

# Sanitized Hackathon Problem Statement

## Credit Card Application - Java Full Stack with React

This public-safe summary is rewritten from the hackathon use case for blog reference. It removes event-internal formatting and uses generic names. It is not the official source document.

### Objective

Build a credit card application system for a sample bank. The solution should allow a new customer to apply for a credit card, calculate or retrieve a credit score, approve or request more documents, generate card credentials, and support first-time PIN setup.

### Expected Architecture

- Java backend services for the main business flows.
- React frontend for an interactive user journey.
- API gateway or equivalent routing layer for service access.
- Service boundaries suitable for application, credit rating, card activation, and PIN setup flows.
- Database persistence for customer, application, card, score, and audit-related data.
- Event-driven or asynchronous communication where useful, such as Kafka for service-to-service events.

### Flow 1: Apply for a New Credit Card

As a new customer, the user should be able to submit a credit card application with minimal required information.

- Basic user information
- Employment information
- Identity document type and document number
- On valid submission, trigger a credit rating check for the customer.

### Flow 2: Customer Credit Rating

The credit rating service should return an existing numeric credit score if one is available. If no score exists, calculate one from customer salary and existing credit card count.

Condition	Score
Already holds 2 or more credit cards	300
Annual salary greater than 200,000 USD	500
Annual salary between 50,000 and 200,000 USD	150
Annual salary below 50,000 USD	50

Acceptance expectation: update the customer credit score after validating customer information.

### Flow 3: Approve or Activate Credit Card

The system should approve, reject, or request additional documents based on the calculated credit score.

Score	Decision / Card Type	Limit
500	Platinum card	40,000 USD
300	Gold card	20,000 USD
150	Visa card	10,000 USD
50	Request additional documents	N/A

Acceptance expectation: generate a card number and first-time PIN for approved customers.

Out of scope: physical card/PIN delivery and workflow after additional documents are requested.

## Flow 4: First-Time Login and PIN Change

A new credit card customer should be able to change the default first-time PIN after validating card and identity details.

- Credit card number
- First-time PIN
- Identity document ID used during application
- New PIN and confirmation PIN
- On valid submission, update the PIN and create an audit entry.

## Validation and Review Expectations

- Add mandatory-field and format validations.
- Add business validations for all flows.
- Use functional programming style where appropriate with JDK 8+ features.
- Add unit test cases where applicable.
- Handle errors consistently across APIs and UI flows.

Prepared as a sanitized companion asset for [anandthakkar.com/blog/hcltech-hackathon-gift-city](https://anandthakkar.com/blog/hcltech-hackathon-gift-city)