Project Deliverable H: Prototype 3 and Customer Feedback

Tyler Heimbecker #300232288
Emily Thompson #300238169
Nicolas Becerril #0300231477
Riley Johnston #300119395

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Test ID	*Test Objective (Why)*	*Description of Prototype used and of Basic Test Method (What)*	*Description of Results to be Recorded and how these results will be used (How)*	*Estimated Test duration and planned start date (When)*
001	Ensure Functionality of each subsystem by testing each button	First prototype designed to test functionality of the subsystem (Test)	Check to see if the subsystem's first prototype can perform the tasks outlined in the design drawings (basic functions and commands).	November 2nd Duration: 2hr per subsection
002	Optimization and debugging of subsystems (Some issues with getting buttons to perform the correct commands and some bugs to work out after prototype 1)	Second prototype builds upon the first by improving usability and taking feedback gained during testing into account (Analyze)	Check to see that layout is easy to use, size and style of buttons is acceptable	November 8th Duration: 1hr per subsection (Over a few days, few subsections per day seemed to work over reading week)
003	Improve Aesthetics and Finalization of subsystems (Change fonts, add style tags, make sure adding new components is as seamless as possible, takes even less time to input)	Third prototype allows us to develop a clean and final product that will incorporate the original aesthetics and designs (Inspect) (Some issues with button commands, will be fixed and styled differently in third prototype)	Look through the program and make sure all subsystems are up to the agreed upon standards. Merge all panels into one design to show clients (make sure all are included)	November 15th Duration: 2hr per subsection

Future test plan objectives (for another prototype, if one was required/to improve what we already have): Communicating and getting feedback on ideas, checking feasibility, analyzing critical components of subsystems, reducing risk and uncertainty and lowering the number of tasks required to add a new element or edit data (time and task efficiency). Changes to the design will be finalized before final project presentations and design day. If we had to change anything, we would want to make buttons to change from tab to tab more effectively and so that tasks can be accomplished in even less time. Overall, we are happy with our final product and the decisions we made along the way.

The reason for our third prototype testing was to ensure that each subsystem was aesthetically pleasing, with a practical use layout, appropriate button/label/font size, that has proper functionality and guarantees that the client's needs are met.
We achieved this by inspecting each button, label, timer, and the panel as whole as a group. Previously, since we each took ownership of one subsystem, we had all of our work separate and critiqued each subsystem individually. In this prototype, we merged all of the panels into one, which gives us the final prototype with each subsystem.

In our first prototype, we really wanted to focus on the functionality of the design. This was where we drew the first buttons and inputted commands for them to execute. In the second prototype, we focused on improving the buttons and layout while double-checking functionality. This is where we checked that everything is easy to use and appropriate. We also made sure to include new elements that were missing, and remove some elements that made the design too cluttered. Adding new elements that we hadn't initially thought of improved the design and made it easier to understand. Removing unnecessary elements made the design cleaner and in our opinions, more efficient for the client to use. This tied into our third prototype, where we really focused on overall aesthetics and whether or not each tab was easy to work with.

As outlined in Deliverable G, for this third prototype we started off by inspecting the key design features. Once we reached a consensus about which elements should stay, which elements should go, and which elements could be improved upon, we focused specifically on the appearances of the main panel. This was also the point in our process where we merged all the panels to have our combined main panel in Dashboard with each subsystem under a different tab. To reiterate from last Deliverable: "The purpose of the first prototype design was to test functionality of the subsystem (test). The purpose of the second prototype design was to analyze the layout and functionality of each subsystem (analyze). The purpose of the third prototype was to review the content, functionality, aesthetics, and ease of use before presenting to the class, the client, and on design day (inspect). For this prototype, all of the subsystem

panels were combined into one panel that uses tabs to select each subsystem. We will use this prototype to set up our Xpression display.

