

FINALS TASK 5. Designing a Tkinter Window and adding events

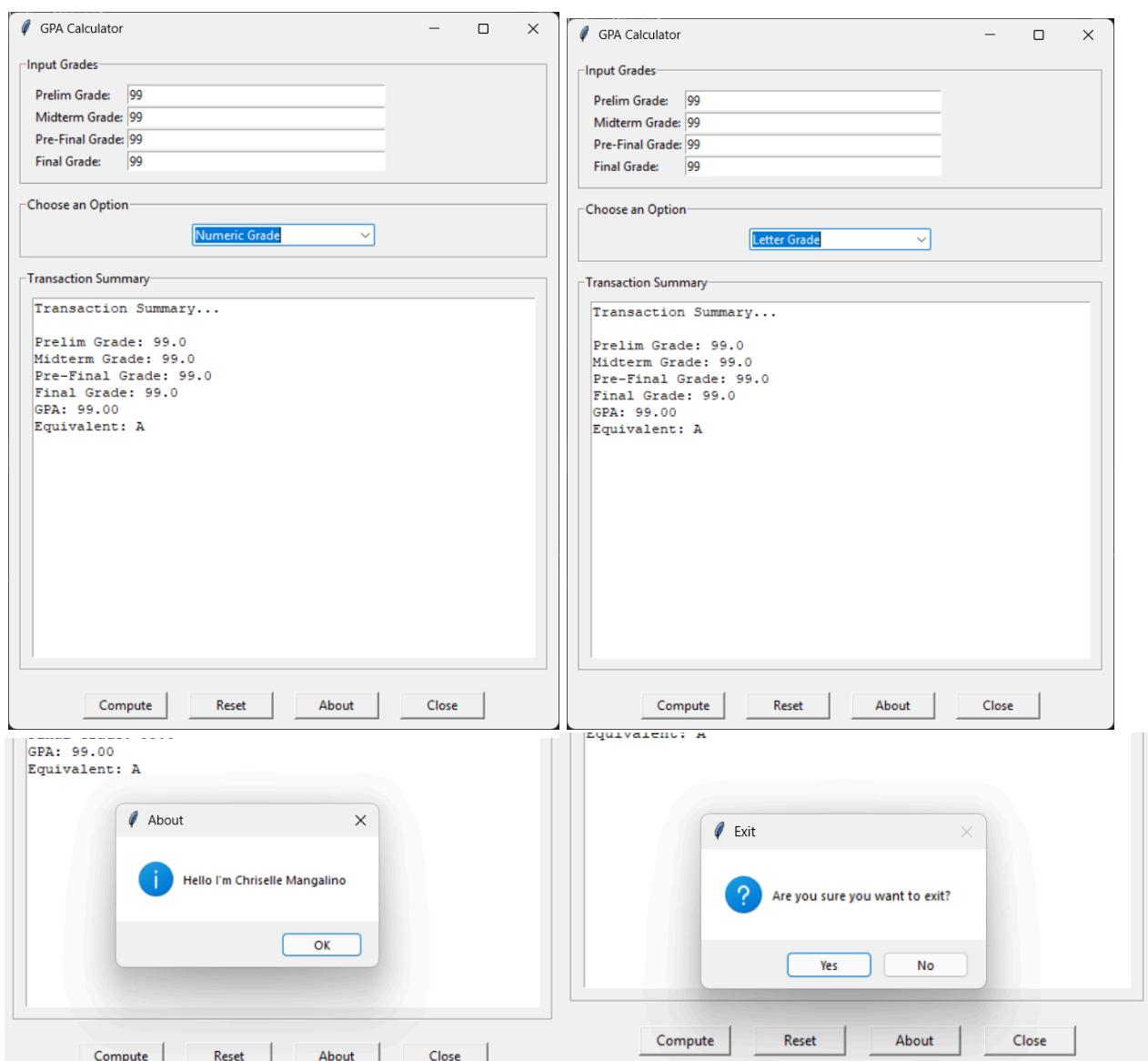
PART 1. Grading PROGRAM

1. Design the window below.
2. The program should allow the user to input Prelim, Midterm, Pre Finals and Final Grade (Compute GPA by adding the Prelim, Midterms, (50% of Pre-Finals and 50% of the Final Grade) then divide by 3)
3. The user should be able to select which equivalent grade to view using Combo Box: (Letter Grade or NUMERIC GRADE)
4. Compute Button should compute the GPA and display the appropriate grade equivalent and other info in a Textarea (Text) as shown in the sample output
5. The Reset Button should clear the Radio Button Selection and the Text field entries should be cleared as well
6. The About button should display a dialog with the message: "Hello I'm your Name"

Chriselle Mangalino

C203

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```
import tkinter as tk
from tkinter import messagebox, ttk
```

```
# Letter Grade Table
def get_letter_grade(score):
    if 96 <= score <= 100:
        return "A"
    elif 93 <= score <= 95:
        return "A+"
    elif 88 <= score <= 92:
        return "B"
    elif 83 <= score <= 87:
        return "B-"
    elif 78 <= score <= 82:
        return "C"
    elif 76 <= score <= 77:
        return "D"
    elif 65 <= score <= 74:
        return "F"
    else:
        return "N/A"
```

