**Exercise 5: Task Management System**

public class Main {

    public static void main(String[] args) {

        TaskList taskList = new TaskList();

        taskList.addTask(new Task("T001", "Design UI", "Pending"));

        taskList.addTask(new Task("T002", "Write backend", "In Progress"));

        taskList.addTask(new Task("T003", "Test API", "Not Started"));

        System.out.println("All Tasks:");

        taskList.traverseTasks();

        System.out.println("\nSearch Task T002:");

        Task found = taskList.searchTask("T002");

        System.out.println(found != null ? found : "Not Found");

        System.out.println("\nDelete Task T001:");

        taskList.deleteTask("T001");

        System.out.println("\nAll Tasks After Deletion:");

        taskList.traverseTasks();

    }

}

class Task {

    String taskId;

    String taskName;

    String status;

    public Task(String taskId, String taskName, String status) {

        this.taskId = taskId;

        this.taskName = taskName;

        this.status = status;

    }

    public String toString() {

        return "[" + taskId + "] " + taskName + " - " + status;

    }

}

class TaskNode {

    Task data;

    TaskNode next;

    public TaskNode(Task data) {

        this.data = data;

        this.next = null;

    }

}

class TaskList {

    private TaskNode head;

    public void addTask(Task task) {

        TaskNode newNode = new TaskNode(task);

        if (head == null) {

            head = newNode;

        } else {

            TaskNode current = head;

            while (current.next != null) {

                current = current.next;

            }

            current.next = newNode;

        }

        System.out.println("Task added: " + task.taskId);

    }

    public Task searchTask(String taskId) {

        TaskNode current = head;

        while (current != null) {

            if (current.data.taskId.equals(taskId)) {

                return current.data;

            }

            current = current.next;

        }

        return null;

    }

    public void deleteTask(String taskId) {

        if (head == null) return;

        if (head.data.taskId.equals(taskId)) {

            head = head.next;

            System.out.println("Deleted task: " + taskId);

            return;

        }

        TaskNode current = head;

        while (current.next != null && !current.next.data.taskId.equals(taskId)) {

            current = current.next;

        }

        if (current.next != null) {

            current.next = current.next.next;

            System.out.println("Deleted task: " + taskId);

        } else {

            System.out.println("Task not found: " + taskId);

        }

    }

    public void traverseTasks() {

        TaskNode current = head;

        while (current != null) {

            System.out.println(current.data);

            current = current.next;

        }

    }

}

Output:

