**LockedMe.com – Project Specification Document**

**Version 1.0**

**1. Project Overview**

* **Project Name:** [LockedMe.com](http://LockedMe.com) – Virtual Key for Your Repositories
* **Developer:** Saksham Sengar
* **Company:** Company Lockers Pvt. Ltd.
* **Role:** Full Stack Developer
* **Version:** 1.0
* **Repository Link:** [[https://github.com/Saksh479/locked-me]](https://github.com/Saksh479/locked-me)

**2. Sprint Planning and Achievements**

**Sprint 1: Project Setup & Core Logic**

* Initialized Java Maven project structure.
* Implemented file operations: add, delete, search, and list files.
* Integrated input validation and error handling mechanisms.

**Sprint 2: User Interface & Features**

* Developed a command-line interface (CLI) for user interaction.
* Implemented menu navigation with submenus.
* Ensured error handling of invalid or unexpected inputs.

**Sprint 3: Testing & Documentation**

* Documented key algorithms, flowcharts.
* Compiled final documentation and uploaded it to the repository.

**3. Development Lifecycle: Step-by-Step Process**

1. **Requirement Analysis**
   * Analysed business requirements from the problem statement.
2. **Sprint Planning**
   * Divided development into three sprints.
3. **Project Setup**
   * Created a Maven-based Java project.
   * Structured packages: com.service, com.model, com.utils, and com.main.
4. **Feature Development**
   * Implemented file management functionalities with error handling.
5. **Documentation**
   * Authored comprehensive README, algorithmic explanations, and flowcharts.
6. **Version Control**
   * Used Git for source control and GitHub for hosting the repository.
7. **Release**
   * Performed final review, refinements, and documented the release version.

**4. Algorithms and Flowcharts**

**Key Algorithms:**

* File addition, deletion, search, and listing are powered by Java collections such as TreeSet (for sorted data) and ArrayList (for display).
* Input validation logic prevents illegal file names and invalid menu choices.
* Operations are enclosed in try-catch blocks to handle exceptions and prevent crashes.

**5. Core Concepts and Technologies**

* **Java Collections:** Utilized TreeSet and ArrayList for efficient file storage and retrieval.
* **Exception Handling:** Ensures graceful failure and user feedback for incorrect actions.
* **Sorting & Searching:** TreeSet provides O(log n) operations; custom search confirms file existence.
* **Command-Line Interface:** Built a robust and user-friendly CLI.
* **Maven:** Used for project lifecycle management and build automation.
* **Git & GitHub:** Employed for version control and collaborative development.

**6. GitHub Repository**

**Repository Link:** <https://github.com/Saksh479/locked-me>

All source code, documentation, flowcharts, and release notes are available in the repository for review and collaboration.

**7. Unique Selling Points (USPs) & Future Enhancements**

**USPs:**

* Simple yet powerful command-line interface.
* Robust error handling prevents application crashes.

**Planned Enhancements:**

* Integrate a graphical user interface (GUI).
* Add user authentication and support for multi-user environments.