Name: Quiambao, Arianna Marie B. Date: 11/20/25 Section: C203 7OOP

## 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”

| Grade Letter Equivalent | Grade Numeric Equivalent |
|---|---|
| 96 - 100 - A<br>93 - 94 – A+<br>88 – 92 - B<br>83 -87 – B-<br>78 -82 – C<br>76-77 – D<br>75 - E<br>65-74 - F | 97 - 100 – 1.0<br>94 - 96 – 1.25<br>90 – 93 – 1.50<br>87 - 89 – 1.75<br>84 -86 – 2.0<br>81-83 – 2.25<br>78-80 – 2.50<br>76 – 79- 2.75<br>75 – 3.0<br>65-74 – 5.0 |

Follow this table of equivalents for LETTER and NUMERIC GRADE

**Sample GUI Design below:**

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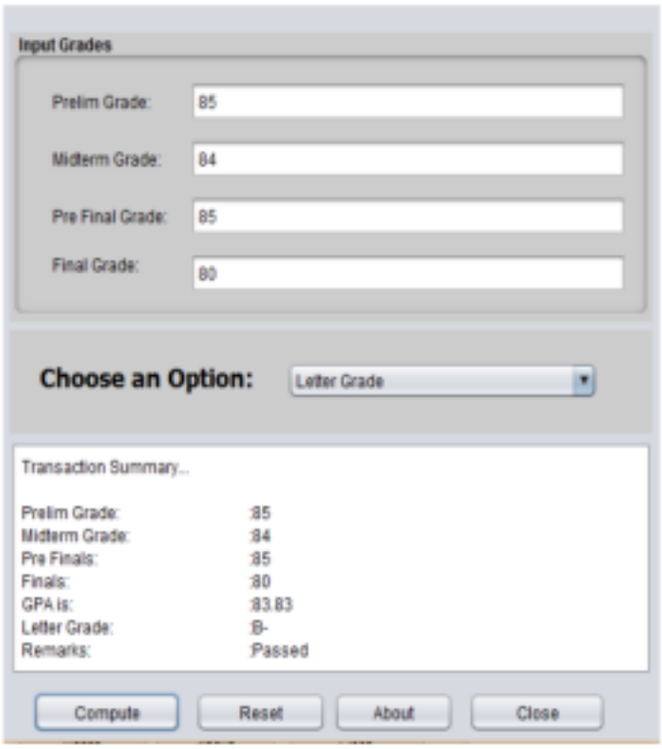


**Note:** Use appropriate containers and layout managers as you deem necessary and widgets as shown.

**Rubrics:**

**Rubrics: Form Design and Layout : 10 points**
**Program Correctness : 40 points (Reset – 5 pts., About – 5 pts. , Compute – 30 pts.)**

**CODE:**

```
from tkinter import *
from tkinter import messagebox


# ---------------- FUNCTIONS ---------------- #

def compute():
try:
prelim = float(prelim_entry.get())
midterm = float(midterm_entry.get())
prefinal = float(prefinal_entry.get())
final = float(final_entry.get())

# ----------- NEW VALIDATION BELOW -----------
for value in [prelim, midterm, prefinal, final]:
if value > 100:
messagebox.showerror("Invalid Grade", "Grades must not exceed 100.") return
if value < 0:
messagebox.showerror("Invalid Grade", "Grades cannot be negative.") return
# --------------------------------------------

gpa = (prelim + midterm + (0.5 * prefinal) + (0.5 * final)) / 3

output.delete("1.0", END)
output.insert(END, f"Prelim Grade: {prelim}\n")
output.insert(END, f"Midterm Grade: {midterm}\n")
output.insert(END, f"Pre-Final Grade: {prefinal}\n")
```

```
output.insert(END, f"Final Grade: {final}\n")
output.insert(END, f"GPA: {gpa:.2f}\n")
```
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```
if grade_type.get() == "letter":
letter = compute_letter(gpa)
remark = "Passed" if gpa >= 75 else "Failed"
output.insert(END, f"Letter Grade: {letter}\n")
output.insert(END, f"Remarks: {remark}\n")

elif grade_type.get() == "numeric":
remark = "Passed" if gpa >= 75 else "Failed"
output.insert(END, f"Numeric Grade: {gpa:.2f}\n")
output.insert(END, f"Remarks: {remark}\n")

except ValueError:
messagebox.showerror("Error", "Please enter valid numbers only.")


