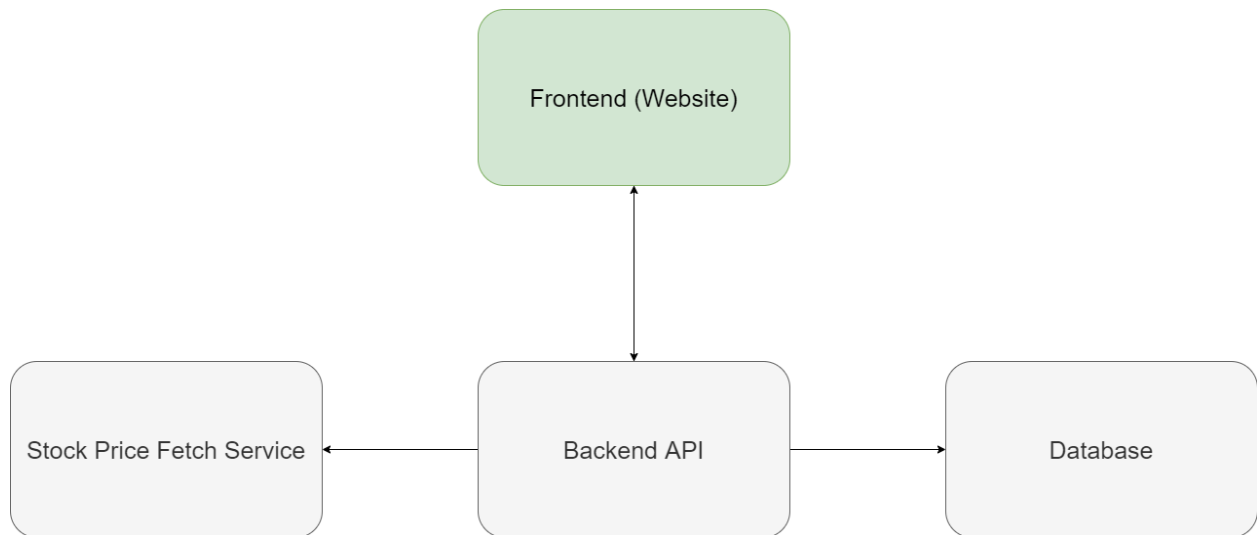# Group 8

Stock Trading

Justin Kerr

Owen Guo

Michael Myers

Sammy Mbazang

Technical Report: Chapter 1

Simply, we want a website that assists in the trading, selling, and managing of stocks. To accomplish this, we want to use multiple containers to fulfill different roles necessary to assist a user in viewing and buying their stocks.

```
                          ┌──────────────────┐
                          │ Frontend (Website)│
                          └──────────────────┘
                                  ↕
┌──────────────────────┐ ┌──────────────┐ ┌──────────────┐
│ Stock Price Fetch Service│←│ Backend API │→│  Database    │
└──────────────────────┘ └──────────────┘ └──────────────┘
```

There will be 4 different moving parts in the project. The Frontend will be a website that essentially serves as a GUI. It will have little computational capability and will mostly serve to communicate with the user. It will include a login service for privacy.

The backend API handles a lot of the heavy lifting. It communicates with the Frontend to receive information. It reaches out to the database and stock market service in order to gain information useful to the user. It is capable of processing complex information and handles most if not all computations.

The Database is meant to store user information. It will likely be an SQL database stored in a container. The database will store user information, which includes their login information, as well as information regarding their stocks, such as the specific kind, date, and price.

The Stock Fetching Service will be used to acquire information about specific stocks. It will likely be queries established in the backend being processed and executed on. It may be its own container.

Technical Report: Chapter 2

There are a number of technical requirements we are to fulfill. Of the ones assumed, we will definitely **utilize containerization.** We will also **finalize the project in CloudLab**. However, there are a couple of other concerns to address.

C-level technical requirements
- Only two components
- Minimal customization/installation of these components.
- Simple Docker compose setup with no external volume mounting
- Detailed documentation

B-level technical requirements

- Everything from the C-level requirements
- Creation of more than one Docker image and upload them into the infrastructure's Docker registry.
- Deployment of more than one service component
- Inclusion of CI/CD services with demonstrated live update of more than one component, and these components are connected.

A-level technical requirements

- Creation of all Docker images and upload them into the infrastructure's Docker registry.
- Deployment of all service components
- Inclusion of CI/CD services with demonstrated live update of more than one component, and these components are connected.
- I want this project to be something that will wow your technical interviewers.

We aim to fulfill all of the C-level requirements. We will have more than 2 containers, and each part will be fairly complex. We aim to make sure it is well documented as well.

We also desire to satisfy the B-level requirements. Having a system that scans the stock market should be updating frequently. In addition, we will want to generate an image, due to interactions between multiple components and the backend API.