```
# Numeric Grade Table
def get_numeric_grade(score):
    if 97 <= score <= 100:
        return "1.00"
    elif 94 <= score <= 96:
        return "1.25"
    elif 90 <= score <= 93:
        return "1.50"
    elif 87 <= score <= 89:
        return "1.75"
    elif 83 <= score <= 86:
        return "2.00"
    elif 80 <= score <= 82:
        return "2.25"
    elif 77 <= score <= 79:
        return "2.50"
    elif 75 <= score <= 76:
        return "2.75"
    elif 70 <= score <= 74:
        return "3.00"
```

```
elif 65 <= score <= 69:  
    return "5.00"  
else:  
    return "N/A"  
  
# Compute GPA  
def compute_gpa():  
    try:  
        prelim = float(entry_prelim.get())  
        mid = float(entry_mid.get())  
        prefinal = float(entry_prefinal.get())  
        final = float(entry_final.get())  
    except:  
        messagebox.showerror("Error", "Please enter valid numbers.")  
        return  
  
    # GPA formula  
    gpa = (prelim + mid + (0.5 * prefinal) + (0.5 * final)) / 3  
  
    # Check drop down selection  
    choice = combo_choice.get()  
  
    if choice == "":  
        messagebox.showwarning("Warning", "Please select an option.")  
        return  
  
    # Get correct grade equivalent  
    if choice == "Letter Grade":  
        equiv = get_letter_grade(gpa)  
    else:  
        equiv = get_numeric_grade(gpa)  
  
    # Output to text area  
    text_output.delete("1.0", tk.END)  
    text_output.insert(tk.END, "Transaction Summary...\n\n")  
    text_output.insert(tk.END, f"Prelim Grade: {prelim}\n")  
    text_output.insert(tk.END, f"Midterm Grade: {mid}\n")  
    text_output.insert(tk.END, f"Pre-Final Grade: {prefinal}\n")  
    text_output.insert(tk.END, f"Final Grade: {final}\n")  
    text_output.insert(tk.END, f"GPA: {gpa:.2f}\n")  
    text_output.insert(tk.END, f"Equivalent: {equiv}\n")
```

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C203

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```
# Reset  
def reset_all():
```

```
    entry_prelim.delete(0, tk.END)  
    entry_mid.delete(0, tk.END)  
    entry_prefinal.delete(0, tk.END)  
    entry_final.delete(0, tk.END)  
    combo_choice.set("")  
    text_output.delete("1.0", tk.END)
```

```
# About
```

```
def show_about():  
    messagebox.showinfo("About", "Hello I'm Chriselle Mangalino")
```

```
# Close
```

```
def close_app():  
    ask = messagebox.askyesno("Exit", "Are you sure you want to exit?")  
    if ask:  
        window.destroy()
```

```
# Main Window
```

```
window = tk.Tk()  
window.title("GPA Calculator")  
window.geometry("520x650")
```

```
# Input Frame
```

```
frame_input = tk.LabelFrame(window, text="Input Grades", padx=10, pady=10)  
frame_input.pack(fill="x", padx=10, pady=10)
```

```
tk.Label(frame_input, text="Prelim Grade:").grid(row=0, column=0, sticky="w")  
entry_prelim = tk.Entry(frame_input, width=40)  
entry_prelim.grid(row=0, column=1)
```

```
tk.Label(frame_input, text="Midterm Grade:").grid(row=1, column=0, sticky="w")  
entry_mid = tk.Entry(frame_input, width=40)  
entry_mid.grid(row=1, column=1)
```

```
tk.Label(frame_input, text="Pre-Final Grade:").grid(row=2, column=0, sticky="w")  
entry_prefinal = tk.Entry(frame_input, width=40)  
entry_prefinal.grid(row=2, column=1)
```

```
tk.Label(frame_input, text="Final Grade:").grid(row=3, column=0, sticky="w")
```

```
entry_final = tk.Entry(frame_input, width=40)
entry_final.grid(row=3, column=1)

# Combo Box Frames
frame_combo = tk.LabelFrame(window, text="Choose an Option", padx=10, pady=10)
frame_combo.pack(fill="x", padx=10)

combo_choice = ttk.Combobox(frame_combo, values=["Letter Grade", "Numeric Grade"],
width=25)
combo_choice.pack()

# Output Frames
frame_output = tk.LabelFrame(window, text="Transaction Summary", padx=10, pady=10)
frame_output.pack(fill="both", expand=True, padx=10, pady=10)

text_output = tk.Text(frame_output, height=13)
text_output.pack(fill="both", expand=True)

# Buttons
frame_buttons = tk.Frame(window)
frame_buttons.pack(pady=10)

tk.Button(frame_buttons, text="Compute", width=10, command=compute_gpa).grid(row=0,
column=0, padx=10)
tk.Button(frame_buttons, text="Reset", width=10, command=reset_all).grid(row=0, column=1,
padx=10)
tk.Button(frame_buttons, text="About", width=10, command=show_about).grid(row=0,
column=2, padx=10)
tk.Button(frame_buttons, text="Close", width=10, command=close_app).grid(row=0, column=3,
padx=10)

if __name__ == '__main__':
    window.mainloop()
```