def compute_letter(g):
if g >= 96:
return "A"
elif g >= 90:
return "B"
elif g >= 85:
return "C"
elif g >= 80:
return "D"
elif g >= 75:
return "E"
else:
return "F"


def reset():
prelim_entry.delete(0, END)
midterm_entry.delete(0, END)
prefinal_entry.delete(0, END)
final_entry.delete(0, END)
grade_type.set("")
output.delete("1.0", END)


def about():
messagebox.showinfo("About", "Hello! I'm Arianna Quiambao!")


def on_closing():
if messagebox.askyesno("Exit", "Are you sure you want to close the program?"):
root.destroy()


# ---------------- GUI WINDOW ---------------- #

root = Tk()
root.title("Grading Program")
root.geometry("450x620")
root.configure(bg="black")

root.protocol("WM_DELETE_WINDOW", on_closing)

retro_font = ("Courier New", 12)
retro_font_bold = ("Courier New", 12, "bold")
green = "#00FF00"
```

```
def retro_label(text):
return Label(root, text=text, bg="black", fg=green, font=retro_font_bold)


def retro_entry():
e = Entry(root, bg="black", fg=green, insertbackground=green,
highlightbackground=green, highlightcolor=green, highlightthickness=1,
```
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```
font=retro_font, width=30)
return e


def retro_button(text, cmd):
return Button(root, text=text, command=cmd,
bg="black", fg=green, activebackground="black",
activeforeground=green, highlightbackground=green,
highlightthickness=1, font=retro_font_bold, width=20)


