Loan Offer Engine

A brute force solution has been initially implemented to address the loan approval problem. This solution adjusts the user's credit score iteratively by considering the loan period and maximum loan amount. However, the brute force approach might be impractical for complex scenarios with a large number of users or varying credit parameters.

To tackle complex scenarios effectively, a smart rule engine like Drools or integration with Bizagi API can be utilized. These tools allow the system to consider multiple parameters, such as the user's credit history, income, and other relevant factors, to determine the approval or rejection of a requested loan amount. By leveraging the capabilities of these rule engines, the loan approval process becomes more accurate and efficient.

In addition to the smart rule engine, a sliding window technique can be applied to analyze different segments of a user's credit score. This technique allows for a more granular assessment, enabling the system to determine the loan amount that best suits the user's credit profile. By dynamically adjusting the loan amount based on the sliding window analysis, the system can optimize the loan approval process further.

The proposed solution has been implemented using a minimal web server in Java, specifically utilizing the Spring Boot framework. The backend exposes a single endpoint that handles the loan application process. The implementation includes integration with Swagger for easy testing and documentation purposes. On the frontend side, a component-driven approach using React.js has been adopted to create an intuitive user interface for loan applications. Tailwind CSS has been configured to provide basic styling to the components, enhancing the overall user experience.

Source Code: <https://github.com/JamshidMassomy/java-loan-app>