

# Building a Online Payment Platform



## Background

With the rapid expansion of e-commerce, there is a pressing need for an efficient payment gateway. This project aims to develop an online payment platform, which will be an API-based application enabling e-commerce businesses to securely and seamlessly process transactions.

## Entities Involved:

1. **Customer:** Individuals who make online purchases and complete payments through the platform.
2. **Merchant:** The seller who utilizes the payment platform to receive payments from customers.
3. **Online Payment Platform:** An application that validates requests, stores card information, and manages payment requests and responses to and from the acquiring bank.
4. **Acquiring Bank:** Facilitates the actual retrieval of funds from the customer's card and transfers them to the merchant. Additionally, it validates card information and sends payment details to the relevant processing organization.

## Requirements:

The requirements for this initial phase are as follows:

1. **Payment Processing:**
  - The online payment platform should provide merchants with the ability to process a payment and receive either a successful or unsuccessful response.
2. **Querying Details of Previous Payments:**
  - Merchants should be able to retrieve details of previously made payments using a unique payment identifier.
3. **Bank Simulation:**
  - Utilize a bank simulator to simulate the interaction with the acquiring bank.

## Deliverables:

1. **Build an API that allows merchants:**
  - a. To process a payment through the online payment platform.
  - b. To retrieve details of a previously made payment.
  - c. To process refunds for specific transactions.
2. **Integrate a Bank Simulator:**
  - Use a bank simulator to test and simulate responses from the acquiring bank.

## Considerations:

- **Execution of the Solution:**
  - Provide clear instructions for setting up and running the online payment platform API.
  - Specify any dependencies or prerequisites for the solution.
- **Assumptions:**
  - Clarify any assumptions made during the design and implementation.
- **Areas for Improvement:**

- Identify potential areas for improvement in the online payment platform.
- Discuss any design decisions or trade-offs made during development.
- **Cloud Technologies:**
  - Specify the cloud technologies used and justify the choice.

**Extra:**

- **Authentication and Security:**
  - Implement measures for authentication and security to ensure secure transactions.
- **Audit Trail:**
  - Include an audit trail feature to track activities such as payment processing, queries for payment details, and refunds.