# ---------------- WIDGETS ---------------- #

retro_label("PRELIM GRADE").pack(pady=3)
prelim_entry = retro_entry()
prelim_entry.pack()

retro_label("MIDTERM GRADE").pack(pady=3)
midterm_entry = retro_entry()
midterm_entry.pack()

retro_label("PRE-FINAL GRADE").pack(pady=3)
prefinal_entry = retro_entry()
prefinal_entry.pack()

retro_label("FINAL GRADE").pack(pady=3)
final_entry = retro_entry()
final_entry.pack()

retro_label("Select Grade Type:").pack(pady=5)

grade_type = StringVar()
grade_type.set("")

Radiobutton(root, text="Letter Grade", variable=grade_type, value="letter",
bg="black", fg=green, selectcolor="black", activebackground="black",
activeforeground=green, font=retro_font).pack()

Radiobutton(root, text="Numeric Grade", variable=grade_type, value="numeric",
bg="black", fg=green, selectcolor="black", activebackground="black",
activeforeground=green, font=retro_font).pack()

retro_button("COMPUTE", compute).pack(pady=6)
retro_button("RESET", reset).pack(pady=6)
retro_button("ABOUT", about).pack(pady=6)
retro_button("CLOSE", lambda: on_closing()).pack(pady=6)
retro_label("OUTPUT:").pack(pady=5)

output = Text(root, height=12, width=50, bg="black", fg=green,
insertbackground=green, highlightbackground=green,
highlightcolor=green, highlightthickness=1, font=retro_font) output.pack()

root.mainloop()
```
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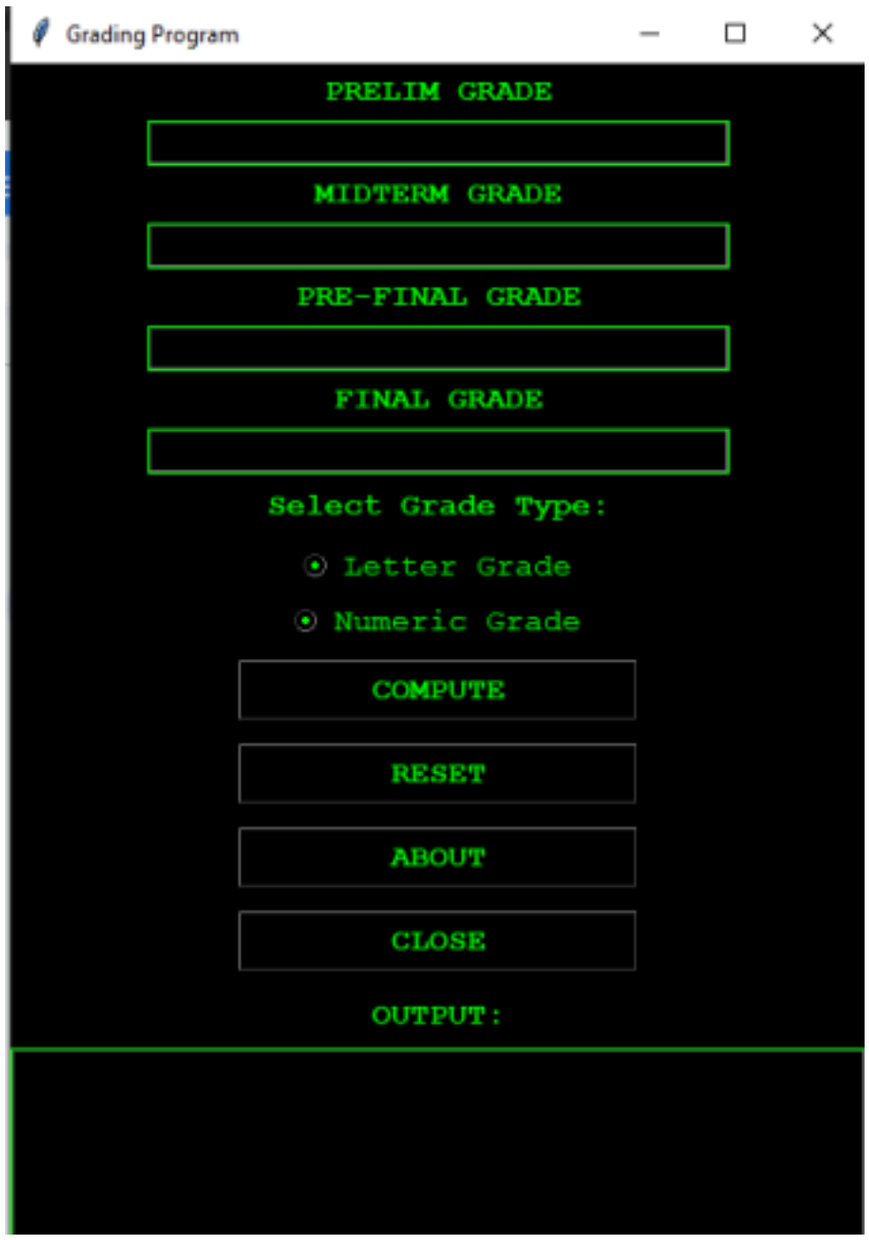
**OUTPUT:**