Prototype 3 Test Results

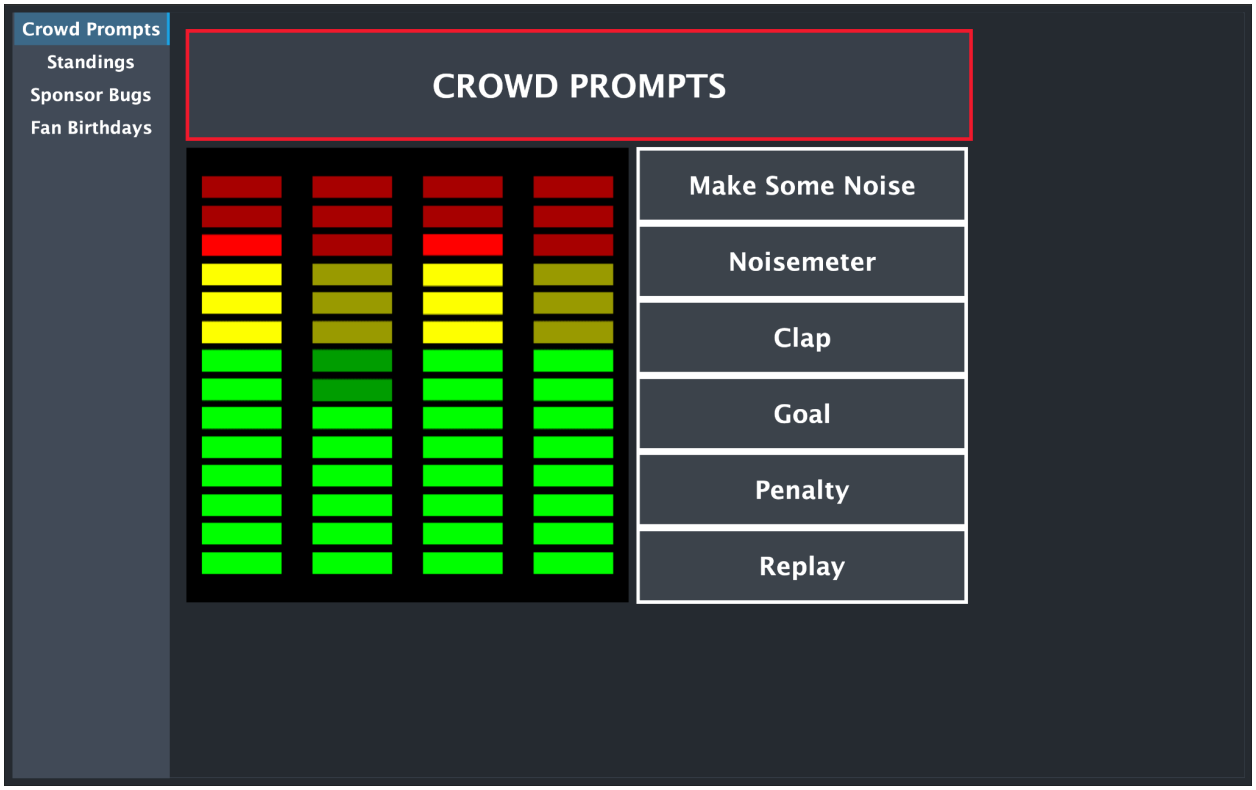
Subsystem	**Visually clean and easy to read/use**	**Effective Layout**	**Easy to use panel (simple user controls)**	**Aesthetics**	**Functional and efficient (time frame to perform tasks)**
Crowd prompts	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES
Goalies matchup	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES
Standings	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES
Sponsor Bugs	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES
Birthdays	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES	1. YES 2. YES 3. YES 4. YES
Combined/Main Panel (includes all subsystems)	YES	YES	YES	YES	YES

