HOME GLOBAL CARD **CAFÉ REWARDS** ORDER SHOPS ACCOUNT

Computer Science and Engineering
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1 Problem Statement

Coffee shops in Puerto Rico lack modern technology like digital presence and advanced CRM systems; leading to lost revenue opportunities as consumer preferences shift towards digital platforms. Therefore; creating a web application will increase revenue and enhance customer engagement.

2 Problem Background

The local coffee shops in Puerto Rico have strong connections to coffee, which is a key aspect of the island's heritage. Local coffee shops still lag far behind international franchises in terms of digital presence. The absence of digital resources in small businesses not only limits their ability to compete but also endangers their existence as technology progresses. Global instances and successful cases, such as the Starbucks Rewards program, illustrate the advantages of incorporating these technologies, resulting in significant increases in customer loyalty and expenditure. Another example is the rewards system at Seven Brew coffee shop, which has a digital version that helps them retain customers effectively.

3 Objectives

The main goal is to create a user-friendly interface with an 80% user satisfaction rate. This goal will be measured by conveying surveys and collecting feedback forms, which a user satisfaction of at least 80% to evaluate our success.

Another objective is to implement a platform that allows a minimum of 100 users to use the system at the same time. In order to successfully measure the success, load testing will be conducted to ensure that the system can handle 100 concurrent users without performance degradation.

4 Technical Approach

Architecture:

- Monolithic for streamlined development and rapid deployment.

Tech Stack:

- Back-end: Node.js for real-time performance
- Front-end: Next.js for modern, efficient SSR capable interfaces
- Framework: Next JS (modern framework)
- Database: PostgreSQL for secure, scalable data management.
- Cloud: Linode/Akamai for reliable, flexible cloud hosting.

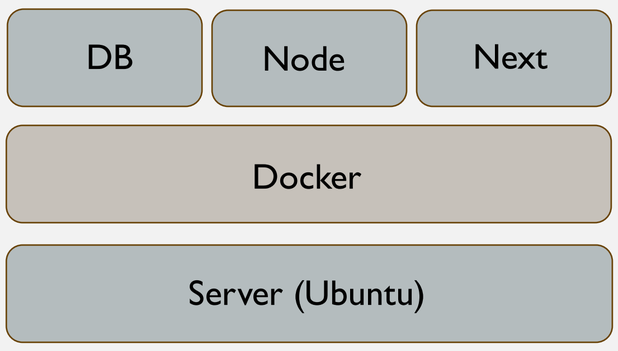
Modules:

- User Management & Authentication: Secure user access with JWT and bcrypt.
- Points & Rewards: Loyalty tracking with personalized rewards.
- POS Integration: Smooth transaction processing tied to rewards system using Stripe.

This setup delivers a user-friendly platform that simplifies digital transformation for Puerto Rican coffee shops, enhancing customer engagement and operational efficiency.

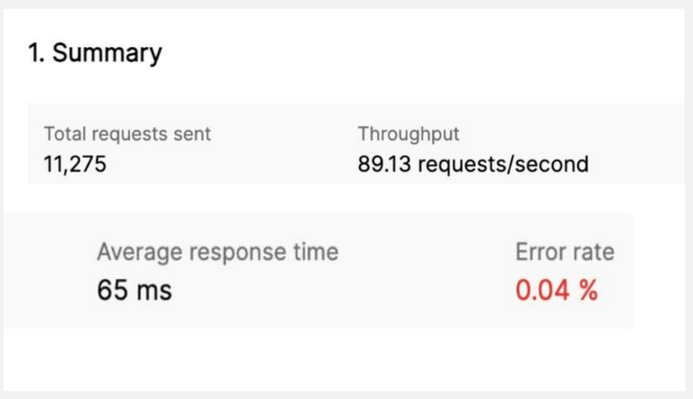
Deployment:

Our application is made to run within a containerized environment, utilizing three separate Docker containers to ensure ease of deployment.

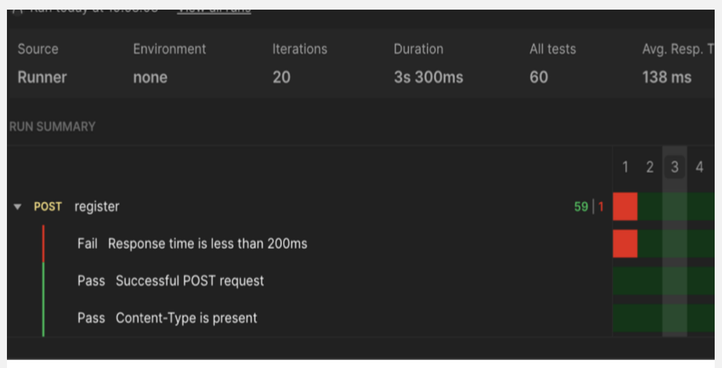


5 Results

Hardware:
- Shared CPU
- Ubuntu running Docker
- 1GB RAM
- Florida



Results of a "get all users" function that we ran against the server.



Failed results of register and login routes. 20 iterations of different accounts registering and loggin in.

6 Conclusion

The project "Café Rewards PR" aims to fill the technology gap in Puerto Rico's coffee shops by launching a complete digital platform. This solution combines an online ordering system, a Customer Relationship Management (CRM) system, and a flexible loyalty program that works with digital wallets.

R References

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