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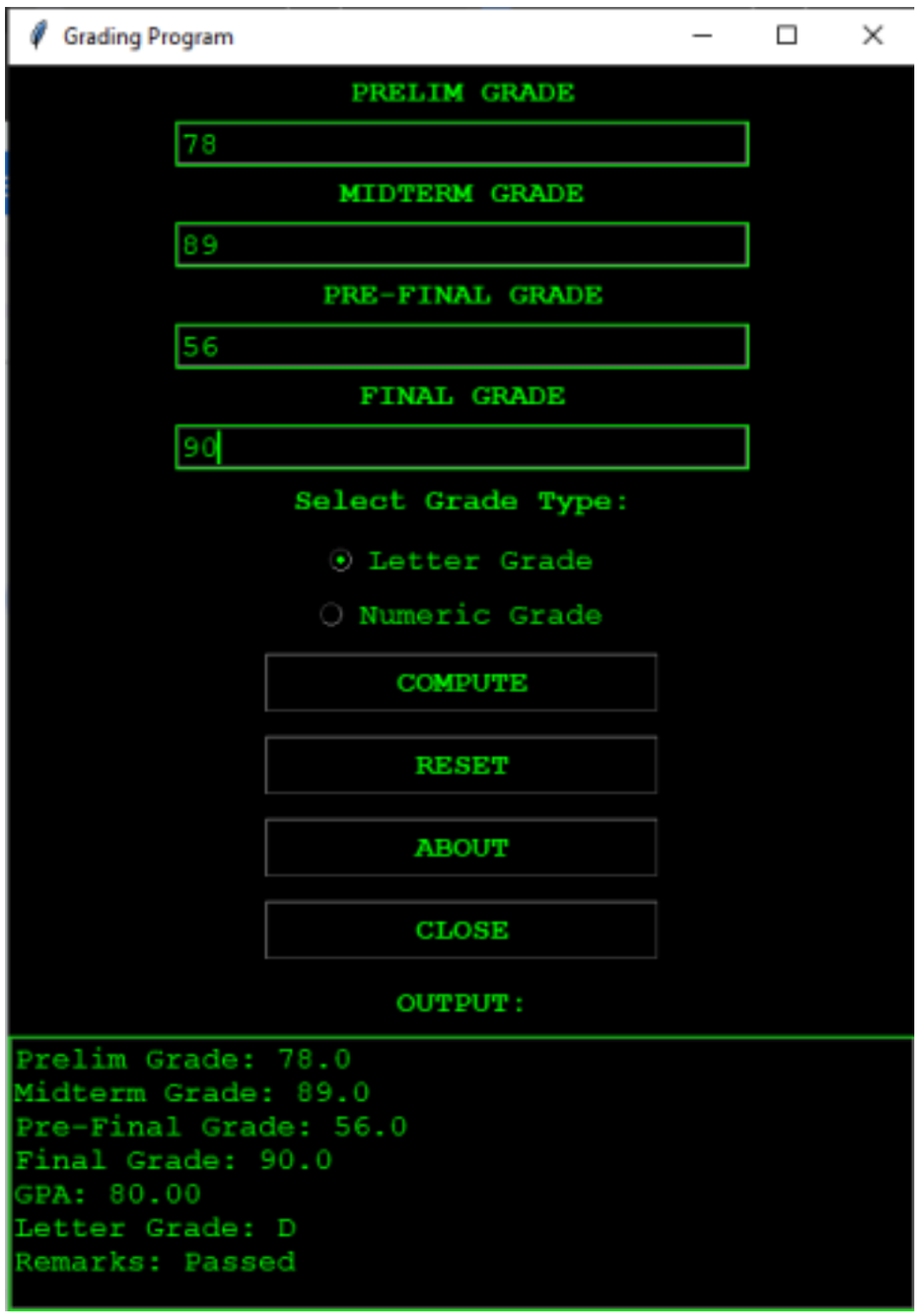


