

## ASSIGNMENT 3

Code:

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import tkinter as tk
from tkinter import messagebox

class SimpleStorageGUI:
    def __init__(self, root):
        # ----- CONSTRUCTOR -----
        self.root = root
        self.root.title("Simple Storage Smart Contract - GUI Demo")
        self.root.geometry("600x560")

        # ----- STATE VARIABLE -----
        self.message = "Hello Blockchain"

        # ----- UI -----
        tk.Label(
            root,
            text="Simple Storage Smart Contract (GUI)",
            font=("Arial", 16, "bold")
        ).pack(pady=10)

        tk.Label(root, text="Enter Message:").pack()
        self.message_entry = tk.Entry(root, width=60)
        self.message_entry.pack(pady=5)

        tk.Button(
            root,
            text="Store / Update Message",
            command=self.set_message,
            bg="lightblue",
            width=25
        ).pack(pady=6)

        tk.Button(
            root,
            text="Retrieve Stored Message",
            command=self.get_message,
            bg="lightgreen",
            width=25
        ).pack(pady=6)

        # 🔄 REFRESH BUTTON
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tk.Button(
    root,
    text="Refresh / Clear History",
    command=self.refresh_history,
    bg="lightcoral",
    width=25
).pack(pady=6)

# ----- OUTPUT AREA -----
self.output = tk.Text(root, height=18, width=72)
self.output.pack(pady=10)

self.show_initial_details()

# ----- INITIAL DETAILS -----
def show_initial_details(self):
    self.output.insert(tk.END, "APPLICATION STARTED\n")
    self.output.insert(tk.END, "-" * 60 + "\n")
    self.output.insert(tk.END, "Constructor Executed:\n")
    self.output.insert(tk.END, "• Message initialized as: 'Hello
Blockchain'\n\n")

    self.output.insert(tk.END, "State Variable:\n")
    self.output.insert(tk.END, "• message (Data Type: string)\n\n")

    self.output.insert(tk.END, "Functions Available:\n")
    self.output.insert(tk.END, "• set_message() → Store / Update message\n")
    self.output.insert(tk.END, "• get_message() → Retrieve message\n\n")

# ----- SET MESSAGE FUNCTION -----
def set_message(self):
    new_message = self.message_entry.get()
    if new_message == "":
        messagebox.showwarning("Warning", "Message cannot be empty")
    else:
        self.message = new_message
        self.output.insert(tk.END, "-" * 60 + "\n")
        self.output.insert(tk.END, "Function Called: set_message()\n")
        self.output.insert(tk.END, "Action: Message Stored / Updated\n")
        self.output.insert(tk.END, f"New Stored Message: {self.message}\n\n")
        self.message_entry.delete(0, tk.END)

# ----- GET MESSAGE FUNCTION -----
def get_message(self):
    self.output.insert(tk.END, "-" * 60 + "\n")

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        self.output.insert(tk.END, "Function Called: get_message()\n")
        self.output.insert(tk.END, "Action: Retrieved Stored Message\n")
        self.output.insert(tk.END, f"Stored Message: {self.message}\n\n")

# ----- REFRESH / CLEAR HISTORY FUNCTION -----
def refresh_history(self):
    self.output.delete(1.0, tk.END)    # Clear all text
    self.show_initial_details()        # Re-show initial details
    messagebox.showinfo("Refreshed", "History cleared successfully")

# ----- MAIN PROGRAM -----
if __name__ == "__main__":
    root = tk.Tk()
    app = SimpleStorageGUI(root)
    root.mainloop()

```