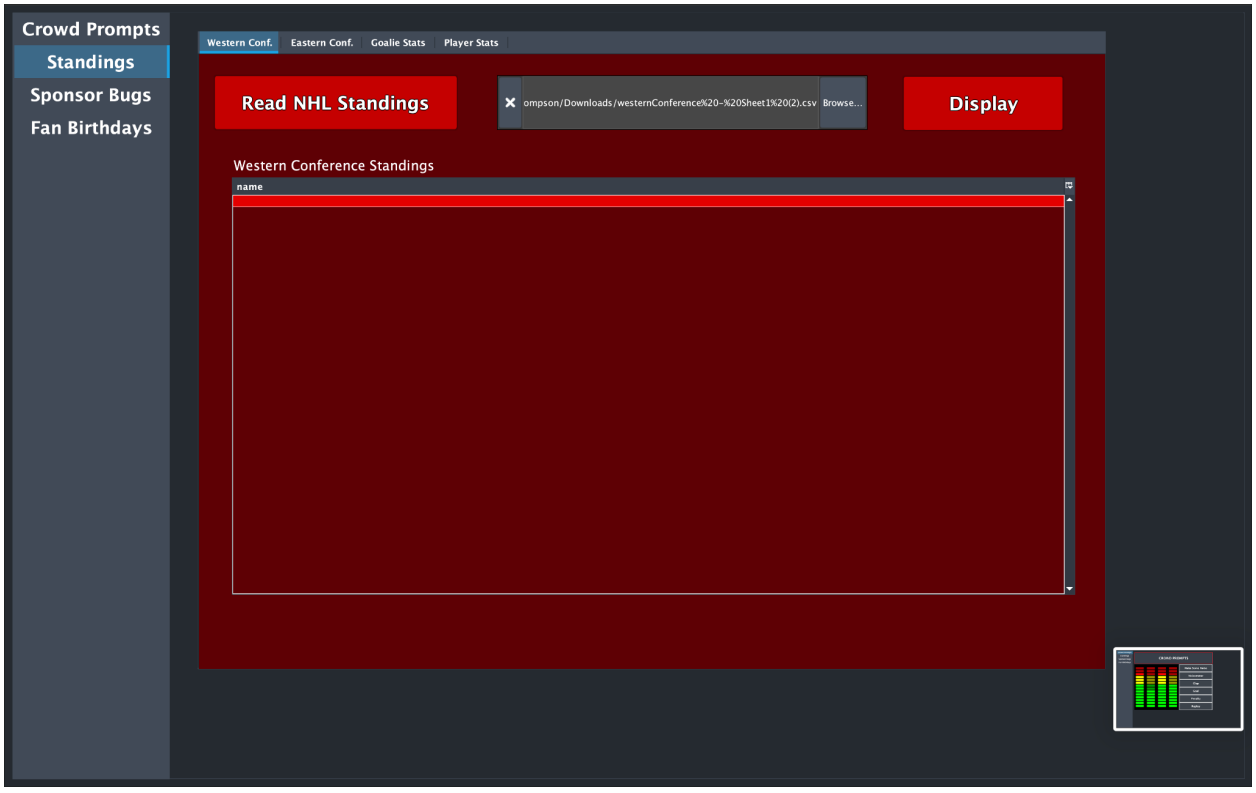
As we did for the first two prototypes, we held group meetings to test and discuss the prototype as a team. We were able to confirm that, after combining all subsystems into one panel, all of the subsystems still function as intended. We also agreed that the tab system is the simplest and most intuitive way to navigate the integrated subsystems on a single dashboard panel.

Some of the challenges we faced throughout the project surrounded communication and feedback, as well as time constraints. As a group, we all have different class and life schedules and it was difficult to find time to meet outside of this class. The lab times that were focused on project work helped us get on the same page. This relates to the time constraints issue. This project does take a lot of time and effort, and with the learning curve that came with designing on Dashboard, it was one of our biggest challenges. Communication with clients was also difficult. Since we only met a few times, we did not get as much feedback as we wanted to for our designs. We felt that with more guidance and constant constructive feedback, the product might be better catered to the customer.

Note: No changes were made to the cost plan.
Initial Cost Plan and Estimate:

Material/Hardware/Software	Cost
Dashboard	$0
Total Cost	$0


Crowd Prompts
Standings
Sponsor Bugs
Fan Birthdays
CROWD PROMPTS
Make Some Noise
Noisemeter
Clap
Goal
Penalty
Replay


Crowd Prompts
Standings
Sponsor Bugs
Fan Birthdays
Western Conf.
Eastern Conf.
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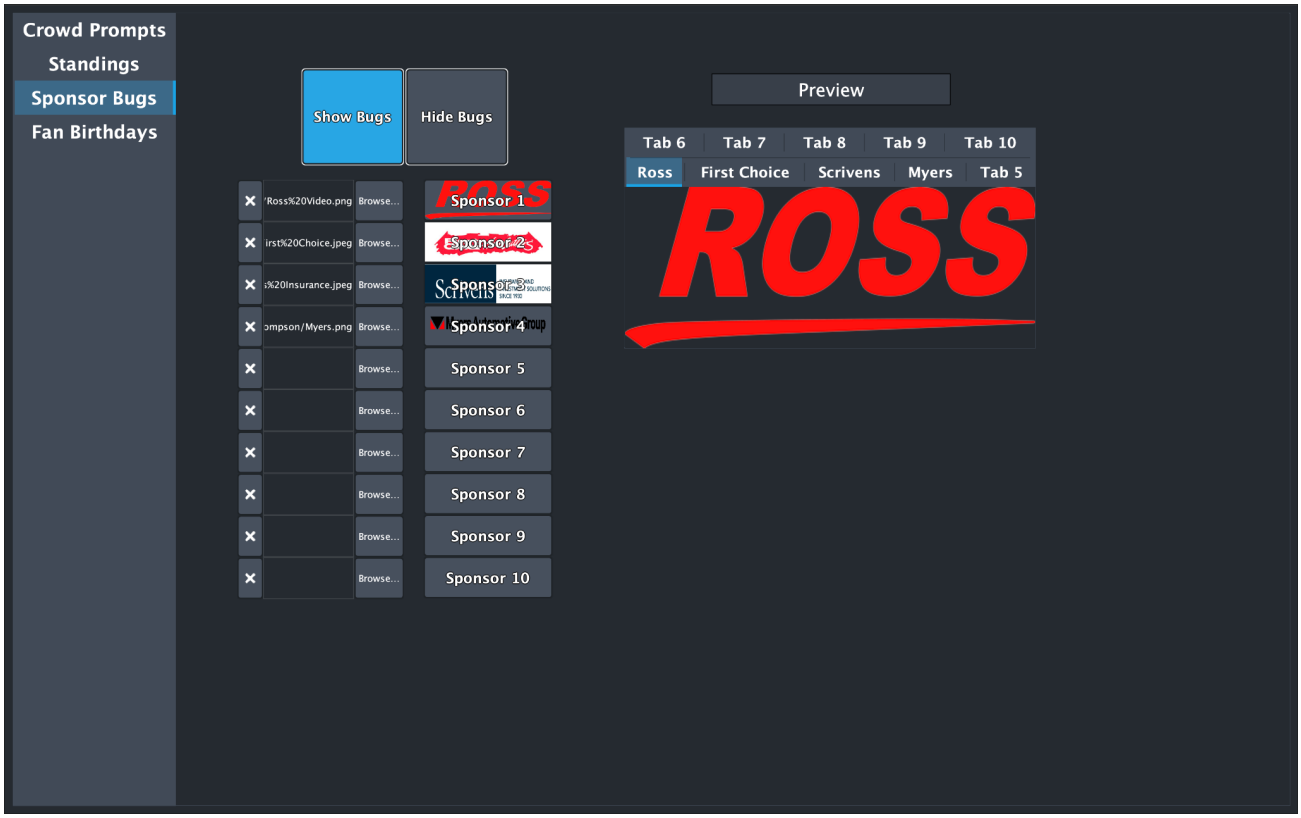
Crowd Prompts
Standings
Sponsor Bugs
Fan Birthdays
Show Bugs
Hide Bugs
Preview
Tab 6
Tab 7
Tab 8
Tab 9
Tab 10
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First Choice
Scrivens
Myers
Tab 5
ROSS
Sponsor 1
Sponsor 2
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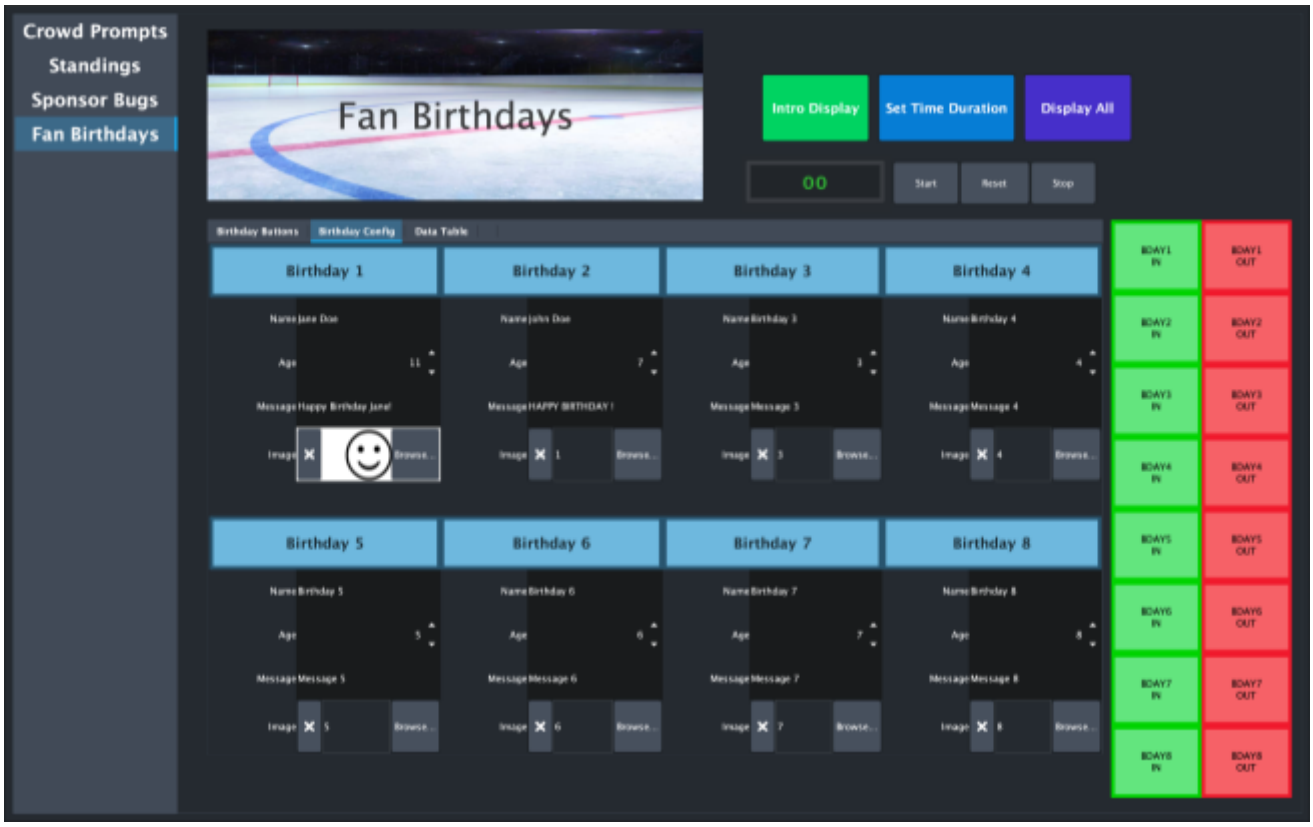
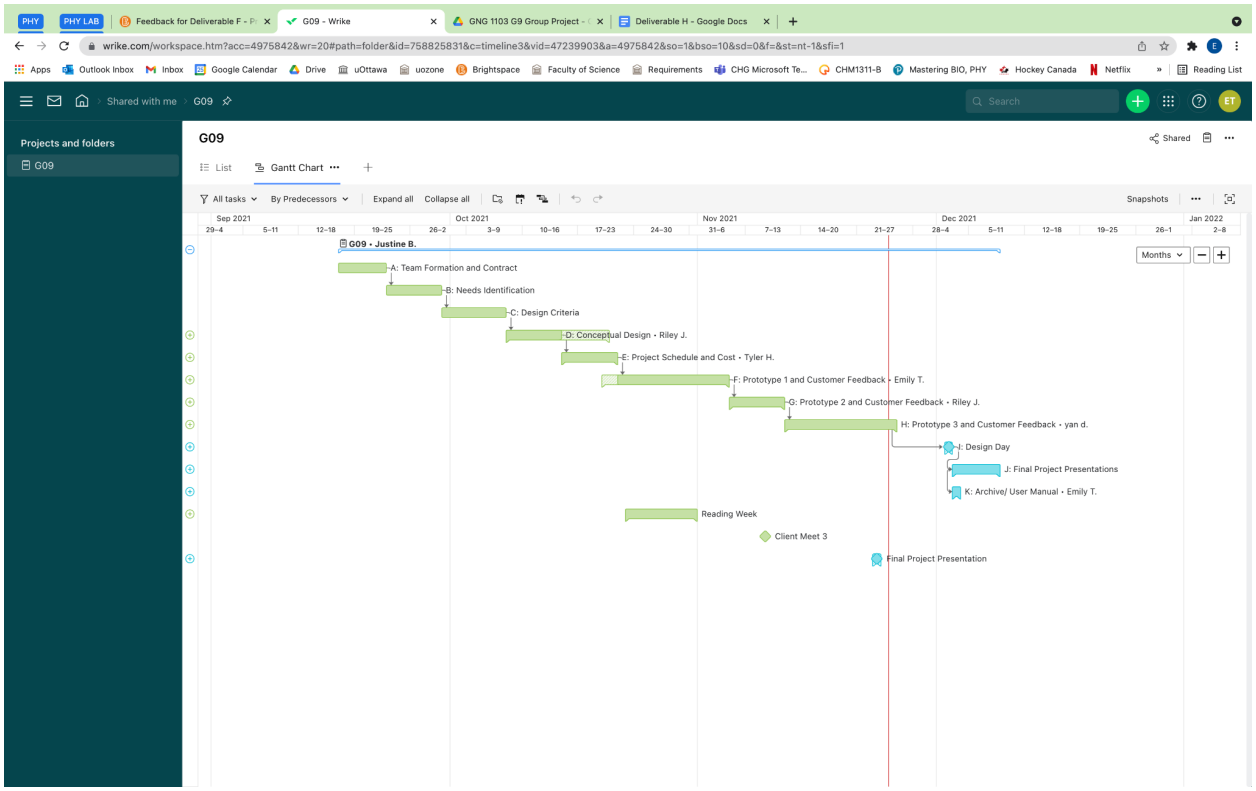

Crowd Prompts
Standings
Sponsor Bugs
Fan Birthdays
Fan Birthdays
Intro Display
Set Time Duration
Display All
00
Start
Reset
Stop
Birthday Buttons
Birthday Config
Data Table
Birthday 1
Birthday 2
Birthday 3
Birthday 4
Birthday 5
Birthday 6
Birthday 7
Birthday 8

[Link to google drive folder containing subsystem prototype grid files](#) (3rd prototype)



Project Deliverable H: **Prototype III and Customer Feedback**

GNG 1103 – Engineering Design

Faculty of Engineering – University of Ottawa

Objective:

Develop your third prototype. Get customer feedback on your prototype.

Instructions:

1. Develop a prototype which will be used to achieve the objectives your team has set out in the plan created in the last deliverable (i.e. you need to answer the "why", "what" and "when" of prototyping).
    1. Remember: a prototype is not normal work on your project, it is something that has a smaller, targeted objective with specific tests and measurable results.
2. Carefully document your prototyping test plan, analysis and your results (including detailed images of your prototype).
3. You must gather feedback and comments on your ideas and prototype from potential clients/users that you have sought out and identified on your own and/or your actual client. It is now after the third client meeting so be resourceful to find other users who can give you feedback, however it can be as easy as asking your friends and family a few questions.
4. If applicable, update your target specifications, detailed design and BOM after tests are completed and analyzed.

Since this will be your team's third prototype, your justifications and reasoning for this prototype should include a short explanation of your results from your previous prototypes and how this third prototype continues the development of your solution. This third prototype should be a fully functional version of your solution (i.e. a comprehensive prototype). Keeping in mind the total course budget of $100 or $50, get creative in order to improve your results. It does NOT need to be the version you would actually sell.

Again, it is strongly recommended that you start early. Keep in mind that this prototype should be comprehensive and will require a significant amount of time to complete.

Start thinking about the information you will need for the user manual (deliverable K). You should be able to start the documentation of your final prototype as you go through this deliverable.

Task Plan Update:

1. Update your Wrike task boards to include any changes in estimated task duration, missing tasks, task responsibilities, milestones, or dependencies, based on your better understanding of the project or based on feedback that you have received from your PM/TA.
2. Include more detailed sub-tasks for the tasks that will need to be completed over the next few weeks.
    - *Important note*: It should be possible for ONE person to complete each identified task or sub-task in the allotted time. The allotted time should also be *reasonable*, based on the task owner's availability. Everyone should be doing their fair share of the work.
3. Verify and update the task start dates and end dates for each task, based on your project progress.
4. Ensure that you have taken into account each team member's *actual* availability over the next two weeks, as well as significant events, such as particularly high course loads, exams or travel, which might be going to limit actual project work progress.
5. For *each* person in your group, it should be possible to determine:
    - What was completed last week (i.e. "**Completed**" tasks),
    - What will be done next (i.e. "**In Progress**" tasks)
    - If tasks are going to be put "**On Hold**" or "**Cancelled**" altogether
6. Any and all group "Issues" should be discussed and dealt with, ideally with the assistance of your Project Manager (PM). This should happen during **each** of your lab sessions or can happen earlier, using your defined communication methods. As already explained, it is essential to keep your PM/TA "*in the loop*" throughout the term. It is usually *not* a good idea to ignore conflicts between team members. Instead, you should deal with them in a constructive way.