We will also strive to satisfy the A-level requirement. Our goal is to build a well-structured and solid system. Implementing security authentication for users and a portfolio management for users to track their progress. Moreover, use CI/CD for live updates and real-time pricings for a more smooth and accurate experience.

Resumes
Owen Guo

OWEN GUO
www.linkedin.com/in/owen-guo-a2a2b2255

Enthusiastic and versatile college senior majoring in Computer Science with a minor in Chinese. I am actively seeking opportunities to apply my diverse background in Management, Investments, Marketing, and Computer science to make a meaningful contribution to organizations that value diverse and passionate individuals.

EDUCATION

West Chester University of Pennsylvania, West Chester, PA
Bachelor of Science in Computer Science. Chinese Minor, May 2025
GPA: 3.4/4.0

Relevant Courses

- Data Structures and Algorithm
- Software Engineering
- Search Engine Optimization
- Java Programming
- Programming Language Concepts/Paradigms
- Algorithmic Trading
- Python Programming
- Computer Systems
- Digital Marketing

Skills

- Java, Python, HTML, CSS, and JavaScript
- Multilingual: English, Mandarin, Fuzhounese; Beginner level Spanish
- Team Collaboration
- Search Engine Optimization
- Public Speaking
- Teams, Microsoft Office
- Detailed Research
- Digital Marketing with the use of AI
- Web Design
- Algorithmic Trading

Experience

Website Designer/SEO Specialist   **Self Employed**   **05/2024-Present**

- Utilized tools such as Adobe Photoshop, Squarespace, Wix, and Figma to create visually appealing, responsive, and user-friendly website layouts tailored to client specifications, enhancing overall user experience and engagement.
- Collaborated with clients to understand their requirements, translating them into effective design solutions.
- Implemented comprehensive SEO strategies, including keyword research, on-page optimization, meta-tag creation, and content enhancement, resulting in improved search engine rankings and increased organic traffic.
- Demonstrated strong attention to detail and the ability to prioritize tasks in a fast-paced environment, ensuring timely delivery of projects while maintaining high-quality standards.

AI Marketing Intern   **Saggio Technology**   **08/2023 - 01/2024**

- Utilized Artificial Intelligence tools to generate and optimize content for Twitter, LinkedIn, Pinterest, Facebook, and Instagram, resulting in a 20% increase in overall engagement.
- Designed compelling graphics and multimedia elements using tools like Canva and Adobe Photoshop, enhancing the brand's visual identity across all platforms.
- Monitored and analyzed social media metrics to assess the effectiveness of campaigns, providing insights for continuous improvement.
- Partnered with the marketing team to integrate content and design efforts, ensuring consistent and effective communication of the brand message.

Building Manager   **Sykes Student Union, West Chester, PA**   **08/2022-Present**

- Oversaw daily building operations, proactively identifying and addressing maintenance and repair needs, resulting in a decrease in downtime.
- Mentored and trained a team of building staff, enhancing team performance and fostering a collaborative work environment.
- Partnered with a diverse team of coworkers to achieve organizational goals, streamline operations, and improve overall building performance

Equity Portfolio Manager   **Self Employed**   **06/2020-Present**

- Oversee and manage financial assets for six clients, maintaining a combined portfolio value of approximately $13,000 and achieving an average annual ROI of 15%-20%
- Utilize financial modeling and analytical tools to optimize portfolio performance, achieving consistent returns aligned with clients' investment objectives.
- Provide regular updates and detailed reports to clients on portfolio performance, market insights, and strategic recommendations, ensuring transparency and informed decision-making.

University Residence Life Assistant   **West Chester University of Pennsylvania**   **5/2023-08/2023**

- Organized and facilitated summer camps and conferences on campus, ensuring seamless execution and enhancing participant satisfaction.
- Assisted the Associate Director of Housing with diverse administrative tasks and projects, ensuring adherence to university policies and improving departmental efficiency.
- Worked collaboratively with residence life staff and other university departments to coordinate activities and initiatives, promoting a cohesive and engaging campus atmosphere.

