University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: 3

Date: March 5, 2024

Group Number: 103

Name	Student Number	CS Alias (Userid)	Preferred E-mail Address
Junsu An	63647879	anjjunsu	anjjunsu@gmail.com
John Do	56442833	djw0626	djw0626123@gmail.com
Paul Tiberghien	10887602	r1e6f	paultiberghien1@gmail.com

By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student Ids are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

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Project Summary

Our project allows users to filter, search for, and compare computers/parts from various retailers that meet particular specifications. Stored computer information includes CPU, GPU, storage, and monitor details as well as the location at which it is sold. Our database also allows users to share their experiences regarding the performance, design, and satisfaction of each component to help other users make informed purchases.

Timeline

Tentative completed project date: March 31
Tentative draft project date: March 17
Queries (TEMP)

- Insert
  - insert user review (form entries)
- Delete
  - delete user review
    - from a list of reviews for each user (implement user login)
- Update
  - edit user review
- Selection
  - compare computers
- Projection & join
  - Find all names of people who wrote a review on some computer
- Agg

Frontend – Paul

- Create general design in Figma – Mar 10
  - Colour palette
  - user flow
- Learn react fundamentals – Mar 13
- Setup react project – Mar 13
- Setup google login – Mar 15
  - send user data to backend
- Create draft of search feature – Mar 17
- Create draft of comparison feature – Mar 20
- Fully implement search & comparison – Mar 24

Backend & Platform & Cloud

March 10

1. Choose cloud platform (Junsu)
2. Setup network for backend (John)
3. Setup VM (Junsu)
   - Choose VM
   - Make scaling plan
4. Setup database (John)
   - Choose database
   - Decide how we should interact with db (ORM? hard SQL?)

March 12

Configuration (Junsu)

- Configure firewall
- Configure route table
- Configure access policy
- DB access policy configuration

Communication between FE, BE, and DB (John)

March 16

Setup server

  - Choose framework/language (Junsu)

March 18

Business logic (Junsu)

  - Discuss list of requirements with FE
  - List APIs we need

Architecture Design (John)

  - N-tier architecture?
  - Microservices?

To-dos and Challenges

Things Left to Do

Frontend Development

- Finalize the UI/UX design in Figma based on user feedback and usability testing.
- Implement responsive design to ensure the application is accessible on various devices.
- Integration testing with backend APIs to ensure seamless data flow and error handling.
- User authentication and security measures for protecting user data and reviews.

Backend Development

- Finalize the choice of the cloud platform and ensure it supports the scalability and security needs of your project.
- Complete the server setup and ensure it can handle concurrent user requests efficiently.
- Implement comprehensive testing for the backend, including unit, integration, and stress testing to ensure reliability and performance.
- Security measures to protect against SQL injection, Cross-Site Scripting (XSS), and other potential vulnerabilities.

Database

- Finalize database schema and ensure normalization to prevent redundancy.
- Implement backup and recovery strategies to protect against data loss.
- Ensure the database is optimized for fast queries, especially for the search and comparison features.

Integration and Testing

- Set up a continuous integration/continuous deployment (CI/CD) pipeline to automate testing and deployment processes.
- Conduct end-to-end testing to ensure all components of the system work together seamlessly.
- Plan for user acceptance testing (UAT) to gather feedback from potential users on the functionality and usability of the application.

Challenges

Scalability

As your user base grows, ensuring the application scales effectively to handle increased load without performance degradation.

Security

Protecting user data and ensuring the application is secure against potential attacks can be challenging, especially with features like user reviews and personal information storage.

Data Consistency

Ensuring data consistency across the application, especially when dealing with real-time data updates from multiple sources.

User Experience

Designing an intuitive and efficient user interface that caters to a wide range of users, from novices to tech-savvy individuals.

Integration Complexity

Managing the complexity of integrating various components, including frontend, backend, database, and third-party services.

Feedback and Iteration

Incorporating user feedback into the development process and being ready to iterate on your design and features based on this feedback.