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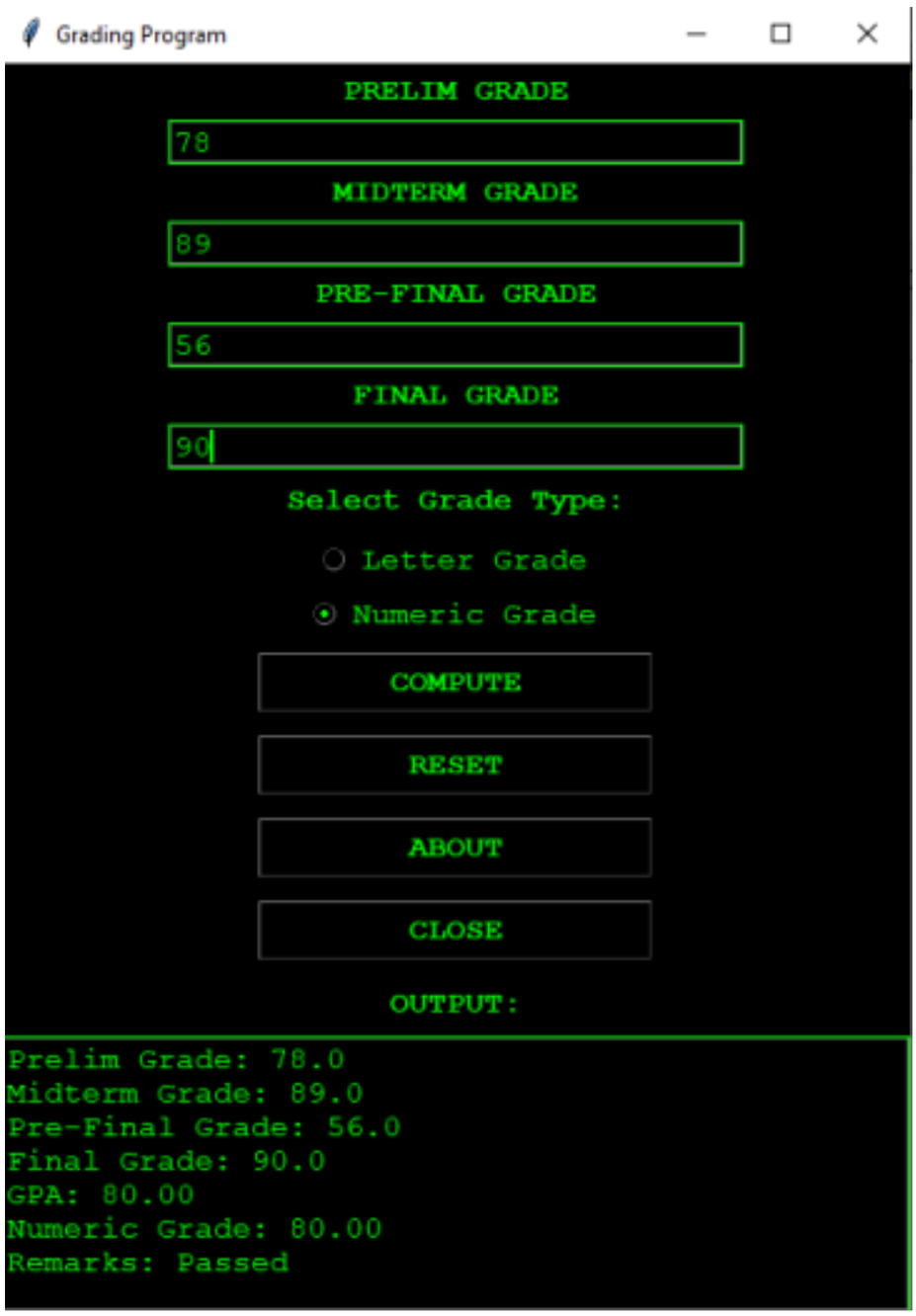


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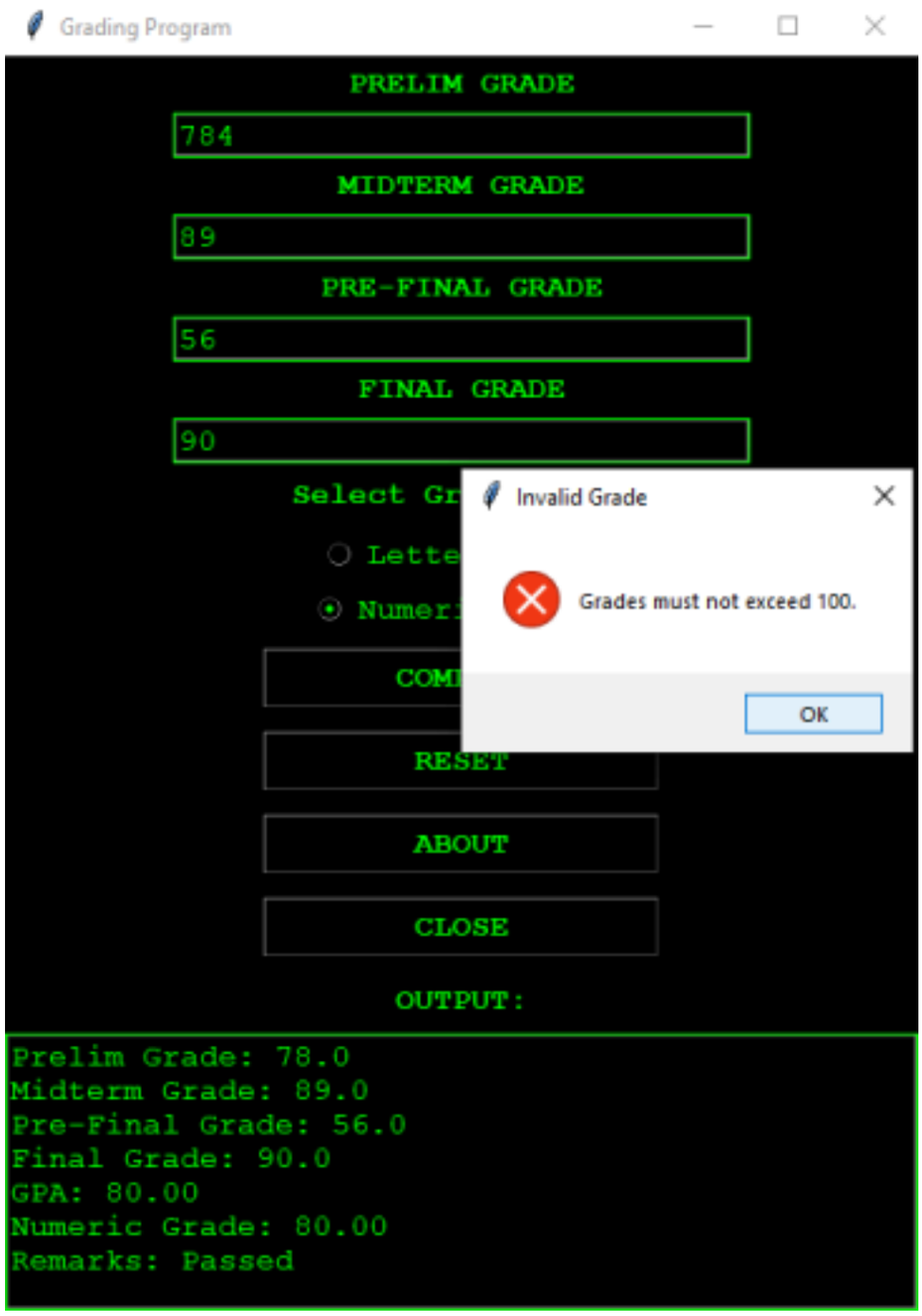


