Step 1: Feasibility and Roadmap

Feasibility Study

In software engineering, conducting a feasibility study helps to evaluate how viable the project is in terms of technical, operational, and financial aspects.

- **Technical Feasibility**: This project is highly feasible technically. We are using Spring Boot, a well-documented and community-supported framework, along with SQL databases which are standard for data storage. The programming language is Java, which is widely used and well understood.
- **Operational Feasibility**: Given that this is a high-score tracking API, the operational requirements are minimal. As long as the server hosting the API is maintained, operations should run smoothly.
- **Financial Feasibility**: The software stack we are using is open source and free to use. The primary cost would be the developer's time and the hardware or cloud services needed for hosting the API.

Estimated Time and Resources

A basic version of this project can be implemented by a single developer familiar with Java and Spring Boot in about 1 to 2 days. The timeline can be broken down as follows:

- Project setup and dependency management: 2 hours
- Development of the High Score model: 1 hour
- Development of CRUD operations: 3 hours
- Basic Testing: 2 hours
- Documentation: 2 hours

Hardware and Software Resources

- A computer with decent processing power and RAM for development
- IntelliJ IDEA or another suitable Java IDE
- Git for version control
- A SQL Database (H2 for development/testing)
- Server for deployment (optional at this stage)

Risk Analysis

- **Database Corruption**: Low risk, can be mitigated with regular backups.
- **Data Integrity**: Low to Medium risk, can be addressed through validation mechanisms.
- **Scalability**: Low risk in initial stages, scalability can be improved through optimizations and better data handling mechanisms.

Project Roadmap

- **Project Initialization and Setup**: This involves setting up the development environment and project structure.
- **Model Creation**: Define the data structure for high scores.
- **Database Configuration**: Setup SQL database and connect it with the Spring Boot application.
- **API Development**: Develop RESTful APIs to perform CRUD operations.
- **Testing**: Manual testing using Postman or unit testing using Spring Boot Test.
- **Documentation**: Code comments, API documentation, and a README file for the repository.
- **Deployment**: Optional at this stage but could involve deploying the API to a server.

Documentation will be done alongside each stage, describing what was done, how it was done, and any important considerations.