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import tkinter as tk

from tkinter import messagebox, simpledialog

import json


class TodoApp:

    def __init__(self, root):

        self.root = root

        self.root.title("To-Do List")

        self.tasks = []

        self.load_tasks()


        self.frame = tk.Frame(self.root)

        self.frame.pack(pady=10)


        self.listbox = tk.Listbox(self.frame, width=50, height=10, selectmode=tk.SINGLE)

        self.listbox.pack(side=tk.LEFT, padx=5)


        self.scrollbar = tk.Scrollbar(self.frame, orient=tk.VERTICAL)

        self.scrollbar.config(command=self.listbox.yview)

        self.scrollbar.pack(side=tk.RIGHT, fill=tk.Y)

        self.listbox.config(yscrollcommand=self.scrollbar.set)


        self.entry = tk.Entry(self.root, width=50)

        self.entry.pack(pady=5)


        self.add_button = tk.Button(self.root, text="Add Task", command=self.add_task)

        self.add_button.pack(pady=2)


        self.complete_button = tk.Button(self.root, text="Mark Completed",
command=self.mark_completed)

        self.complete_button.pack(pady=2)
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self.edit_button = tk.Button(self.root, text="Edit Task", command=self.edit_task)
self.edit_button.pack(pady=2)

self.delete_button = tk.Button(self.root, text="Delete Task", command=self.delete_task)
self.delete_button.pack(pady=2)

self.save_button = tk.Button(self.root, text="Save Tasks", command=self.save_tasks)
self.save_button.pack(pady=2)

self.quit_button = tk.Button(self.root, text="Quit", command=self.root.quit)
self.quit_button.pack(pady=2)

self.refresh_list()

def add_task(self):
    task = self.entry.get()

    if task:
        self.tasks.append({"task": task, "completed": False})
        self.entry.delete(0, tk.END)
        self.refresh_list()
    else:
        messagebox.showwarning("Warning", "Task cannot be empty!")

def mark_completed(self):
    try:
        index = self.listbox.curselection()[0]
        self.tasks[index]["completed"] = True
        self.refresh_list()
    except IndexError:
        messagebox.showwarning("Warning", "Please select a task to mark completed.")

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def edit_task(self):
    try:
        index = self.listbox.curselection()[0]

        new_task = simpledialog.askstring("Edit Task", "Edit the task:",
initialvalue=self.tasks[index]["task"])

        if new_task:
            self.tasks[index]["task"] = new_task

            self.refresh_list()

    except IndexError:
        messagebox.showwarning("Warning", "Please select a task to edit.")


def delete_task(self):
    try:
        index = self.listbox.curselection()[0]

        del self.tasks[index]

        self.refresh_list()

    except IndexError:
        messagebox.showwarning("Warning", "Please select a task to delete.")


def refresh_list(self):
    self.listbox.delete(0, tk.END)

    for task in self.tasks:
        display_text = f"{'[✓]' if task['completed'] else '[ ]'} {task['task']}"
        self.listbox.insert(tk.END, display_text)


def save_tasks(self):
    with open("tasks.json", "w") as file:
        json.dump(self.tasks, file)

    messagebox.showinfo("Info", "Tasks saved successfully!")

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def load_tasks(self):  
    try:  
        with open("tasks.json", "r") as file:  
            self.tasks = json.load(file)  
    except FileNotFoundError:  
        self.tasks = []
```

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if __name__ == "__main__":  
    root = tk.Tk()  
    app = TodoApp(root)  
    root.mainloop()
```