COS30043 – Interface Design and Development

Learning Summary Report

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Self-Assessment Details

The following checklists provide an overview of my self-assessment for this unit.

	Pass (D)	Credit (C)	Distinction (D)	High Distinction (HD)
Self-Assessment (please tick)				✓

Self-assessment Statement

	Included (please tick)
Learning Summary Report	✓
Use of Bootstrap that demonstrate coverage of core concepts	✓
Use of VueJS that demonstrate coverage of core concepts	✓

Minimum Pass Checklist

	Included (please tick)
Progress on Credit Tasks	✓
All Pass Tasks signed off	✓

Minimum Credit Checklist, in addition to Pass Checklist

	Included (please tick)
Credit and Pass Tasks done, and Progress on Distinction Tasks.	✓
Custom program meets Distinction criteria	✓
Design report with screenshots for custom program	✓

Minimum Distinction Checklist, in addition to Credit Checklist

	Included (please tick)
Research report, and associated pieces	✓
Custom project meets HD requirements	✓

Minimum High Distinction Checklist, in addition to Distinction Checklist

Declaration

I declare that this portfolio is my individual work. I have not copied from any other student's work or from any other source except where due acknowledgment is made explicitly in the text, nor has any part of this submission been written for me by another person.

Signature: Nur E Siam

Introduction

This report summarises what I learnt in COS30043 – Interface Design and Development. It includes a self-assessment against the criteria described in the unit outline, a justification of the pieces included, details of the coverage of the unit's intended learning outcomes, and a reflection on my learning.

Overview of Pieces Included

This section outlines the pieces that I have included in my portfolio…

1. …1.1P: a web project that I have completed.
2. 1.2P: hello world
3. 1.3P: form Accessibility
4. 1.4P: table accessibility
5. 2.1P: setup Bootstrap and hello world using Bootstrap.
6. 2.2P: design a calculator app using Bootstrap
7. 2.3P: create a Bootstrap Template Library
8. 3.1P: string test app using VueJS
9. 3.2P: unit look-up app
10. 3.3C: BMI Compute app
11. 3.4C: registration app
12. 4.1P: number guessing game app
13. 5.1P: My status posting app
14. 5.2P: Menu list app
15. 5.3C: Creating Router using vue
16. 6.1C: Form Validation using Vuetify
17. 6.2D: The NES-Gamestore an online game store in 6.2HD, fulfilling all requirements for D level and HD level
18. 7.1P: Requesting External Data
19. 7.2P: Retrieving data from a text file
20. 8.1P: unit marks
21. 8.2C: My Table
22. 9.1P: Single Page Application
23. 9.2C: single page application including router, tab and pagination
24. 10.1P: single page application using vue-cli
25. 10.2HD: live coding tutorial edited 8.2C to a full stack webapp that connects to backend and take inputs to database.
26. 1.1P: learning summary report

Coverage of the Intended Learning Outcomes

This section outlines how the pieces I have included demonstrate the depth of my understanding in relation to each of the unit's intended learning outcomes.

ILO 1: Apply Design

Apply fundamental design concepts and standards to the development of user interfaces

The following pieces demonstrate my ability in relation to this ILO:

- 2.2P
  Using Bootstrap's grid system to design a responsive calculator interface that adapts to various screen sizes.

- 2.3P
  Creating a web template for a corporate site using Bootstrap's grid system, including wireframes and designated element placements.

- 3.2P

Developing the unit look-up app layout with Bootstrap's grid system and table classes for structured presentation.

- 3.4C
  Designing the cloud service registration app interface with the Bootstrap grid system for a clean and organized layout.

- 5.3C
  Utilizing Bootstrap's grid system and table classes to structure the unit look-up app for an organized and responsive design.

- 7.2P
  Format the Units table utilizing Bootstrap's grid structure and table design classes for a consistent layout.

- 8.2C
  Implement pagination in the Unit look-up app using vue-paginate-next and Bootstrap for seamless navigation.

- 9.2C
  Design a single-page application, structured and styled using Bootstrap.

- 10.2HD
  Use Bootstrap to style and structure a simplified version of my High Distinction app, ensuring a clean and cohesive design

ILO 2: Use Frameworks

Use contemporary frameworks to create dynamic user interfaces.

…The following pieces demonstrate my ability in relation to this ILO, all of which involve the Vue.js framework:

3.1P

Developed a simple app utilizing conditional directives to render custom messages on the web.

3.2P

Created a unit look-up feature in a given dataset, employing JavaScript's sort and filter functions based on user inputs.

3.3P

Designed a BMI calculator that uses conditional directives to compute the BMI based on the user’s weight and height inputs.

3.4P

Built a registration app displaying various types of user inputs.

4.1P

Implemented a number guessing game with methods to generate a random number, check the user’s guess, give up, and restart the game.

