Reflection Report on Sayyara

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1 Changes in Response to Feedback

1.1 SRS and Hazard Analysis

We received TA feedback to add more details to our requirements. This was updated for our functional and nonfunctional requirements to give more details, which makes our requirements more focused. We also had feedback to make our requirements more specific. For example, specifying constraints for inputs and adding a list/table of figures. As a result, we updated the SRS to address this feedback. After the Rev 0 Demo, we got TA feedback to add a cancellation reason when a customer or a shop cancels an appointment. This was added for our Rev 1 Demo and added as a requirement in the SRS. Another change we made was to reduce the scope of our project, which resulted in changing the SRS. The scope change was made in agreement with the project supervisor, and only features that were not necessarily essential for the application were taken out. We also improved the introduction for the Hazard Analysis in response to TA feedback.

1.2 Design and Design Documentation

Based on TA feedback, we have revised our System Design documentation to include descriptions for mock-ups and clarification on the system variables. Additionally, the Module Interface Specification document was updated to reflect changes during development and changes from feedback for the Verification and Validation Plan and Report.

1.3 VnV Plan and Report

The TA gave us feedback to add more details to our tests to make the tests more specific. We also conducted a usability survey with customers and auto shop owners. From doing the usability survey, there were a few feature requests from the test users which were some bug fixes, adding clickable links on the shop profile, password requirements, and filter buttons for the search page. We also demoed the project to our project supervisor, which was very impressed with our progress. Our project supervisor was also one of our test users for the project, and he thought the project was very well done. These upgrades were added for the Rev 1 Demo and updated in our VnV plan and report. We also updated the VnV report to include more specific changes due to testing. For example, we included the reason why the test failed and what changes were made to address the failing test case.

2 Design Iteration (LO11)

Initially, our team took the requirements provided by our project supervisor, Nabeel, and created formal specifications which were later translated to mock-ups. Our team took an incremental and iterative approach, where we would continuously collect feedback from our stakeholders, including the project supervisor, the course TA and instructor, auto repair shop mechanics, and other potential users. During implementation and prototyping (i.e., mockups), we realized critical flaws in the workflows and user experience envisioned by the project supervisor, and we made design changes to address these flaws.

Examples include implementing a live quote system, adding a common landing page for the web application, and organizing features into dashboards. We also incorporated feedback from the Rev 0 demo. For example, we incorporated the ability to cancel appointments, the ability to edit appointments, and added notifications (in the form of toasts) to confirm various user actions have triggered an event.

3 Design Decisions (LO12)

Due to time limitations and resource limitations (i.e., our team only had 4 team members), we had to work with our project supervisor to determine an appropriate scope for the project. This led to the necessary sacrifice of some features we would have loved to design and implement. We also had to make critical assumptions due to time constraints, which would allow us to limit the scope. For example, we made the assumption that each vehicle owner would only have one vehicle. For the scope of this project, we simplified the scheduling process to only support one appointment at a time. However, in reality, a shop would likely have multiple service bays and employees, allowing for concurrent and parallel appointments. As a result, the product is missing some features necessary for commercialization of the product, such as an employee invitation process using email services, the ability to edit customer, vehicle, and shop metadata.

4 Economic Considerations (LO23)

Yes, there is certainly a market for our product. The market is segmented into two segments: (1) auto repair shop owners, and (2) anyone who owns a vehicle in Canada. This product provides many features and functionality which allow both vehicle owners and auto repair shops to more easily interact. Furthermore, this allows auto repair shops to streamline their administrative tasks and operations, allowing them to spend more time repairing cars to drive and generate revenue.

In terms of marketing the product, various marketing campaigns and materials would be required. The content of these marketing materials should be tailored towards two main audiences: auto repair shop owners and vehicle owners. These are typically the decision makers who would decide whether to onboard to the application.

The product would be free to use for vehicle owners. In the future, the application would process payments, which would allow for a revenue stream through transaction fees. For shop owners, there will be a subscription model with three tiers, each unlocking a separate set of features. The free tier will include a set of basic functionality, which includes the current set of features. The second tier would include additional features such as analytic dashboards to monitor work progress, appointments, quotes, etc. The second tier would cost $5 per month. The third tier would include additional features which includes a set of advertising and marketing features within the platform, such as featured spotlight (to display the spot at the top of results for a specified number of days per month), in-app advertisements, email lists and campaigns features, and marketing analytics (e.g., number of clicks). The third tier would cost $10 per month.

There are currently no active users, as this product is scoped as an initial prototype for the project supervisor. It was built with the intention for the product to be extended further to support commercialization after the completion of this capstone project and course.

5 Reflection on Project Management (LO24)

5.1 How Does Your Project Management Compare to Your Development Plan

Yes, we followed the development plan at met during the weekly meeting times. We followed the team communication plan as well. We used most of the technologies listed in the development plan. There was a component library mentioned in the development plan, which we had to switch to a different one after trying it for the proof of concept demo. The team chose a new component library and updated the development plan.

5.2 What Went Well?

Having weekly meetings as stated on the development plan was very helpful for our project management. This made us set aside a dedicated time to figure out the next steps and work together as a group. Some technologies that worked well were our CI/CD pipeline for building documents, unit & integration tests, and for performing code styling checks. This made processes more efficient when writing documents, ensured that there were no major issues with each change by running a testing check, and enforced specific code styling for consistency.

5.3 What Went Wrong?

Nothing major went wrong as all team members committed and followed through with the plan. All team members were also communicative when any issues had arisen. However, our team could have improved on the time management, specifically in the delivery and implementation of features for each milestone. This would have allowed for more time to polish the application, and iterate based on testing and feedback. In terms of technology, our team found the set of technologies used supported the project management processes well, and we did not experience any difficulty or challenges relating to technology.

5.4 What Would You Do Differently Next Time?

If given the opportunity, we would have loved to collect more user feedback to further improve our design and user experience. Next time, we would plan for more time in order to get iterative feedback from test users. We would also revise the scope by planning to include front-end integration tests in the scope, as well as refine the set of features for the initial project. This would entail reducing the set of features within the scope and punting some features as stretch goals. This would allow us to polish and refine the most critical features. To improve on time management, our team would set soft deadlines for every feature. This would allow our team to set expectations, leave a time buffer for polish, and allow the team to better coordinate tasks. One additional project management change we would make is to incorporate a more defined and strict style guide. Given that there are many ways to do things, for example, defining a function in TypeScript, structuring classes and components in React, etc., it would be beneficial to have an agreed upon style to enforce uniformity and consistency among code.