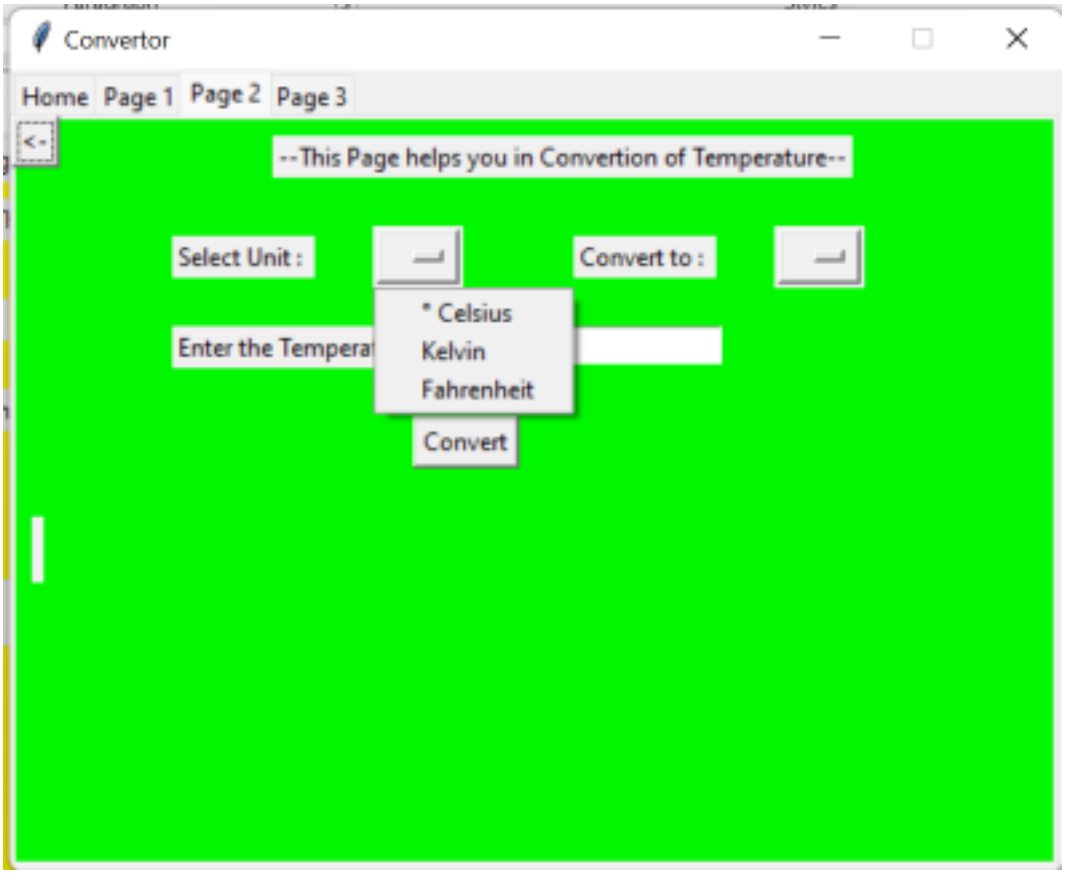


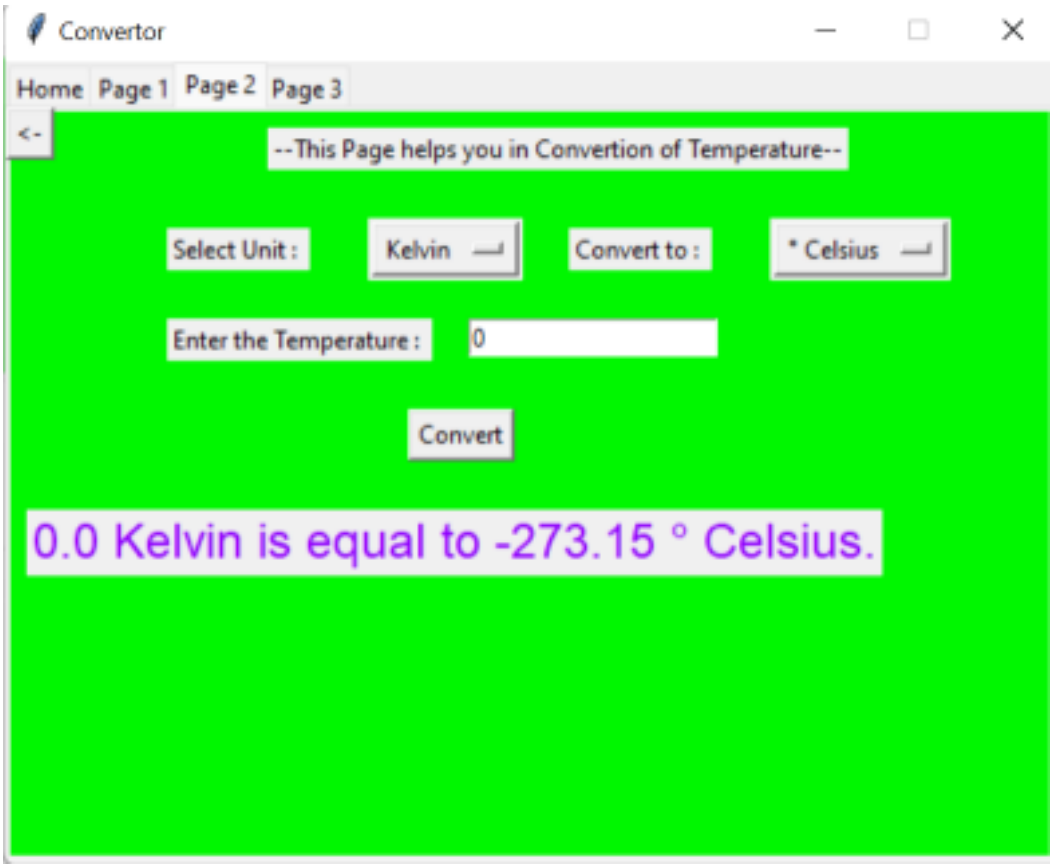

Convertor
Home
Page 1
Page 2
Page 3
<-
--This Page helps you in Convertion of Length--
Select Unit :
Inches
Convert to :
Meters
Enter the Length :
1
Convert
1.0 Inches is equal to 0.02 Meters.

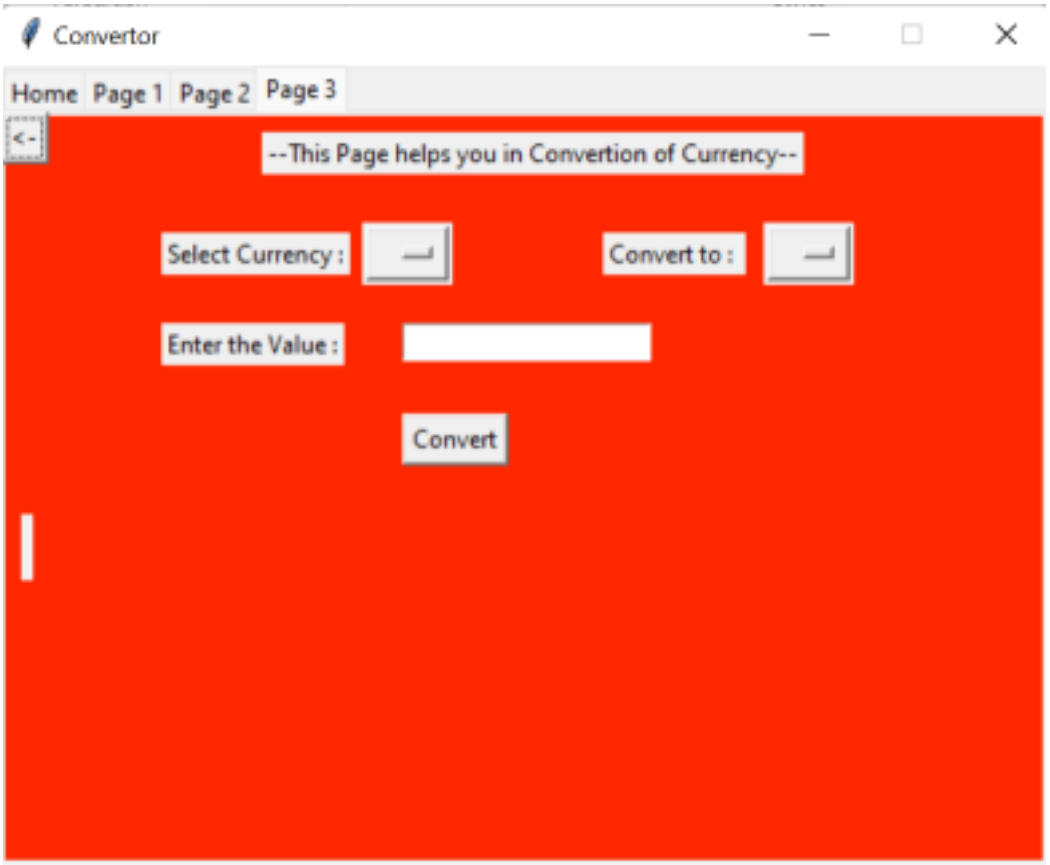

Convertor
Home
Page 1
Page 2
Page 3
<-
--This Page helps you in Convertion of Length--
Select Unit :
Convert to :
Enter the Length :
Meters
Inches
Foot
Centimeter

