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Final Project

IS – 411

**Description:**

For my final project, I decided to create a GPA calculator for Master’s students here at DePaul. A full time student here at DePaul, usually takes two courses to be full time. With this being stated our program takes two entries in a GUI, which are strings converted to integers and goes through an if loop, which is inside a while true loop, in order to match up the percentage of the grades obtained, with the GPA.

* The student will run the program and a GUI which states: “Let’s calculate your Masters GPA!”, comes up.
* The program asks the user: "What was your first final percentage grade?” and "What was your second final percentage grade?”.
* The student will enter two entries, their first and second percentage grade, then the program will activate our retrieve\_gpa function, once the button, which states “Click here for your GPA!", is clicked.
* The program will first match up the first percent\_grade entry and the second percent\_grade entry, it will add the two returned GPA’s and divide them by two in order to get an average final GPA.
* The program will then create a new GUI window, which will convert the final GPA integer to a string in order to state to the user: “Your GPA is \_.”.
* The user can then enter two new percent\_grade entries in order to plan to get the highest final GPA.
* For further explanation, I have comment for each piece of the code down below.

**Source Code:**

from tkinter import \*

# from tkinter we are importing everything.

import math

# in order to use mathematical functions we are importing math.

window = Tk()

window.title("Lets Calculate your Masters GPA!")

# we are setting our root to window to tk and our title for window.

lbl1 = Label(window,text="What was your first final percentage grade?")

# we are creating a new label which will ask the user for the first

# percentage grade.

lbl1.pack()

# we are centering our label on top of the first entry and below the first label.

e1 = Entry(window, textvariable = StringVar())

# we are prompting the user for the first entry which will be a string variable.

e1.pack()

# we are centering or packing the first entry.

lbl2 = Label(window,text="What was your second final percentage grade?")

# we are creating a new label which will ask the user for the second

# percentage grade.

lbl2.pack()

# we are centering the label below the first entry.

e2 = Entry(window,textvariable = StringVar())

# we are prompting the user for the second entry which will be a string variable.

e2.pack()

# we are packing or centering our second entry below our second label.

def retrieve\_gpa():

Answer = float((percent\_grade(e1.get()) + percent\_grade(e2.get()))/2)

new\_window = Toplevel(window)

new\_window.title("GPA is down below!")

display\_gpa = Label(new\_window, text = "")

display\_gpa.configure(text = "Your GPA is " + str(Answer) + ".")

display\_gpa.pack()

# here our code takes both floats percentage grade entries and divides them by two

# to obtain our final gpa.

# then we create a new window with our gpa converted to a string and

# packing or centering the whole string in the new window.

def percent\_grade(grades):

# this function of our program converts grade to gpa points

# we first set our variable through a if loop which is inside a while loop

# we set the while loop to true and anything else will return nothing.

while True:

if float(grades) >= 93 and float(grades) <=110:

return 4.0

elif float(grades) >=90 and float(grades) <=93:

return 3.7

elif float(grades) >=87 and float(grades) <=90:

return 3.3

elif float(grades) >=83 and float(grades) <=87:

return 3.0

elif float(grades) >=80 and float(grades) <=83:

return 2.7

elif float(grades) >=77 and float(grades) <=80:

return 2.3

elif float(grades) >=73 and float(grades) <=77:

return 2.0

elif float(grades) >=70 and float(grades) <=73:

return 1.7

elif float(grades) >=67 and float(grades) <=70:

return 1.3

elif float(grades) >=65 and float(grades) <=67:

return 1.0

return 0.0

return None

btn = Button(window, text ="Click here for your GPA!", command=retrieve\_gpa)

# we are creating a new button within the window or root, which will state

# click here for your gpa, after the button is click it will refer the defined

# function retrieve gpa, which will accumulate our final gpa.

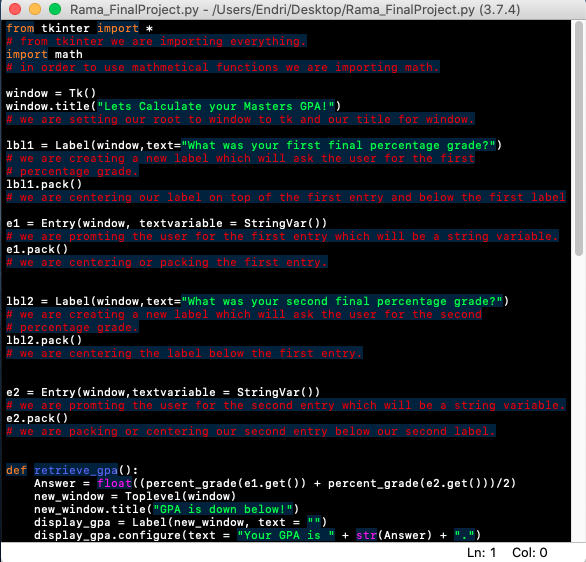
btn.pack()

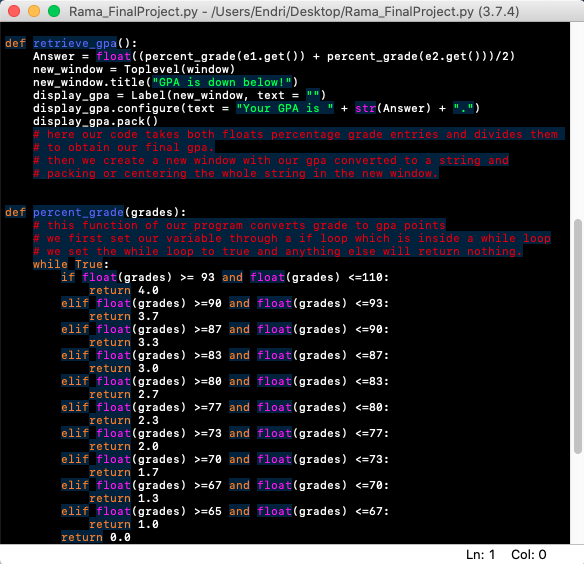
# we are packing or centering our button.

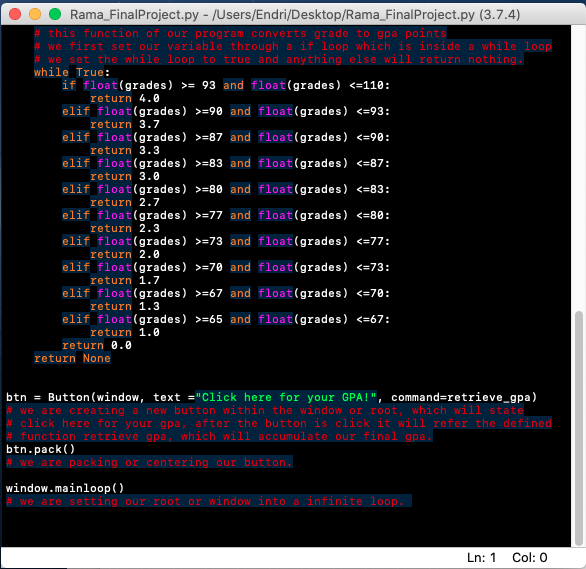
window.mainloop()

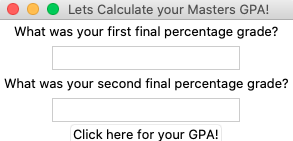
# we are setting our root or window into an infinite loop.

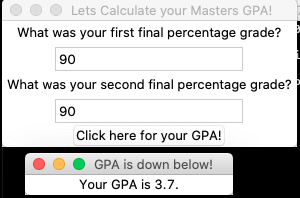
**Screenshot of our Application down below:**

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