Justin Kerr

Degrees

Bachelors of Science in Computer Science, West Chester University of Pennsylvania

Minor in Applied Statistics

ONGOING   December 2025

Associates of Science in Computer Science, Montgomery County Community College

GPA: 3.43   December 2023

High School Diploma, Methacton High School

June 2021

Relevant Courses Completed

CSC240 - Computer Science III

CSC241 - Data Structures and Algorithms

CSC301 - Computer Security and Ethics

CST 221 - Database Systems

MAT 161 - Calculus I

STA200 - Statistics II

CSC231 - Computer Systems

CSC220 - Foundations of Computer Science

Primary Software / Languages

1. Microsoft Office
2. Java
3. SQL

Job Experience

Target   August 2022 - January 2024

Checkout Advocate, Service Advocate, Front-of-store Attendant   Phoenixville, PA

- Ran a checkout line, tended to customers in a fast and consistent way
- Worked at the service desk, which requires tending to
    - Returns, Questions, Order Pickup, Drive-Up Pickup, and Restocking items
- Worked as the cart attendant, which entails
    - Stocking the front of the store with carts, Keeping the premises (parking lot and store interior) free of carts, baskets, and trash, Keeping trash cans at front of store empty, and Tending to cleanliness at the front of the store and clean up all spills

Collegeville Italian Bakery   October 2017 - August 2022

Dining Room Attendant, Pizzeria Attendant, Drive Thru Head   Collegeville, PA

- Engaged face-first with customers: taking orders, serving food, and tending to their needs
- Prepared a couple of food items, which primarily included Pizzas and Deserts
- Ran the drive thru, tending to customers in a smooth and quick manner
- Restocked areas all throughout the building, for all branches
- Retrieved supplies from secondary locations

Proven Skills from work experience

- Public Speaking
- Customer Satisfaction
- Competence under pressure
- Management / Maintenance

Notable Projects

Database Project: Antique Thrift

Within a group, I constructed a database that served as the backbone for an Antique Thrift business. We planned out the structure, set up spreadsheets to load the data, constructed the Sequel database, loaded the data, then updated and maintained it.

Tournament Ranking System

By myself, using material I've learned from school, I constructed a Java program that would load tournaments from a distinct API, set up a profile for each player, then rank them within a Glicko system using every set/match, and finally output the result.

Sammy Mbazang

(202) 390-8611
smbazang@gmail.com

EDUCATION

West Chester University, West Chester, PA

August 2022 - Present

Bachelors of Science in Computer Science
GPA – 2.7

McKinley Technology HS, Washington, D.C.

August 2018 - June 2022

Courses taken:
- JROTC LET 1,2,3
- learned discipline and leadership
- Networking
- Cybersecurity
- Tenacity training

Relevant Courses
- Computer Systems
- Computer Science III
- Data Structure & Algorithms
- Computer Security & Ethics
- Foundation of Computer Science

Relevant Courses

EXPERIENCE

Enlightened, On Ramps Washington DC – Internship

July 2022 - August 2022

- Practiced public speaking
- Learned how to configure a network
- Worked on Spreadsheets
- Learned how to install printers
- Inhance programming skills in Python and Java

Virginia Tech Thinkabit, On Ramps Washington DC — *Internship*

February 2022 - May 2022

- Learned programming languages
- Practiced time management
- Experience with Excel Documents

Virtual Enterprise Architect, On Ramps Washington DC — *Internship*

June 2021 - August 2021

- Learned Web Development
- Created a tutorial on how to navigate a website
- Hosted a golfing tournament fundraiser

Citiwide, Washington DC — *Internship*

June 2020 - August 2020

- Professional Development
- Learned about financial literacy
- Collaborated with other interns to practice team building exercises

SKILLS

Teamwork/ Collaboration

Problem-solving

Quick learner

Customer service

Michael Myers

Michaelxmyers15@gmail.com • (610) 328-8009

Education

West Chester University of Pennsylvania, West Chester, PA

Bachelor of Science in Computer Science, May 2025

Certificate: Computer Security Certificate

- GPA: 3.82

Relevant Coursework

Software Security, Computer Security, Computer Security Ethics, Computer Systems, Software Engineering, Data Structures and Algorithms

Related Experience

A&K Community Homes, Exton, PA

IT Intern, May 2023 – August 2023

- Troubleshot tech issues on company devices

- Coached employees on how to use company software

- Coordinated with managers to make sufficient computer-based training packages

- Installed content restrictions onto company devices

Additional Experience

Wegmans Food Market, Glen Mills, PA

Cashier March 2022 - Present

- Teamed up with other departments to help manage busy hours

- Provided friendly customer service, and resolved customer's questions and request efficiently

- Trained new employees on how to use store equipment such as registers and self checkout machines

Personal Projects

Security Policy-

- Collaborated with classmates to organize a security policy for a mock university

- Established policies for acceptable use, network configuration, and data security

- Adhered to NIST cyber security framework and followed CIA triad

Multi-stage Exploit-

- Identified program vulnerabilities in C source code

- Crafted a payload using python to hack into a remote server and gain shell accesses

- Utilize resources such as GDB debugger and pwntools library to understand memory layout of the C file

- Used strategies to bypass common protections such as ASLR and NX

Skills

Programming languages: proficient in Java; familiar with C and Python, exposed to JavScript, HTML, CSS and Bash

Operating Systems: Windows, Linux

Software: Microsoft Office