# Exercise 5: Task Management System using Singly Linked List

Approach and Understanding:

In this problem, I was asked to **create a Task Management System** using a **Singly Linked List.**

The main purpose is to:

* **Add new tasks**
* **Delete tasks**
* **Search tasks**
* **Show all tasks**

# Code

class Task { String id;

String name; String stat; Task next;

Task(String id, String name, String stat) { this.id = id;

this.name = name; this.stat = stat;

this.next = null;

}

public String toString() {

return id + " - " + name + " - " + stat;

}

}

public class TaskManager { Task head;

public TaskManager() { head = null;

}

public void add(Task t) { if (head == null) {

head = t;

} else {

Task temp = head;

while (temp.next != null) { temp = temp.next;

}

temp.next = t;

}

System.out.println("Task added.");

}

public Task find(String key) { Task temp = head;

while (temp != null) {

if (temp.id.equals(key)) { return temp;

}

temp = temp.next;

}

return null;

}

public void show() { if (head == null) {

System.out.println("No tasks."); return;

}

Task temp = head;

while (temp != null) {

System.out.println(temp); temp = temp.next;

}

}

public boolean drop(String key) { if (head == null) {

return false;

}

if (head.id.equals(key)) { head = head.next; return true;

}

Task temp = head;

while (temp.next != null) {

if (temp.next.id.equals(key)) { temp.next = temp.next.next; return true;

}

temp = temp.next;

}

return false;

}

public static void main(String[] z) {

TaskManager tm = new TaskManager();

tm.add(new Task("T001", "Task One", "Pending"));

tm.add(new Task("T002", "Task Two", "Done"));

tm.add(new Task("T003", "Task Three", "Pending"));

tm.add(new Task("T004", "Task Four", "Done"));

System.out.println("Task List:"); tm.show();

System.out.println("\nFind T002:"); Task got = tm.find("T002");

System.out.println(got != null ? got : "Task not there.");

System.out.println("\nRemove T001:"); boolean done = tm.drop("T001");

if (done) {

System.out.println("T001 removed.");

} else {

System.out.println("T001 not there.");

}

System.out.println("\nList now:"); tm.show();

}

}

**OUTPUT:**