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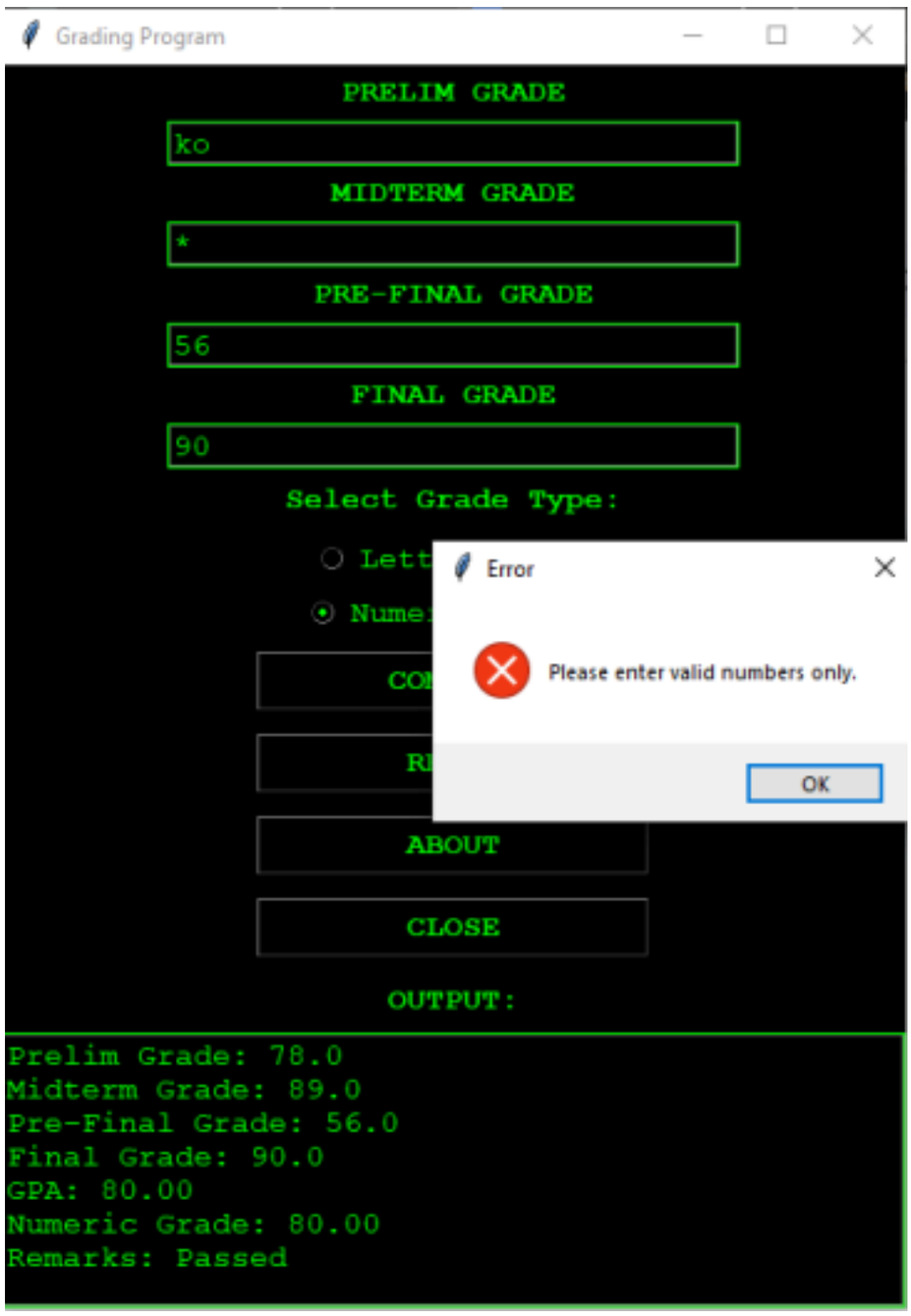