5.1P

Used components to create a status posting app.

5.2P

Constructed a menu by passing values from parent to child components using props.

5.3C

Integrated a router into the unit look-up app.

6.1C

Created a registration form app using Vuetify and its validation rules.

8.2C

Implemented pagination in the unit look-up app using vue-paginate-next.

9.1C

Built a single-page application with using various components and a backend.

10.1P

Created a single-page application with custom views and routing using vue-cli.

ILO 3: Develop User Interfaces

Design and develop user interfaces optimised for a range of devices and platforms.

…The following pieces demonstrate my ability in relation to this ILO:

2.2P

Developed a calculator app with a compact view that remains responsive to different screen sizes.

2.3P

Created a scalable template site for a corporation.

6.2HD

Developed a scalable app that functions seamlessly across three interfaces: desktop, mobile portrait, and mobile landscape.

ILO 4: Evaluate User Interfaces

Evaluate user interfaces with respect to usability and accessibility using appropriate techniques, and propose improvements.

…The following pieces demonstrate my ability in relation to this ILO:

2.3P

Applied design thinking and implemented the grid layout for the web template.

6.2HD

Conducted research and analyzed other available web apps to understand their design structures on mobile, then applied the insights to develop a custom app

Reflection

The most important things I learnt:

Throughout the "Interface Design and Development" course, I've delved into various crucial topics that have significantly enhanced my understanding of creating dynamic and user-friendly interfaces. Here are some key takeaways and insights from my learning journey:

Design Principles for Effective Interfaces: One of the most important lessons I've learned is the significance of adhering to design principles and standards while crafting interfaces. These principles encompass aesthetic aspects like layout, colour, typography, and user-cantered design approaches that ensure a seamless and intuitive user experience.

Hands-On Experience with Development Tools: This course has introduced me to contemporary frameworks and development tools instrumental in building interactive interfaces. The practical experience with technologies such as Vue.js has been invaluable for creating dynamic user experiences.

User-Centric Approach to Design: The course has highlighted the essence of designing interfaces with users in mind. I've gained insights into user interface design patterns and techniques prioritizing usability and accessibility, making the end product more engaging and inclusive.

Responsive Design and Cross-Platform Optimization: Learning to create interfaces that adapt to different devices and screen sizes has been a game-changer. Responsive design ensures users have a consistent experience, whether on a desktop, tablet, or smartphone.

Usability and Accessibility Evaluation: A significant learning point has been the evaluation of user interfaces in terms of usability and accessibility. Understanding techniques for assessing how easy it is for users to interact with the interface and ensuring its inclusivity has been eye-opening.

Exploring Single Page Applications (SPAs): I've gained insights into the world of Single Page Applications, which have the potential to revolutionize user experiences. Dynamically updating content without reloading the entire page aligns with modern user expectations.

The things that helped me most were:

1. Instructor Availability

The availability of the course instructor for consultations and appointments played a crucial role in my learning process. Being able to directly seek clarifications, guidance, and further explanations from the instructor significantly enhanced my understanding of complex topics.

2. Reflection and Review

The chance to review my work and receive detailed feedback during the portfolio submission process was invaluable. This practice allowed me to critically evaluate my progress over the course duration and identify areas of strength and areas needing improvement.

3. Contemporary Frameworks and Tools

The course's emphasis on contemporary frameworks and tools, such as Vue.js, equipped me with the ability to efficiently create dynamic and interactive interfaces. Working with these tools accelerated my development process and introduced me to industry-standard practices.

4. Usability and Accessibility Emphasis

The dedicated focus on usability and accessibility principles was extremely enlightening. Learning how to design interfaces that accommodate a diverse range of users, including those with disabilities, underscored the importance of inclusivity in modern design practices.

I found the following topics particularly challenging:

Throughout the "Interface Design and Development" course, I felt engaged and confident in understanding the various topics covered. Reflecting on the course content, I didn't encounter any significant challenges. This reflects my familiarity with the subject matter, bolstered by my prior backend knowledge, and the effective teaching methods used by the instructors.

Rather than facing difficulties, I experienced a continuous learning journey where each module built upon my existing knowledge. My background in backend development helped me delve into concepts such as user interface design principles, client-side scripting languages, and responsive design techniques with enthusiasm and ease.

I found the following topics particularly interesting:

Responsive Design

Creating interfaces that seamlessly adapt to various devices and screen sizes has greatly resonated with me. Ensuring a consistent and user-friendly experience across different platforms is both technically intriguing and adds a vital layer of creativity to my work.

API Integration

Exploring the integration of external services, particularly through APIs, has been a standout aspect of my learning journey. The concept of leveraging diverse data sources and functionalities to enhance the functionality and user experience of interfaces is truly exhilarating.

