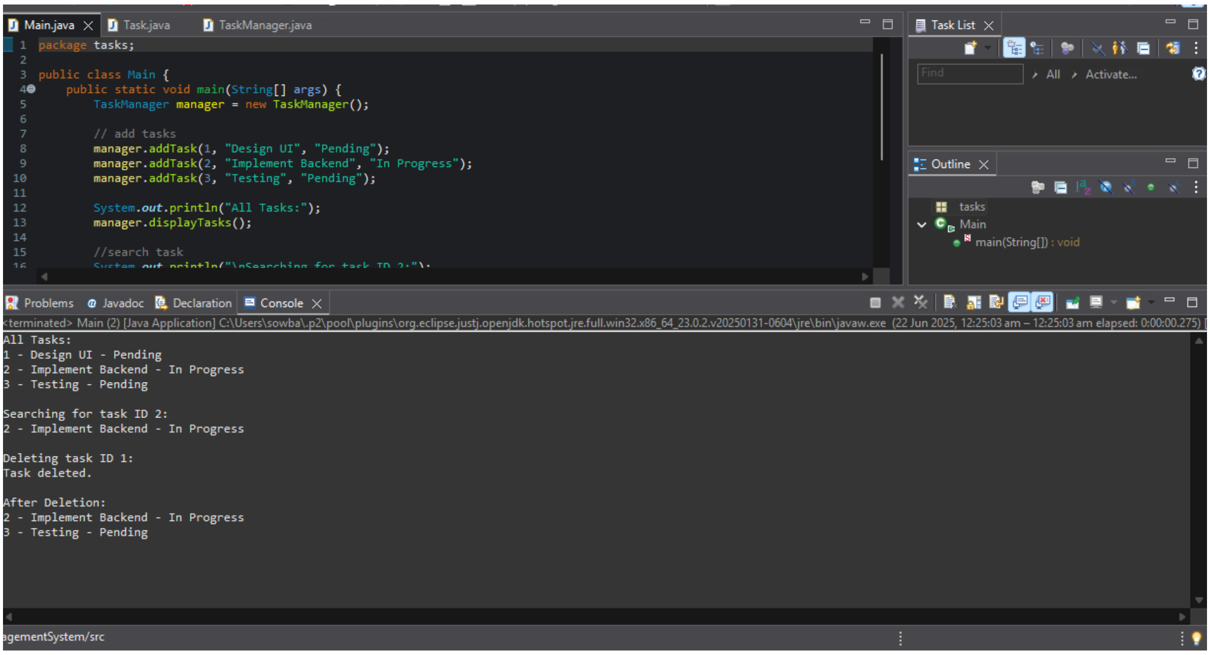
Exercise 5: Task Management System

OUTPUT:



```java
package tasks;

public class Main {
    public static void main(String[] args) {
        TaskManager manager = new TaskManager();

        // add tasks
        manager.addTask(1, "Design UI", "Pending");
        manager.addTask(2, "Implement Backend", "In Progress");
        manager.addTask(3, "Testing", "Pending");

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

        //search task
        System.out.println("\nSearching for task ID 2:");
```

```
<terminated> Main (2) [Java Application] C:\Users\sowba\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_23.0.2.v20250131-0604\jre\bin\javaw.exe  (22 Jun 2025, 12:25:03 am – 12:25:03 am elapsed: 0:00:00.275)
All Tasks:
1 - Design UI - Pending
2 - Implement Backend - In Progress
3 - Testing - Pending

Searching for task ID 2:
2 - Implement Backend - In Progress

Deleting task ID 1:
Task deleted.

After Deletion:
2 - Implement Backend - In Progress
3 - Testing - Pending
```

The Task Management System uses a singly linked list for dynamic task handling. Linked lists allow efficient addition and deletion, especially when tasks change frequently. Unlike arrays, they offer flexibility in memory usage and avoid shifting elements during operations.