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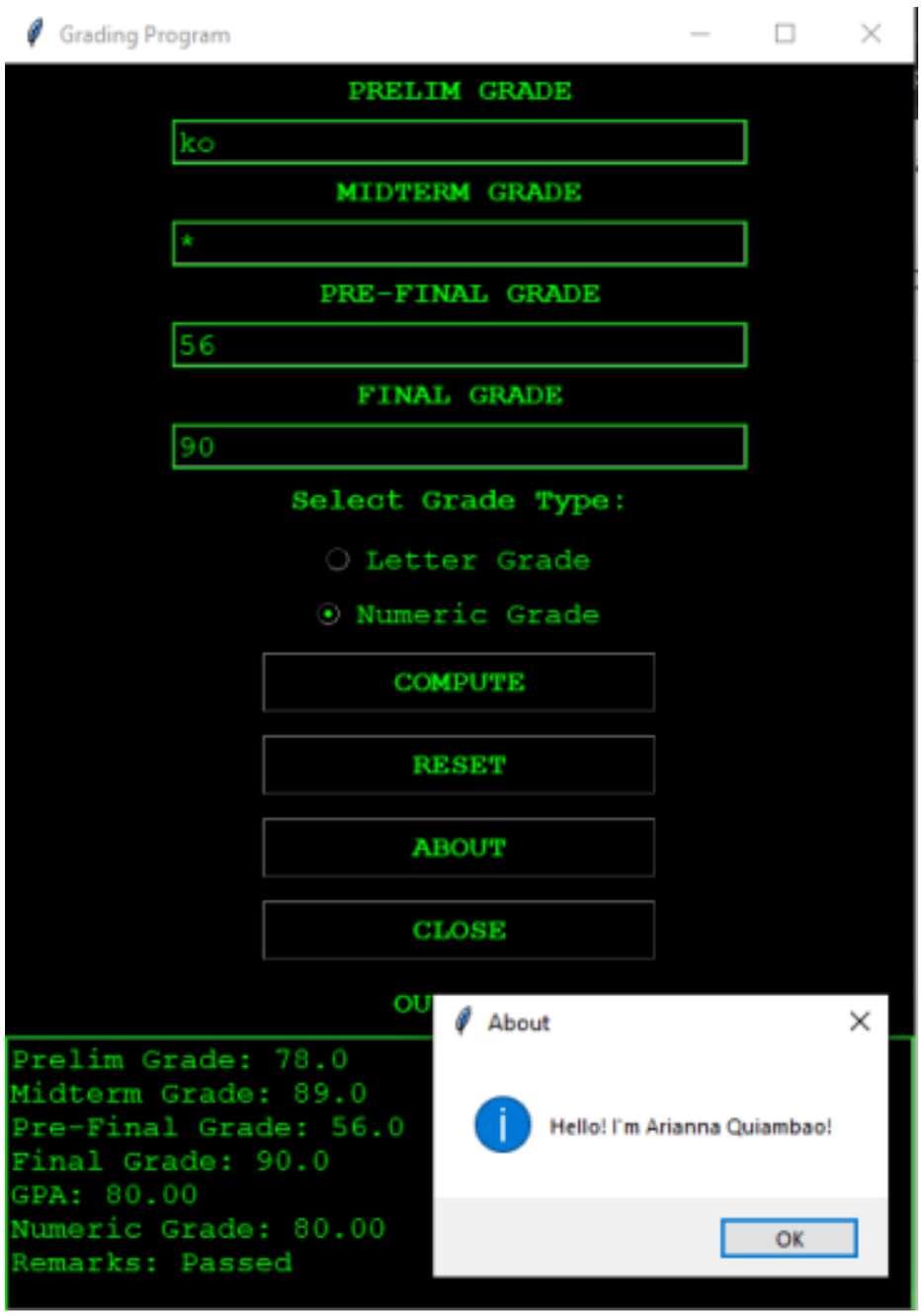
Grading Program
PRELIM GRADE
ko
MIDTERM GRADE
*
PRE-FINAL GRADE
56
FINAL GRADE
90
Select Grade Type:
Letter Grade
Numeric Grade
COMPUTE
RESET
ABOUT
CLOSE
OU
Prelim Grade: 78.0
Midterm Grade: 89.0
Pre-Final Grade: 56.0
Final Grade: 90.0
GPA: 80.00
Numeric Grade: 80.00
Remarks: Passed
About
Hello! I'm Arianna Quiambao!
OK