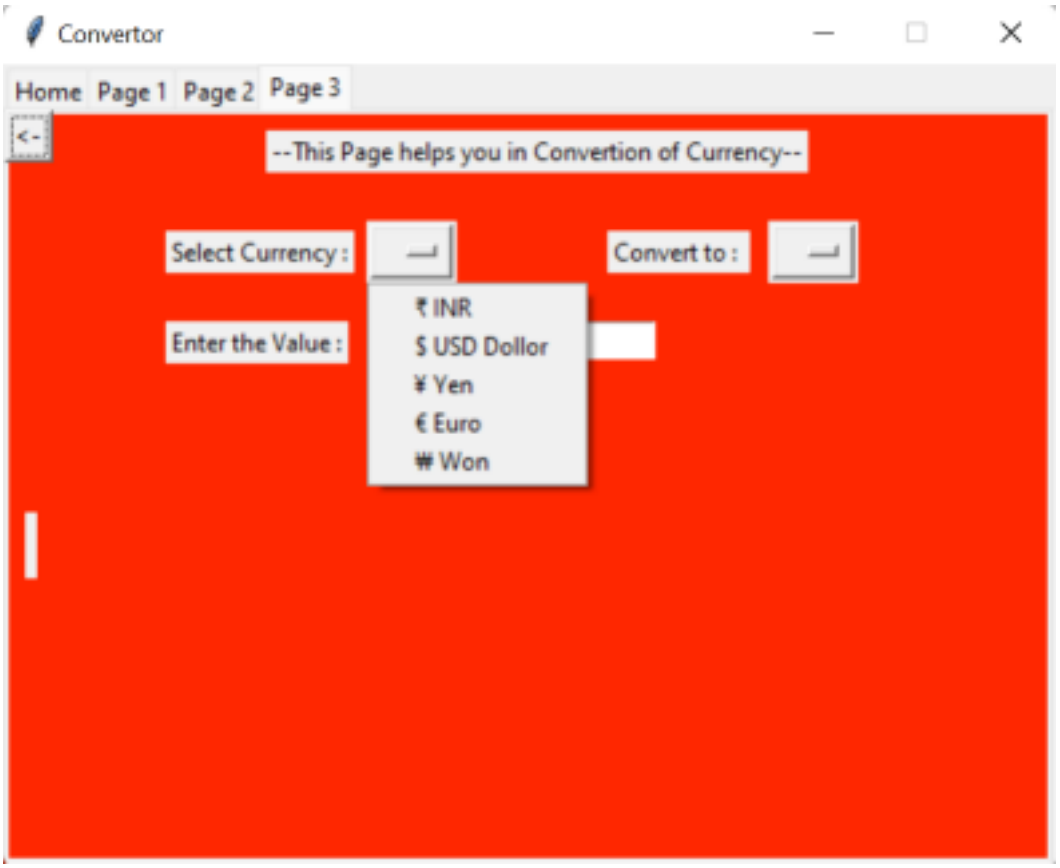

Convertor
Home
Page 1
Page 2
Page 3
<-
--This Page helps you in Convertion of Length--
Select Unit :
Inches
Convert to :
Centimeter
Enter the Length :
1
Convert
1.0 Inches is equal to 2.54 Centimeter.

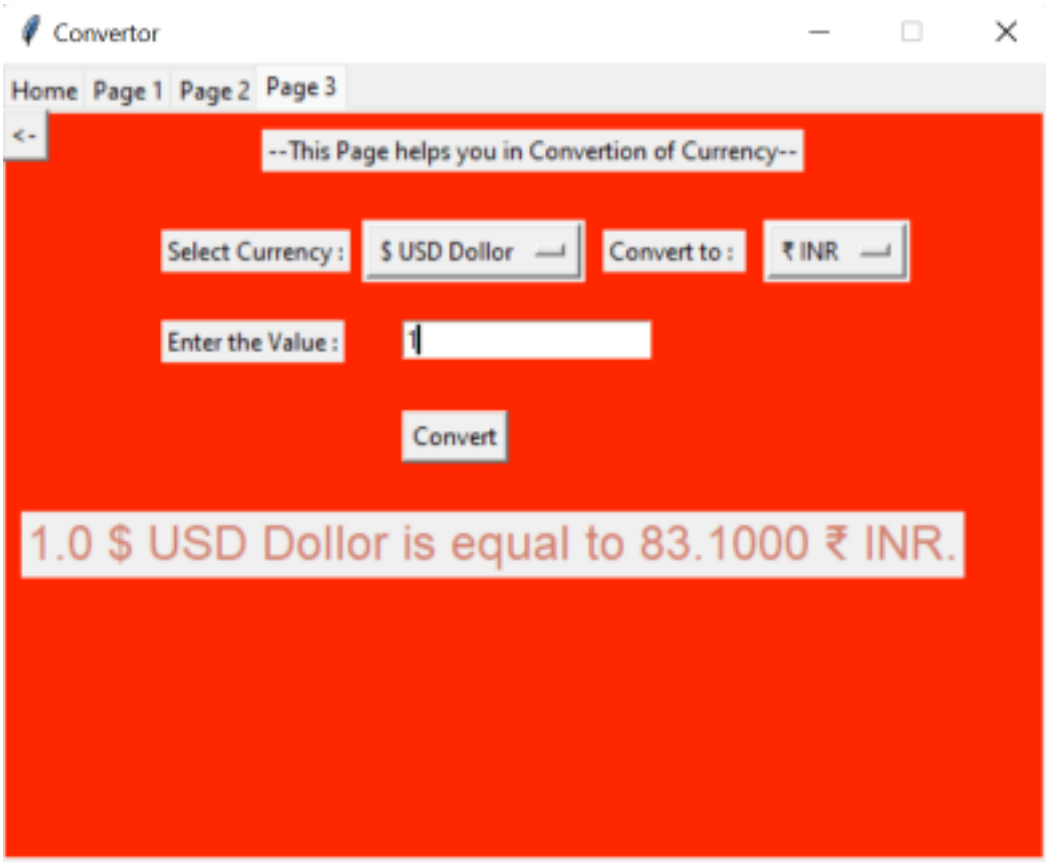

Convertor
Home
Page 1
Page 2
Page 3
<-
--This Page helps you in Convertion of Temperature--
Select Unit :
Convert to :
Enter the Temperature :
Convert


Convertor
Home
Page 1
Page 2
Page 3
<-
--This Page helps you in Convertion of Temperature--
Select Unit :
Convert to :
* Celsius
Kelvin
Fahrenheit
Enter the Temperat
Convert


Convertor
Home
Page 1
Page 2
Page 3
<-
--This Page helps you in Convertion of Temperature--
Select Unit :
Kelvin
Convert to :
* Celsius
Enter the Temperature :
0
Convert
0.0 Kelvin is equal to -273.15 ° Celsius.


Convertor
Home
Page 1
Page 2
Page 3
<-
--This Page helps you in Convertion of Currency--
Select Currency :
Convert to :
Enter the Value :
Convert


Convertor
Home
Page 1
Page 2
Page 3
<-
--This Page helps you in Convertion of Currency--
Select Currency :
Convert to :
Enter the Value :
₹ INR
$ USD Dollor
¥ Yen
€ Euro
₩ Won



References:

youtube.com