import json

import os

# Function to load existing tasks from a JSON file

def load\_tasks():

    if os.path.exists('tasks.json'):

        with open('tasks.json', 'r') as file:

            tasks = json.load(file)

        return tasks

    else:

        return []

# Function to save tasks to a JSON file

def save\_tasks(tasks):

    with open('tasks.json', 'w') as file:

        json.dump(tasks, file, indent=2)

# Function to display the to-do list

def show\_tasks(tasks):

    if tasks:

        print("Your To-Do List:")

        for i, task in enumerate(tasks, start=1):

            print(f"{i}. {task['description']} {'(Done)' if task['done'] else ''}")

    else:

        print("Your to-do list is empty.")

# Function to add a new task

def add\_task(tasks, description):

    tasks.append({'description': description, 'done': False})

    save\_tasks(tasks)

    print(f"Task '{description}' added to your to-do list.")

 Function to mark a task as done

def mark\_done(tasks, task\_index):

    if 1 <= task\_index <= len(tasks):

        tasks[task\_index - 1]['done'] = True

        save\_tasks(tasks)

        print(f"Task '{tasks[task\_index - 1]['description']}' marked as done.")

    else:

        print("Invalid task index.")

# Function to delete a task

def delete\_task(tasks, task\_index):

    if 1 <= task\_index <= len(tasks):

        deleted\_task = tasks.pop(task\_index - 1)

        save\_tasks(tasks)

        print(f"Task '{deleted\_task['description']}' deleted from your to-do list.")

    else:

        print("Invalid task index.")

# Main function

def main():

    tasks = load\_tasks()

    while True:

        print("\nTo-Do List Application:")

        print("1. Show tasks")

        print("2. Add task")

        print("3. Mark task as done")

        print("4. Delete task")

        print("5. Quit")

        choice = input("Enter your choice (1-5): ")

        if choice == '1':

            show\_tasks(tasks)

        elif choice == '2':

            description = input("Enter task description: ")

            add\_task(tasks, description)

        elif choice == '3':

            show\_tasks(tasks)

            task\_index = int(input("Enter the index of the task to mark as done: "))

            mark\_done(tasks, task\_index)

        elif choice == '4':

            show\_tasks(tasks)

            task\_index = int(input("Enter the index of the task to delete: "))

            delete\_task(tasks, task\_index)

        elif choice == '5':

            print("Quitting the To-Do List Application. Have a great day!")

            break

        else:

            print("Invalid choice. Please enter a number between 1 and 5.")

if \_\_name\_\_ == "\_\_main\_\_":

    main()