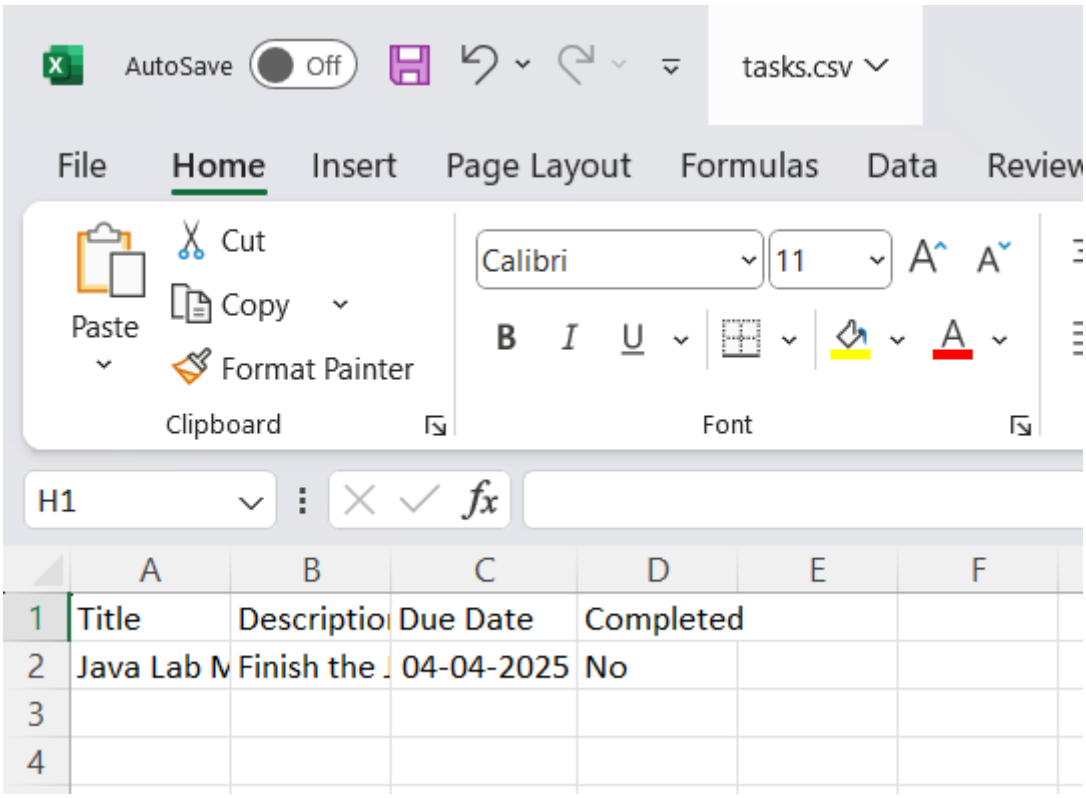
JAVA PROJECT – TASK MANAGER

Description:

The Task Manager is a simple console-based application built in Java for managing daily tasks efficiently. It provides users with an easy way to add, view, update, and delete tasks without requiring a database. Instead, all task data is stored in a file, ensuring persistence across multiple sessions. This lightweight application is ideal for individuals who need a quick and effective way to track their tasks without the complexity of database management.

CSV Output:



Code:

```
import java.io.*;
import java.util.*;

class Task {
    String title;
    String description;
    String dueDate;
    boolean isCompleted;

    public Task(String title, String description, String dueDate, boolean
isCompleted) {
        this.title = title;
        this.description = description;
        this.dueDate = dueDate;
        this.isCompleted = isCompleted;
    }

    @Override
    public String toString() {
        return (isCompleted ? "[✓] " : "[ ] ") + title + " (Due: " +
dueDate + ") - " + description;
    }
}

public class TaskManager {
    private static final String FILE_NAME = "tasks.txt";
    private static final List<Task> tasks = new ArrayList<>();

    public static void main(String[] args) {
```

```
        loadTasks();
        Scanner scanner = new Scanner(System.in);

        while (true) {
            System.out.println("\nTask Manager");
            System.out.println("1. Add Task");
            System.out.println("2. View Tasks");
            System.out.println("3. Mark Task as Completed");
            System.out.println("4. Delete Task");
            System.out.println("5. Save Tasks to CSV");
            System.out.println("6. Exit");
            System.out.print("Choose an option: ");

            int choice = scanner.nextInt();
            scanner.nextLine();

            switch (choice) {
                case 1 -> addTask(scanner);
                case 2 -> viewTasks();
                case 3 -> markTaskCompleted(scanner);
                case 4 -> deleteTask(scanner);
                case 5 -> saveTasksToCSV();
                case 6 -> {
                    saveTasks();
                    System.out.println("Exiting...");
                    return;
                }
                default -> System.out.println("Invalid option!");
            }
        }
    }
```

```
    private static void addTask(Scanner scanner) {
        System.out.print("Enter task title: ");
        String title = scanner.nextLine();
        System.out.print("Enter task description: ");
        String description = scanner.nextLine();
        System.out.print("Enter due date (YYYY-MM-DD): ");
        String dueDate = scanner.nextLine();

        tasks.add(new Task(title, description, dueDate, false));
        System.out.println("Task added successfully!");
    }

    private static void viewTasks() {
        if (tasks.isEmpty()) {
            System.out.println("No tasks available.");
            return;
        }
        for (int i = 0; i < tasks.size(); i++) {
            System.out.println((i + 1) + ". " + tasks.get(i));
        }
    }

    private static void markTaskCompleted(Scanner scanner) {
        viewTasks();
        if (tasks.isEmpty()) return;

        System.out.print("Enter task number to mark as completed: ");
        int index = scanner.nextInt() - 1;
        if (index >= 0 && index < tasks.size()) {
            tasks.get(index).isCompleted = true;
```

```
            System.out.println("Task marked as completed!");
        } else {
            System.out.println("Invalid task number.");
        }
    }

    private static void deleteTask(Scanner scanner) {
        viewTasks();
        if (tasks.isEmpty()) return;

        System.out.print("Enter task number to delete: ");
        int index = scanner.nextInt() - 1;
        if (index >= 0 && index < tasks.size()) {
            tasks.remove(index);
            System.out.println("Task deleted!");
        } else {
            System.out.println("Invalid task number.");
        }
    }

    private static void saveTasksToCSV() {
        try (FileWriter writer = new FileWriter("tasks.csv")) {
            writer.write("Title,Description,Due Date,Completed\n");
            for (Task task : tasks) {
                writer.write(task.title + "," + task.description + "," +
task.dueDate + "," + (task.isCompleted ? "Yes" : "No") + "\n");
            }
            System.out.println("Tasks saved to tasks.csv");
        } catch (IOException e) {
            System.out.println("Error saving tasks: " + e.getMessage());
        }
```

```
    }


    private static void saveTasks() {
        try (ObjectOutputStream out = new ObjectOutputStream(new
FileOutputStream(FILE_NAME))) {
            out.writeObject(tasks);
        } catch (IOException e) {
            System.out.println("Error saving tasks: " + e.getMessage());
        }
    }


    @SuppressWarnings("unchecked")
    private static void loadTasks() {
        try (ObjectInputStream in = new ObjectInputStream(new
FileInputStream(FILE_NAME))) {
            Object obj = in.readObject();
            if (obj instanceof List<?>) {
                tasks.addAll((List<Task>) obj);
            }
        } catch (IOException | ClassNotFoundException e) {
            // Ignore if file doesn't exist yet
        }
    }
}
```

GITHUB: [GITHUB-SARVAN-2187]

FUTURE IMPROVEMENTS:

- Add priority levels to tasks
- Implement sorting/filtering options
- Enhance file encryption for security

TERMINAL OUTPUT: