SE Challenge - 4 days

Challenge Timeline: 4 Days from the date that you receive the challenge

Requirements:

- For the solution, we request that you do it as a Full-stack Engineer and have to use
  - **FE: JavaScript or TypeScript by using frameworks - React.js or Next.js only**
  - **BE: Python, Node.js, Golang, or Rust language (prefer)**
    - Note: If you have never used these programming languages or libraries, please note for us.
  - **Database Required: MySQL or PostgreSQL**
- Test Coverage (Unit Test) for your solution.
- You have to set up your project with the Docker platform.
- Submit production-ready code that is clean and easy to understand.
- We allow you to guess and provide creative solutions to our problems. Sometimes, you will find a lack of requirements that always happen in day-to-day work. Use your imagination and your problem-solving skills to tackle a problem. We expect you to demonstrate your potential and craftsmanship through this small project. Be creative and have fun!

Rules:

1. A Solution should be an application.
2. The application must run.
3. You may use external libraries or tools for project support (e.g., styling, testing, building, and deploying). However, external libraries that solve the problem's logic directly are prohibited.
4. You can use external libraries or tools for building or testing purposes. Specifically, you may use unit-testing libraries or build tools for your chosen language.
5. Please include a brief explanation of your design and assumptions, your code, and detailed instructions to run your application. (Example - Readme)
6. We want our hiring process to be fair; everyone will start from the same place. We request that you do not share or publish these problems.

Problem: Vending Machine

Background

Blue Vending is a Unicorn company that sells Vending machines to the market, and we want to launch a new product called Simple Vending Machine for SMEs in our partnership. It will help them to produce at the cheapest cost.

We need to develop software for Blue Vending Machine to have simple functionality and easily add a new expansion in the future.

Customer Operation

1. A vending machine should accept coins of 1,5,10 THB and banknotes of 20, 50, 100, 500, and 1,000 THB
2. Allow users to select products available in stock
3. The system should calculate the logic below
    a. enough money to buy the chosen product
    b. enough coin or banknote for change to the customer
    c. stock available for sale
4. Return the number of remaining changes and adjust product stock and coin & banknote stock in the vending machine

Non-Functional Requirement

1. Make sure your solution is easy to maintain.
2. Your solution should be well-structured and easy to understand.
3. The option below depends on your experience.
    a. The application should have a responsive UI with good UX if you have been working as a Front-end engineer.
    b. If you have been working as a Back-end engineer, the application should provide CRUD API endpoints to manage stocks and store them in the database.
    c. If you have been working as a Full-stack engineer, you have to complete both requirements above (A and B).