Single Page Applications (SPAs)

The concept of Single Page Applications (SPAs), where content dynamically updates without a full-page reload, has captivated me. This approach transforms user experiences and aligns perfectly with my appreciation for efficiency and smooth interactions.

I feel I learnt these topics, concepts, and/or tools really well:

Responsive Design:

- In Task 2.2P, I developed a responsive calculator app that dynamically adjusted its layout across various devices, demonstrating my understanding of responsive design principles.
- For Task 2.3, I designed a website template for a corporation, emphasizing responsiveness to ensure an optimal user experience on different screens.
- My ability in responsive design is further highlighted in my cocktail app, where I ensured the app remains functional and visually appealing across multiple platforms.

API Integration:

- Task 7.1P involved fetching data from a public API, a skill I refined and applied in the development of my cocktail app.
- In Task 7.2, I successfully extracted data from a text file, showcasing my adaptability in integrating data from various sources.

Single Page Application:

- In Task 9.1P, I built a single-page application, laying the foundation for understanding SPA mechanics.
- Task 10.1P required creating a single-page application using vue-cli, further solidifying my grasp of this concept.

I still need to work on the following areas:

State Management with Vuex: Although I have developed a strong foundation in creating dynamic user interfaces with Vue.js, I recognize the importance of diving deeper into more complex state management scenarios using Vuex. Leveraging state management libraries like Vuex will allow me to efficiently manage and share data between components, leading to better-organized and more scalable applications.

Backend Integration Beyond Public APIs: While I have successfully integrated public APIs into my projects, I understand that integrating with backend systems presents unique challenges. To enhance my skills, I aim to work on projects involving connections to backend databases and the creation of custom APIs. This experience will improve my ability to build comprehensive, end-to-end applications

My progress in this unit was …:

My experience in the "Interface Design and Development" unit has been very rewarding. Throughout the semester, I've significantly improved my understanding and application of key concepts.

I have been actively involved in the course, attending lectures, tutorials, and engaging in hands-on exercises. Topics such as responsive design, API integration, and single-page applications particularly intrigued me, prompting thorough exploration and practical application.

The feedback I received from my instructor and peers was invaluable, helping me to refine my work and pinpoint areas for improvement. This collaborative learning environment broadened my perspective and enhanced my understanding.

I am especially proud of the portfolio I've built, which highlights my skill development over the semester. As the semester concludes, I look forward to utilizing this newfound knowledge and expertise in my future endeavors in interface design and development.

This unit will help me in the future:

Learning Vue.js, API integration, and Single Page Application (SPA) development has equipped me with essential skills that will significantly benefit my future as a software developer. Here's how:

1. Enhanced Front-End Development Skills:

Vue.js: Mastering Vue.js has enabled me to create dynamic, reactive user interfaces with ease. Vue.js's component-based architecture promotes reusable and maintainable code, which is crucial for developing scalable applications. As a lightweight and flexible framework, Vue.js allows for rapid prototyping and efficient development processes, making it an invaluable tool in my software development toolkit.

2. Seamless Data Interaction with APIs:

API Integration: Learning how to integrate APIs has opened up a world of possibilities for connecting different systems and services. Whether it's retrieving data from a third-party service or interfacing with a custom backend, understanding API integration ensures that I can build applications that are both powerful and flexible. This skill is essential for creating applications that can leverage external data and services, providing enriched functionality and a better user experience.

3. Modern Web Application Development:

Single Page Applications (SPAs): Developing SPAs has taught me how to create seamless, fast, and engaging user experiences. SPAs load a single HTML page and dynamically update the content as the user interacts with the app, eliminating the need for full page reloads. This results in a smoother and more responsive user experience, which is a standard expectation in modern web applications. Proficiency in SPAs positions me well for developing high-performance web applications that meet contemporary user expectations.

If I did this unit again I would do the following things differently:

If I were to retake the "Interface Design and Development" unit, I would approach my learning with several key adjustments based on my experience and insights. Here's how I would do things differently:

Early Engagement with Advanced Topics: I would focus on engaging with advanced topics, such as state management with Vuex, from the beginning of the course. Dedicating more

time to understanding and practicing these challenging areas would enhance my proficiency and provide a deeper grasp of the subject matter from the outset.

Consistent Practice with Backend Integration: Recognizing the importance of backend integration, I would proactively seek opportunities to work on projects that involve connecting to backend databases and creating custom APIs. This hands-on experience would help bridge the gap between theoretical knowledge and practical application, making me more adept at building comprehensive applications.

Maximizing Office Hours: I would make better use of the office hours provided by the lecturer. Actively engaging in discussions, seeking clarifications on doubts, and requesting additional guidance would deepen my understanding and allow me to address any challenges promptly.

Implementing these changes would optimize my learning experience in the "Interface Design and Development" unit. These adjustments would enable me to fully leverage the course content, enhance my skills more efficiently, and significantly contribute to my academic journey and future career prospects