

ASSIGNMENT 5

Download the following project and data file from the GitHub repository:

Repository Link: https://github.com/asifzaman3180/assignment_5.git

Cloning Instructions

- **If you have SSH configured:**
 - `git clone git@github.com:asifzaman3180/assignment_5.git`
- **If you do not have SSH configured (use HTTPS instead):**
 - `git clone https://github.com/asifzaman3180/assignment_5.git`

Data File Information

- **Data File Name:** employees.txt
- **Initial File Contents:**
 - John Doe,Jane Smith,Alice Johnson,Bob Brown
- **Note:** Ensure that both EmployeeManager.java and employees.txt are in the same directory.

Task #0: Verify Initial Functionality

Run the program with the following command-line arguments to observe its behavior:

l, s, +, ?, c, u

Git Workflow Instructions

For each task listed below:

1. **Create a separate Git branch** named after the task (e.g., task1, task2, etc.).
2. **Create** an ignore list so that *.txt and *.log file will not be staged except important.log.
3. **Implement the task** and **commit your changes** using a meaningful message (use the task title as the commit message).
4. **Test your code** after every modification to ensure that previous functionality remains intact.
5. **Merge the task branch** back into the main (master) branch after completion.
6. **Create a new Git branch** named after your student ID and **push** it to GitHub repository.

Task Descriptions

Task #1 – Update Code Style for Better Consistency

- Ensure consistent indentation and spacing.
- Use proper braces and line breaks for readability.

Task #2 – Fix Early Termination on Invalid Arguments

- Add a validation check at the beginning of the program to ensure the correct number of command-line arguments.
- Prevent premature termination due to missing or extra arguments.

Task #3 – Improve Variable Naming

- Replace ambiguous or single-letter variable names with meaningful, descriptive ones.

Task #4 – Refactor Duplicate File Operations

- Extract repetitive file reading and writing code into separate reusable methods.

Task #5 – Replace String Literals with Constants

- Create a new class Constants.java to store constant values such as file paths and date formats.

Task #6 – Remove Unnecessary Temporary Variables

- Eliminate redundant or unused temporary variables to simplify the code.

Task #7 – Simplify Control Flow

- Remove the done control-flow variable.
- Improve the logic and response handling for the search operation.

Task #8 – Simplify Count Operation

- Streamline and simplify the logic behind the “count” functionality.

Task #9 – Handle Invalid User Arguments

- Add proper error handling and meaningful feedback for invalid or unsupported arguments.

Task #10 – Improve Documentation and Naming

- Add clear, concise comments explaining the purpose of each major code block.
- Refine method and variable names for enhanced readability and maintainability.

Submission Notes

- Final code must be clean, readable, and error-free.