















Entries By Date








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Budget Request

By: Zoe Rizzo

Focus: **Budget**

Date: **04/19/2024**

Our budget comes primarily from two sources: The RIT Student Government and outside sponsorships and grants. We also receive club dues from team members, but that typically only covers the cost of t-shirts. We also charge event registration fees for our VEX U and VRC events, which usually covers the cost of the additional fields.

This year, our expected budget is around \$27,000 based on previous years combined with our expected increases. Most of the expenses come from travel and lodging, specifically for the World Championship since we try to take as many people as possible.

Each year, we have to submit a budget request to the Student Government with our expected budget. Based on previous years' average sponsorships, event registration fees, and clubs dues, we requested around \$20,000 from the Student Government.

Group	Item	Quantity	Cost Per	Final Per Item	Total	Explanation
Registrations	Team Registrations	1	\$200.00	\$200.00	\$350.00	(Cost to register the team through RECF)
	Event Registration Qualifier	1	\$150.00	\$150.00		(Cost to register to host event)
Event Travel and Lodging	Qualifiers	3	\$1,000.00	\$3,000.00	\$13,250.00	(Cost to travel to comps during the year)
	World Championship (2023-2024 + Inflation)	1	\$10,250.00	\$10,250.00		(Cost of traveling to dallas with 12 people)
Event Hosting Expenses	VRC Event Equipment	2	\$518.00	\$1,036.00	\$2,931.50	(Vex equipment needed to host event)
	VEXU Event Equipment	1	\$518.00	\$518.00		(Vex equipment needed to host event)
	Event Electronics	1	\$250.00	\$250.00		(Electronics to run the event software)
	Tech Crew	1	\$700.00	\$700.00		(Tech Crew for VRC Event – 4 hours)
	Renting Chairs (RIT Rental)	50	\$5.75	\$287.50		(Chair rental for hosted events)
	Table Rental	10	\$14.00	\$140.00		(Table rental for hosted events)
Fields	Field Tile Sets	3	\$261.45	\$784.35	\$4,947.58	(Tiles the game is played on)
	Tile Carrying Sets	3	\$41.79	\$125.37		(Used to carry the field tiles)
	Game/Field Pieces	4	\$589.99	\$2,359.96		(Cost to buy new game peices for new 2024 game)
	Portable Fields	2	\$838.95	\$1,677.90		(Used for hosting events and practice)
Parts and Supplies	3D Printer filament	10	\$24.99	\$249.90	\$4,339.02	(Used to 3D print parts for the robot)
	New 3D Printers	2	\$249.99	\$499.98		(Replacing broken 3D printers from 2019)
	AI Vision Sensor (Camera)	2	\$250.00	\$500.00		(Used for VEX AI vision on field)
	Jetson Nano	2	\$150.00	\$300.00		(Used with vision sensor for AI training)
	VEX Brain	2	\$369.98	\$739.92		(Replacing broken brains from this year)
	Various Gears, Chain, Sprockets, Shafts	1	\$350.00	\$350.00		(VEX required Micro-controller)
	Batteries	6	\$72.49	\$434.94		(Used for powering 2 robots (with spares))
	Screws, Shaft Collars, Hardware	1	\$250.00	\$250.00		(Used for building 2+ Robots)
	Metal	8	\$41.79	\$334.32		(Used for building 2+ Robots)
	Mold Making Kit	4	\$44.99	\$179.96		(Used for Custom Molded Wheels)
Team Gear	Organization Units	10	\$50.00	\$500.00		(Storage organizers for cabinets, etc...)
	Banner (Club Promotion/Sponsorships)	1	\$600.00	\$600.00	\$1,629.95	(Banners to display at events and the SHED)
	Cricut Vinyl	5	\$5.99	\$29.95		(Vinyls to make the banners and to put on robots)
Fundraising / Income	Team Merchandise	1	\$1,000.00	\$1,000.00		(Team shirts, sweatshirts, etc.)
	Total Expenses				\$27,448.05	
	Event Registration - VRC Event	32	\$60.00	\$1,920.00		
Fundraising / Income	Sponsorships/Donations	N/A	N/A	\$4,000.00		
	Member Dues (Projection)	22	\$50.00	\$1,100.00		
Total income				\$7,020.00		
Total Request				\$20,428.05		

Expected Budget Overview Spreadsheet

2024-2025 Budget Allocation

Total -- \$27,448.05

Team Gear -- \$1,629.95
5.9%

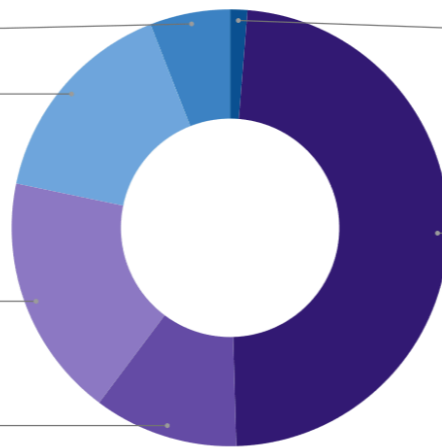
Parts and Supplies -- \$4,339.02
15.8%

Vex Fields -- \$4,947.58
18.0%

Event Hosting Expenses -- \$2,931
10.7%

Registration -- \$350
1.3%

Event Travel and Lodging -- \$13,250
48.3%



Expected Budget Overview Pie Chart

We don't expect to receive the full amount requested, so we will have to reach out to more sponsors throughout the season to cover costs of running the team.

Continued in **Budget Tracking** (Pg. 26)

We need to reevaluate the documentation process and determine what software to use. In previous years, the team used a process in which team members write entries in Google Docs, which are then transferred to Overleaf to be formatted using LaTeX.

This has posed numerous issues, the biggest one being that the formatting typically fell to one person, burdening one team member with the majority of the work. On top of that, information would be scattered throughout many different communication and documentation platforms, which resulted in extensive work to find information for entries.

The ideal software should have the following features:

- **Collaboration:** All members should be able to easily contribute.
- **Usability:** Members should be able to easily learn and understand the software.
- **Flexibility:** The notebook should be able to have flexibility for placing images, tables, charts, etc. It should also be easily modified.
- **Final Output:** The notebook should be formatted to our standards. It should be readable, clear, and easy to understand.

Each software that we look at will be tested by setting up mock notebooks to see which best fits our needs.

Continued in **Google Docs + Overleaf LaTeX** (Pg. 5)

Google Docs + Overleaf LaTeX

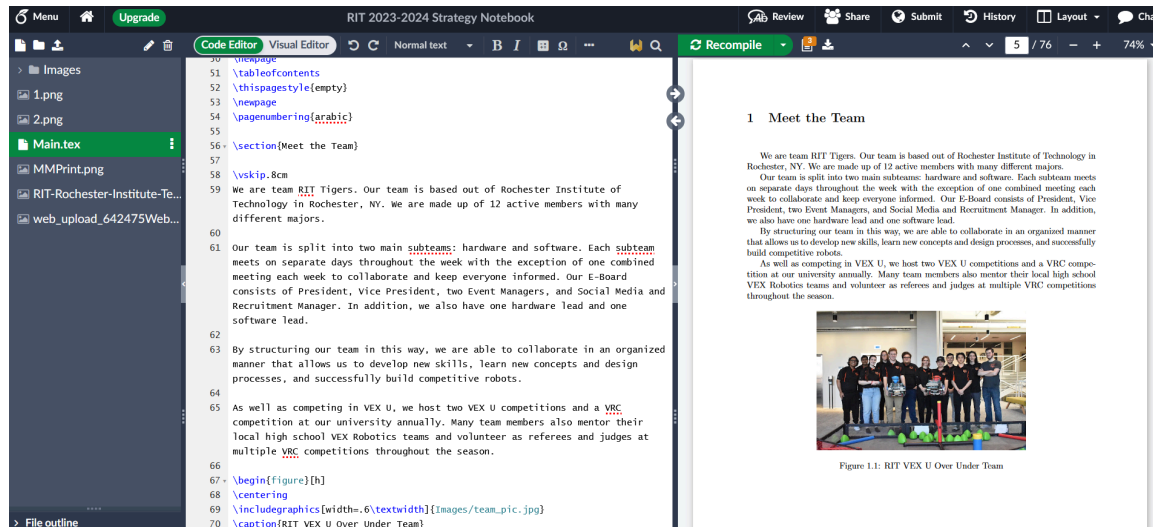
By: Richie Sommers

Focus: Notebook Software

Date: 05/19/2024

Continued from **Notebook Software** (Pg. 4)

The team used this workflow for all previous notebooks. All team members would write entries in Google Docs, which would then be moved to Overleaf to be formatted using LaTeX by one member.



Features:

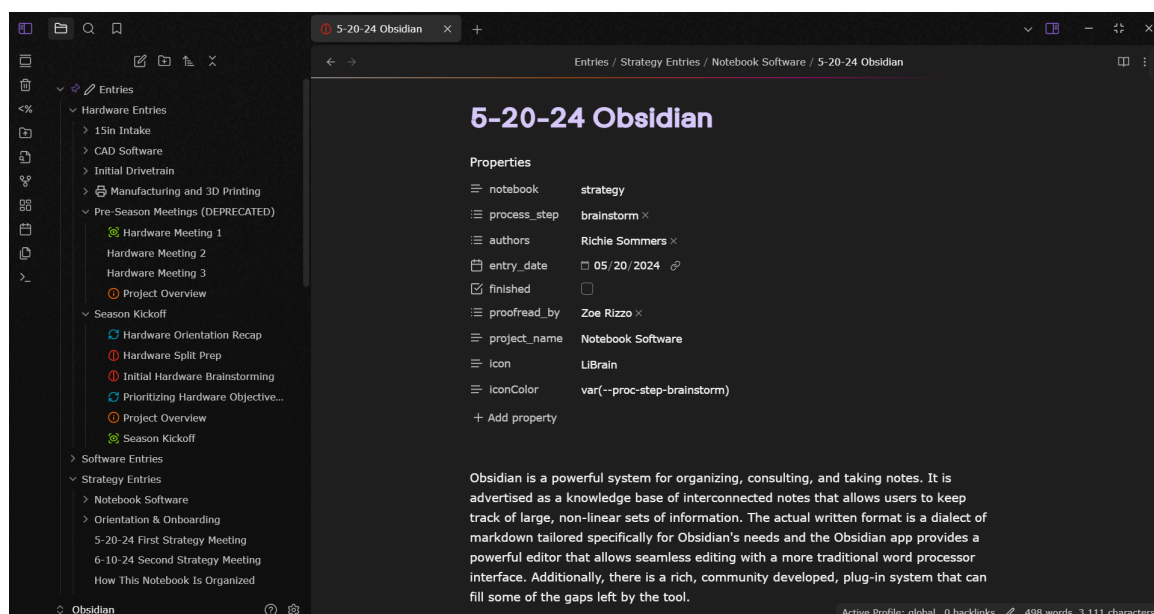
- **Collaboration:** For most of the team, this solution is great. Team members can add entries, edit each other's entries, etc. However, for the one team member who has to boot the entries over to Overleaf, this solution is not ideal. While Google Docs is highly collaborative, Overleaf only allows two members per document.
- **Usability:** Google Docs' usability is very high, as it is a text-based editor. Overleaf's usability is very poor, using LaTeX which has a very steep learning curve. Another issue with Overleaf is that all photos have to be imported into the document. This means that any photos in Google Docs would have to be saved by one person and imported to Overleaf, which takes up a large amount of time.
- **Flexibility:** Both Google Docs and Overleaf are very flexible. Overleaf allows very precise formatting and easily supports image uploads.
- **Final Output:** The final notebook would be very nicely formatted and easy to follow and read.
 - Overleaf utilizes an auto-generated table of contents that is dynamically updated as more pages are added.

Overall, Google Docs and Overleaf is not the best solution. While this process is highly flexible and results in a professional-looking notebook, the collaboration and usability are very poor.

Continued in **Obsidian** (Pg. 6)

Continued from **Google Docs + Overleaf LaTeX** (Pg. 5)

Obsidian is a powerful system for organizing, consulting, and taking notes. It is advertised as a knowledge base of interconnected notes that allows users to keep track of large, non-linear sets of information. The actual written format is a dialect of markdown tailored specifically for Obsidian's needs and the Obsidian app provides a powerful editor that allows seamless editing with a more traditional word processor interface. Additionally, there is a rich, community developed, plug-in system that can fill some of the gaps left by the tool.



Features:

- **Collaboration:** Collaboration is perhaps Obsidian's greatest weakness. Although members of the community have sought to provide it, the application does not by default support real-time, collaborative editing, and the 3rd party plugins leave much to be desired. However, the Obsidian project is simply a directory of markdown files and can be shared via Google Drive. This provides collaboration on the project level but would not allow two members to work together on a single note without the risk of overwriting the others' work. Idiomatic Obsidian use encourages a large number of short notes so this is not a complete roadblock but great care would have to be taken in the notebooking process to avoid the shortcomings of the tool.
- **Usability:** Markdown is a fairly simple format with which to write. It has a fairly small number of features and Obsidian makes using them very easy. Additionally, there are countless Obsidian tutorials online from which to learn. While the plug-in ecosystem is one of Obsidian's greatest strengths, for some plug-ins, the learning

necessary to use them could provide extra barriers of entry that using a more widely used tool such as Google Docs would avoid.

- **Flexibility:** Obsidian markdown is quite powerful compared to standard markdown implementations. However, it is still limited compared to the likes of Google Docs and LaTeX. It is simple to learn but with that simplicity comes a loss of some features. Specifically, this system does not allow for repositioning text and images while writing which could be an issue for the notebook.
- **Final Output:** By default, Obsidian can export PDFs of a single note content but does not support aggregating an entire project into one PDF. There are unofficial plugins to support this functionality, though. Importantly for the final product, since theming is not a choice left to the writer but rather to the settings of export, the notebook would have consistent formatting throughout. Using CSS, the output of the project can be tailored to best present information for a VEX Notebook without requiring mass edits to the entire document.

Overall, **Obsidian is very strong in its usability and the final output.** However, since its usability is so simplistic, some features that would be supported by Google Docs or LaTeX are lost. Additionally, collaboration is not ideal because it does not support real-time edits.

Continued in **Notion** (Pg. 12)

First Strategy Meeting

Focus: **Strategy Entries**

By: Ellie Bancroft , Zoe Rizzo

Date: **05/20/2024**

Meeting Concept

The goal for the meeting is to:

- Determine team goals
 - Determine prerequisites for those goals
- What robot **capabilities** are most important
- What robot **qualities** are most important
- What strategies should be used to deprive opponents of points
- What goals should the goals be for autonomous
- What should the goals be for skills

Definitions

In this section the word "capabilities" is referring to the objects the robot can achieve, and the word "qualities" is referring to the attributes the robot should have.

Example: A robots has the capability of scoring on a mobile goal, and it has the quality of being able to drive quickly

Team Goals

Win Tournament Champions at Worlds

Requirements for this goals:

- Winning autonomous in a majority of matches
 - Knowing where you are in auto
 - Localization through methods other than drive encoders
 - Ability to measure movement from sliding
 - Reaching the mobile goals on the line
 - Ability to move quickly
 - Ability to control Mobile Goals
- Ranking Highly in Qualifications
 - getting the Autonomous Win Point Consistently
 - Consider that there are other robots on the field

Winning Excellence at Worlds

- Rank within the top 30% in qualifications
- Score within the top 30% of programming skills
- Score within the top 30% of combined skills
- Whole team contributing to the notebook
- Thorough testing of designs
- Thorough Game Analysis

Last season, our team won Division Finalist and the Innovate Award at Worlds. We want to aim higher this year, but to do that, we need to recognize our shortcomings and identify what we need to do to improve.

There is significant overlap between these two goals. Both are about consistent thorough work before, during, and after matches. A major issue for the team last season was a lack of consistency, both from the game elements themselves and from decisions.

Areas of Consistency

Consistent Mechanisms

A foundation of consistency in matches is having a robot that works in every match. The elements of this are thorough design for the loads that parts are under and for quick repairability.

Consistent Programs

With autonomous being consistently important in matches and in programming skills, having a reliable autonomous is extremely important. Elements where our autonomous programs have been inconsistent in the past have been:

- Failure to account for Autonomous in Design
 - Example: the autonomous program is unable to detect the if robot slides from side to side on its all omni wheel drivetrain. If autonomous was considered measures to prevent or detect sliding could have been implements
- Failure to account for edge cases.
 - Example: The vision program detects a person wearing a red shirt outside of the field instead of detecting a red game element.

Consistent Practices

To achieve quality in results there needs to be consistency in quality throughout the process at all stages. Particularly with the relatively long time of a VURC season, it is

necessary to adhere to high standards for practices the whole time.

Game Analysis

From analyzing the characteristics of the game it was found that the maximum score for an alliance is 100 points and the maximum combined score in a match is 161 points.

Scoring

Climbing

This method of getting points is the greatest single source of points of any objective in the game, with the ability to get 24 points. Importantly these points cannot be taken away by the other alliance, unlike rings that can be descored or cancelled by rings in the negative zone.

Mobile Goals in Positive Zones

Moving mobile goals into positive zones can cause a significant swing in points in a match. Because only two mobile goals can go into positive zones, any benefit from a positive zone is one that an opponent cannot get.

Top Rings on Stakes

Top rings are the most important ring on a stake, getting 3 points compared to the 1 point that a ring normally scores. Especially because of the limited number of scoring locations it is especially important to optimize where rings are on the stakes to get as high of a score as possible.

Stopping Opponents from Scoring

Mobile Goals in Negative Zones

This is the most direct method of lowering the opposing score. Each ring on a mobile goal in the negative zone effectively takes away an equivalent ring from the opposing score, meaning that at maximum 16 points could be removed from the opposing alliance's score. The equivalent of 5 top rings and one ring not on top, or 16 rings not on top.

This reduces the maximum score of the opposing team from 100 points to 46 points. This is from a combination of the 32 point swing from the mobile goals being moved into the negative zone and forcing the other team to place rings in what would normally be suboptimal locations to counteract that.

Descoring Rings

Another very direct method of lowering the opposing score. It is legal to remove all rings except for those on the opposing team's alliance wall stake. Descoring rings also gives the opportunity to put your own rings on top.

Forcing suboptimal Ring placement

An indirect way of taking away points. Because there are a limited number of both scoring locations and rings on the field, it is most optimal to have two full mobile goals in the positive zone and the rest of the rings spread out on the top of the remaining stakes so the average ring is worth more.

Slowing opposing team's scoring

Slowing down opposing scoring, also called defense, is a common element across games. It is likely to be particularly important in this game in the endgame period both to ensure that mobile goals with the team's rings are in the positive zones, and to potentially prevent the other team from performing a high tier buddy climb. Preventing a climb is possible because climb protections only prevent actions while touching the ladder, so legal defense in any other part of the field is allowed.

Continued in **Second Strategy Meeting** (Pg. 24)

Notion

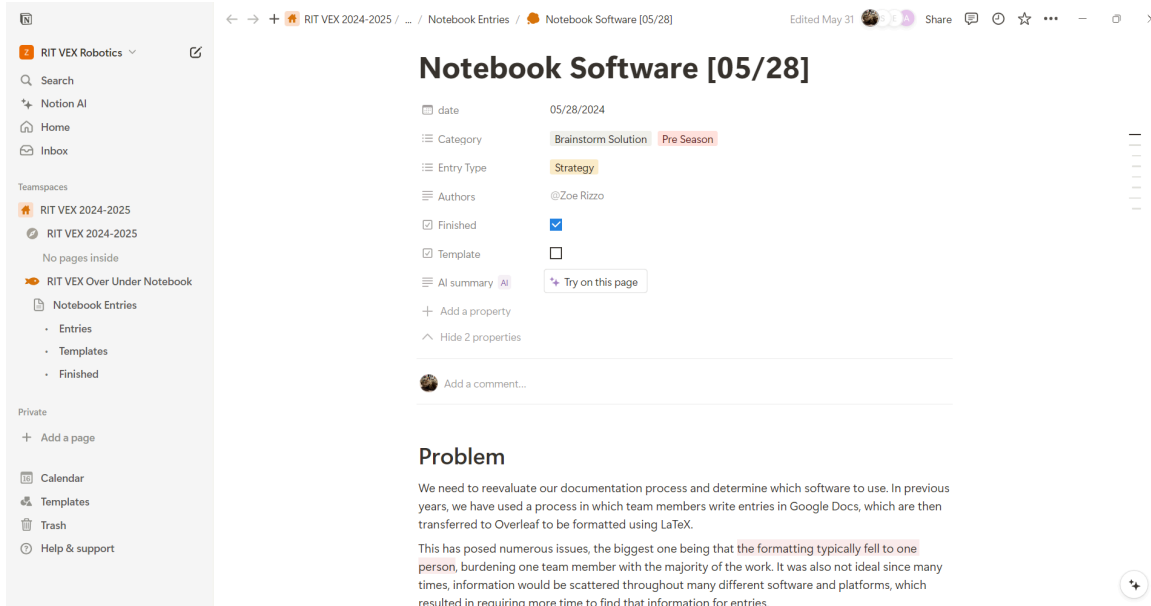
Focus: **Notebook Software**

By: **Zoe Rizzo**

Date: **05/28/2024**

Continued from **Obsidian** (Pg. 6)

Notion is a text-based editor used by many teams to document their design process. It is used for anything from note-taking or journaling to task management and progress checks to team organization. It is organized by workspaces, databases, and pages. Using Notion for the notebook would have us create a new page for each entry. The pages would all be a part of the same database. While Notion is just a text-based editor, it has a wide range of functionality. It has many formatting options, such as callouts, custom tags, author tags, code blocks, built-in tables and charts, and even slack message integration.



Features:

- **Collaboration:** Notion is very collaborative, using Teamspace to share documents. This would allow all team members to contribute equally. Notion also supports live updates, meaning that team members can update the same documents simultaneously.
- **Usability:** The biggest issue with Notion is setting up a notebook. If set up correctly, it can be very easy to use. However, it has a slight learning curve for set up. Another issue is exporting. Pages can be exported in bulk, but are downloaded as separate files. Since each page is its own entry, there would be many files to combine together at the end rather than exporting as one document.

Note

While testing Notion, a notebook template was set up, meaning that for this season the set-up drawback is low. In future seasons, this may differ depending on how the notebook is organized.

- **Flexibility:** Graphics are supported and can be easily added to pages. Notion also supports built-in charts and tables, making it easy to edit them later on. Template pages can also be created, which would cut down formatting time. Templates could be made for hardware entries, software entries, strategy entries, and steps of the design process. This would tie into usability, though, since it would increase the set-up learning curve.
 - Notion also has numerous small built-in features that can improve the notebook's organization and readability. These include callouts, code blocks, custom category tags, and author tags.
 - Another feature that Notion has is databases. If we used Notion for the notebook, each page would be an entry, and the pages would all be a part of the same database. This would allow us to sort pages by filters using category tags, checkboxes, etc. If we implemented this, we could sort by finished/unfinished entries, use template pages, and have different notebook views. This would allow the notebook to be more organized, easy to navigate, and easy for everyone to understand.
- **Final Output:** A Notion notebook would be very easy to follow and readable. The biggest concern with output would be exporting. The process of exporting a Notion notebook has many steps, but is more tedious than high effort. The free plan of Notion does not allow multiple PDFs to be exported at once. Instead, it would have to be exported as multiple HTML files, then converted to PDFs. From there, the PDFs would have to be combined and numbered.
 - One downside to Notion compared to LaTeX is a table of contents. Notion would not have an automated table of contents, as each entry is its own page, so the table of contents would have to be manually written.
- Another feature that Notion supports is Slack integration. This would allow us to know when new entries are created, easily turn Slack conversations into notebook entries, and stay up-to-date with Notion tasks (e.g. when a task is completed, a notification is sent to Slack).
 - This could resolve the issue of documentation falling short because updates in Slack were not always moved over to the notebook. This would streamline that process as well as facilitate Slack conversations and documentation.

Overall, **Notion would be very good for collaboration and flexibility**. The final output would be nicely formatted and easy to read. The downsides to using Notion would be the initial learning curve, and exporting files.

Continued in **GitHub Planning Notebook** (Pg. 16)

Typst

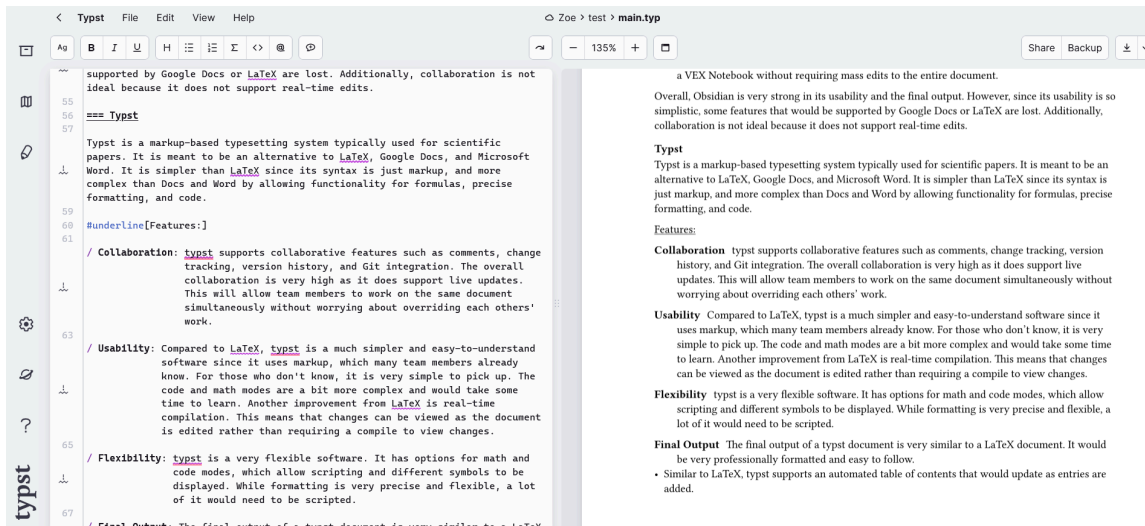
Focus: **Notebook Software**

By: **Zoe Rizzo**

Date: **05/29/2024**

Continued from **GitHub Planning Notebook** (Pg. 16)

Typst is a markup-based typesetting system typically used for scientific papers. It is meant to be an alternative to LaTeX, Google Docs, and Microsoft Word. It is simpler than LaTeX since its syntax is just markup, and more complex than Docs and Word by allowing functionality for formulas, precise formatting, and code.



- **Ease of Use** - Compared to LaTeX, Typst is a much simpler and easy-to-understand software since it uses markup, which many team members already know. For those who don't know, it is very simple to pick up. The code and math modes are a bit more complex and would take some time to learn. Another improvement from LaTeX is real-time compilation. This means that changes can be viewed as the document is edited rather than requiring a compile to view changes. One downside to usability is that, similarly to Overleaf LaTeX, entries would all be written in the same document, meaning that the longer the notebook gets, the more difficult it would be to find specific entries or proofread entries.
- **Flexibility** - Typst is a very flexible software. It has options for math and code modes, which allow scripting and different symbols to be displayed. While formatting is very precise and flexible, a lot of it would need to be scripted.
- **Collaboration** - Typst supports collaborative features such as comments, change tracking, version history, and Git integration. The overall collaboration is very high as it does support live updates. This will allow team members to work on the same document simultaneously without worrying about overriding each others' work.
- **Final Output** - The final output of a Typst document is very similar to a LaTeX document. It would be very professionally formatted and easy to follow. Similar to LaTeX, Typst supports an automated table of contents that would update as entries are added.

While Typst is a very powerful and flexible tool, it would still have a learning curve for the more complex tools. It would also be inconvenient to have all entries in the same document instead of splitting them up for ease of editing and searching. However, its collaboration and overall usability are much stronger than what was used previously.

Continued in **Notebook Software Selection** (Pg. 18)

GitHub Planning Notebook

Focus: **Notebook Software**

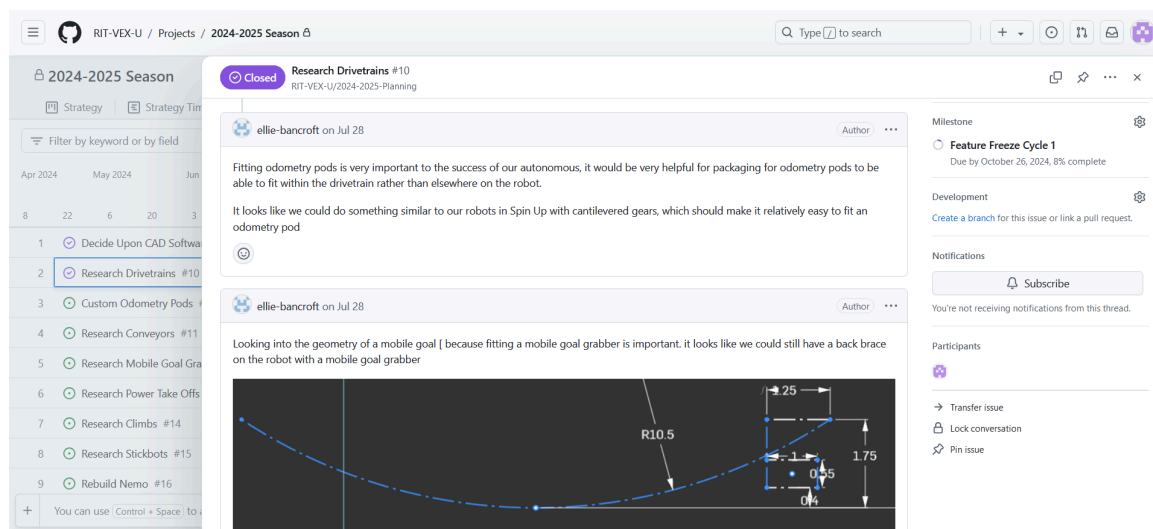
By: **Richie Sommers**

Date: **05/29/2024**

Continued from **Notion** (Pg. 12)

Since the team is using GitHub Project management tools for team organization, leveraging its issue system could prove useful. This notebooking system would use the comments beneath a GitHub issue to store notebook entries. Each project that a member or sub-team wishes to accomplish is already an issue in order to be placed in the GitHub project boards and timelines. Then, a tool can scrape the issue comments to organize and export the notebook into its final format.

GitHub provides a nice editor and preview window for markdown editing simplifying the process. Additionally, reorganizing the notebook is as easy as tweaking values in the script to reorganize based on project, time, or any other attributes present in the GitHub issue. For pages that do not follow the engineering model, Obsidian could be used to write these pages before joining with the chronological pages.



- **Ease of Use** - This system uses an easy to learn markdown syntax and provides an intuitive editor. GitHub markdown is one of the most popular markdown flavors and has countless tutorials online.
- **Flexibility** - While markdown supports many of the features needed (code blocks, typeset math, headers, and tables) it is, by design, much more limited than Google Docs or LaTeX.
- **Collaboration** - GitHub can support projects with thousands members so will be able to handle this team. For the non-chronological entries, the collaboration aspects will be that of whatever markdown editor the team chooses. The biggest downside of this system is that only the person who wrote the entry will be able to edit it (though there are workarounds for this that can be discussed).
- **Final Output** - Since the entire notebook would be formatted as markdown, the final output is determined by whatever markdown tool used for exporting. While it

will be limited by the supported markdown features, it will be consistently formatted as styles are applied to each class of element rather than an ad hoc fashion like Google Docs.

Continued in **Typst** (Pg. 14)

Notebook Software Selection

Focus: **Notebook Software**

By: **Zoe Rizzo**

Date: **05/31/2024**

Continued from **Typst** (Pg. 14)

→ **Objective:** Select the best notebook software for this season. **The team met to score potential notebook softwares.** We created a decision matrix to score the following criteria:

Criteria	Reason	Weight (1-5)
Collaboration	Everyone should be able to contribute to notebook so that it does not all fall on one person.	5
Exportation	Ideally, the notebook should be easy to export to a single PDF document, but it shouldn't be prioritized over ease of use or collaboration.	2
Usability	The notebook software should have a relatively low learning curve so that all team members can easily contribute.	4
Flexibility	While it would be nice to have a flexible software that has more powerful tools like math and coding modes, it is not a priority.	1
Enforced consistency	Having a software that would enforce consistent formatting throughout would ensure a clean notebook. However, it is not necessary as we can implement and enforce our own formatting.	2
Final design	The final notebook should be clean, consistent, and easy to follow.	4
Organization	The notebook should be easy for team members to navigate and search.	3

Google Docs + Overleaf LaTeX

Criteria	Reason	Score	Weighted Score
Collaboration	Collaboration is high for the first part of the notebook process, but then quickly becomes very bad when transferring from Docs to Overleaf since only two people are able to do this.	1	5
Exportation	While exporting from Overleaf is very simple, the process of moving entries from Docs to Overleaf has to be done manually.	2	4
Usability	LaTeX has a very high learning curve.	1	4
Flexibility	LaTeX is extremely powerful and has math and coding modes.	5	5
Enforced consistency	LaTeX has extremely enforced formatting.	5	10
Final design	While the final notebook is extremely consistent, it can be bland and difficult to follow at times.	1	4
Organization	Each notebook is written entirely in one document, making it difficult for team members to navigate.	1	3
		Total	35

Obsidian

Criteria	Reason	Score	Weighted Score
Collaboration	While there is no real-time collaboration, team members cannot work on the same entry simultaneously. However, it is automatically updated as soon as edits are saved.	4	20
Exportation	Obsidian does not natively support exporting all entries into one PDF, but has plugins that allow it.	4	8
Usability	Obsidian uses markdown, which is very simple to pick up on. Most team members already know at least a little markdown.	4	16
Flexibility	While it isn't as flexible as LaTeX or Typst, Markdown is still a fairly powerful tool.	4	4
Enforced consistency	Obsidian can be formatted using CSS, ensuring consistency.	4	8
Final design	The final output can be very easy to follow.	5	20
Organization	Each entry is its own document, making it easy to navigate.	5	15
		Total	91

Notion

Criteria	Reason	Score	Weighted Score
Collaboration	Notion supports real-time collaboration.	5	25
Exportation	Entries are downloaded separately and have to be combined.	1	2
Usability	It is a text-based editor, meaning there is no learning curve.	5	20
Flexibility	Notion supports built-in tables, charts, call-outs, code blocks, etc. However, it doesn't have many tools that other softwares do, such as math or code modes.	3	3
Enforced consistency	Since Notion is a basic text-based editor, there would not be any way to automatically enforce consistency.	2	4
Final design	The final output can be very easy to follow and visually appealing.	5	20
Organization	Each entry is its own document, making it easy to use. However, the overall notebook can be slightly difficult to navigate.	4	12
		Total	86

GitHub

Criteria	Reason	Score	Weighted Score
Collaboration	Collaboration is not very high for individual entries, as only the original author can edit entries.	3	15
Exportation	A tool can be used to scrape the entries and format them into a final PDF.	4	8
Usability	This would use markdown, which is very simple to pick up.	4	16
Flexibility	While markdown is still very powerful, it is more limited than LaTeX or Typst.	3.5	3.5
Enforced consistency	CSS can be used to enforce consistent formatting.	4	8
Final design	The final output can be very easy to follow.	5	20
Organization	It would be easy for team members to navigate this as entries would simply be comments in a GitHub issue.	5	15
		Total	85.5

Typst

Criteria	Reason	Score	Weighted Score
Collaboration	Typst supports real-time collaboration.	5	25
Exportation	It would be simple to export the notebooks into one PDF.	5	10
Usability	While it is more simple than LaTeX, there is still a high learning curve.	2	8
Flexibility	Typst can be just as powerful as LaTeX, supporting all the same tools.	5	5
Enforced consistency	Consistency would be automatically enforced, although not as strongly as LaTeX.	4	8
Final design	The final output would not be very easy to follow or visually appealing.	1	4
Organization	All entries would be stored in the same document, making it difficult to navigate.	1	3
		Total	63

Criteria	Weight	Typist		Obsidian		Notion		Github		Docs → Overleaf	
Collaboration	5	5	25	4	20	5	25	3	15	1	5
Exportation	2	5	10	4	8	1	2	4	8	2	4
Usability	4	2	8	4	16	5	20	4	16	1	4
Flexibility	1	5	5	4	4	3	3	3.5	3.5	5	5
Enforced consistency	2	4	8	4	8	2	4	4	8	5	10
Final design	4	1	4	5	20	5	20	5	20	1	4
Organization	3	1	3	5	15	4	12	5	15	1	3
		23	63	30	91	25	86	28.5	85.5	16	35

Decision Summary

	Google Docs + Overleaf LaTeX	Obsidian	Notion	GitHub	Typst
Total Score	35	91	86	85.5	63
Using the decision matrix results combined with our trying out each software to see which would best suit our needs, we decided that Obsidian would be the best solution . While it isn't the most collaborative, it is collaborative enough for our needs and should be a great improvement from last year.					

From here, we will set up the full Obsidian notebook and customize it to our needs.

Second Strategy Meeting

Focus: **Strategy Entries**

By: **Ellie Bancroft**

Date: **06/10/2024**

Continued from **First Strategy Meeting** (Pg. 8)

Robot Priorities

Team Survey

Between the first and second strategy meeting team member voted on what capabilities and qualities of the robot were most important, here are the results of those votes:

Capabilities	Qualities
Score on a mobile goal	Repairable
Control a mobile goal	Modular
Localize in Auto	Drive Quickly
Control Rings of Desired Color	Durable
Score on Neutral Stake	Scoring Quickly
Intake from stack of 2	Simple
Possess 2 Rings	Resistant to pushing
Intake from stack of 4	Lightweight
Tier 3 climb	Heavy
Descore from mobile goal	
Buddy climb	
Score on Alliance Stake	
Descore from Neutral Stake	
Score on High Stake	

Interpretation of Results

These results show that the team strongly values scoring the the autonomous period. The autonomous period has the potential to be particularly important in this game, both for attaining the autonomous win point to rank higher, as well as the 6 point autonomous bonus. The autonomous bonus could be particularly useful as those points cant be taken away, unlike scored rings.

These results also show a greater focus on placing mobile goals in the positive and negative zones of the field over climbing.

Goals for Autonomous

Scoring

Tradeoffs

There are major tradeoffs in how to score in autonomous. There are two main causes of tradeoffs for the autonomous period: getting the autonomous bonus vs. setup for scoring in driver control; and risk of crossing the autonomous line vs. additional scoring benefit.

Examples of the first tradeoff is scoring only the team's rings to get an advantage in score in auto vs. scoring both teams rings to force the opposing team to have rings in suboptimal positions. Another example of this is the decision to climb in autonomous, which could nearly guarantee the autonomous bonus but would take up time in tele-op to get off the ladder.

Examples of the second tradeoff are scoring on neutral stakes, and deciding what mobile goals to grab. Getting into a fight over a mobile goal has a risk of crossing the auto line, but has the benefit of potential additional scoring.

Goals for Skills

Tradeoffs

The big tradeoff in skills is going for blue rings vs. strictly scoring red rings. Blue rings require all red rings to be in scoring positions in order to have a point value, and any red rings above a blue ring on a stack will have no point value. This introduces a risk to attempting to score any blue rings because if we miss or fail to score any red rings throughout the skills run then we could lose out on a significant number of points.

Out of the 33 rings on the field in skills, 11 are blue rings and 24 are red rings. This means that the maximum score while scoring blue rings is 11 points higher in any individual run, or 22 points higher combined. The maximum skills score is 117 points, or 106 points without scoring blue rings

Budget Tracking

Focus: **Budget**

By: **Zoe Rizzo**

Date: **09/06/2024**

Continued from **Budget Request** (Pg. 2)

We created a budget tracking spreadsheet and an order form spreadsheet to keep the entire team in the loop with our finances. The RIT Student Government approved our budget request, granting us \$9,379.36, including our roll-over budget from last season.

Budget Tracking 2023-2024								
Transaction Type	Company	Description	Amount	Date of Transaction	EAF #	Total	Balance	\$8,821.16
Deposit	RIT SG	Budget Allocation	\$9,379.36	8/1/2024	2892635	\$9,379.36	Expenses	\$558.20
Withdrawal	Vex Robotics	Initial Purchase	\$493.20	8/27/2024	2893107	-\$493.20	Allocations / Revenues	\$9,379.36
Withdrawal	Mouser Electronics	Initial Purchase	\$65.00	9/3/2024	2893244	-\$65.00		
						\$0.00		
						\$0.00		
						\$0.00		

Budget Tracking Spreadsheet

Arrived?	Person Filling Out	Date	Part Name	SKU	Price	Qty	Total	Link	Vendor	EAF in?	Ordered?	
<input checked="" type="checkbox"/>	CJ Crocker	5/2/24	2.75" Omni-Directional Anti-Static Wheel	276-8106	\$ 22.89	4	\$ 91.56	LINK	Vex Robotics	yes	yes	Total Amount (not ordered): \$ 234.30
<input type="checkbox"/>	CJ Crocker	5/2/24	"High Stakes" Full Game & Field Element Kit	276-8868	\$ 589.99	1	\$ 589.99	LINK	Vex Robotics	yes	yes	Total Amount Spent: \$ 1,085.27
<input checked="" type="checkbox"/>	CJ Crocker	5/2/24	24" High Strength Shaft (2 pack)	276-7465	\$ 17.89	2	\$ 35.78	LINK	Vex Robotics	yes	yes	
<input checked="" type="checkbox"/>	CJ Crocker	8/27/24	AI Vision Sensor	276-8659	\$ 89.99	2	\$ 179.98	LINK	Vex Robotics	yes	yes	
<input type="checkbox"/>	CJ Crocker	8/27/24	V5 Smart Motor (11W)	276-4840	\$ 46.99	4	\$ 187.96	LINK	Vex Robotics	yes	yes	
<input type="checkbox"/>	CJ Crocker	9/1/24	AMT-B0-S	N/A	\$ 1.27	6	\$ 7.62	LINK	Mouser	yes	no	
<input type="checkbox"/>	CJ Crocker	9/1/24	AMT102-V	N/A	\$ 23.07	2	\$ 46.14	LINK	Mouser	yes	no	
<input type="checkbox"/>	CJ Crocker	9/1/24	Optical Tracking Sensor	N/A	\$ 79.95	2	\$ 159.90	LINK	Sparkfun	no	no	
<input type="checkbox"/>	CJ Crocker	9/1/24	200mm Length 3 Stage Slide	N/A	\$ 2.58	8	\$ 20.64	LINK	JLCMC	no	no	
<input type="checkbox"/>				N/A	\$ -	0	\$ -	LINK		no	no	

Order Form Spreadsheet

We plan to keep both of these spreadsheets up to date, as only E-board members have direct access to our financials and we want to be transparent with all team members about how our budget is allocated.

Skills Run Concepts

Focus: **Robot Skills**

By: **Ellie Bancroft**

Date: **10/18/2024**

→ **Objective:** Identify options to build/overcome something/solve a problem/etc.
Bolded thesis-like intro sentence. Background knowledge. Talk about the problems.
Yadda yadda yadda. **Bolded summary sentence that concludes our options and leads into future plans.**

By: **Zoe Rizzo**

Date: 10/21/2024

24in Jover Content Calendar

[illegible]

2024-2025 Season

Strategy

Strategy Timeline

Hardware

Hardware Timeline

Software

Software Timeline

Everything

Everything Timeline

Scout Bot

New view

Labels

deadline

hardware-subteam

notebook

software-subteam

Show empty values

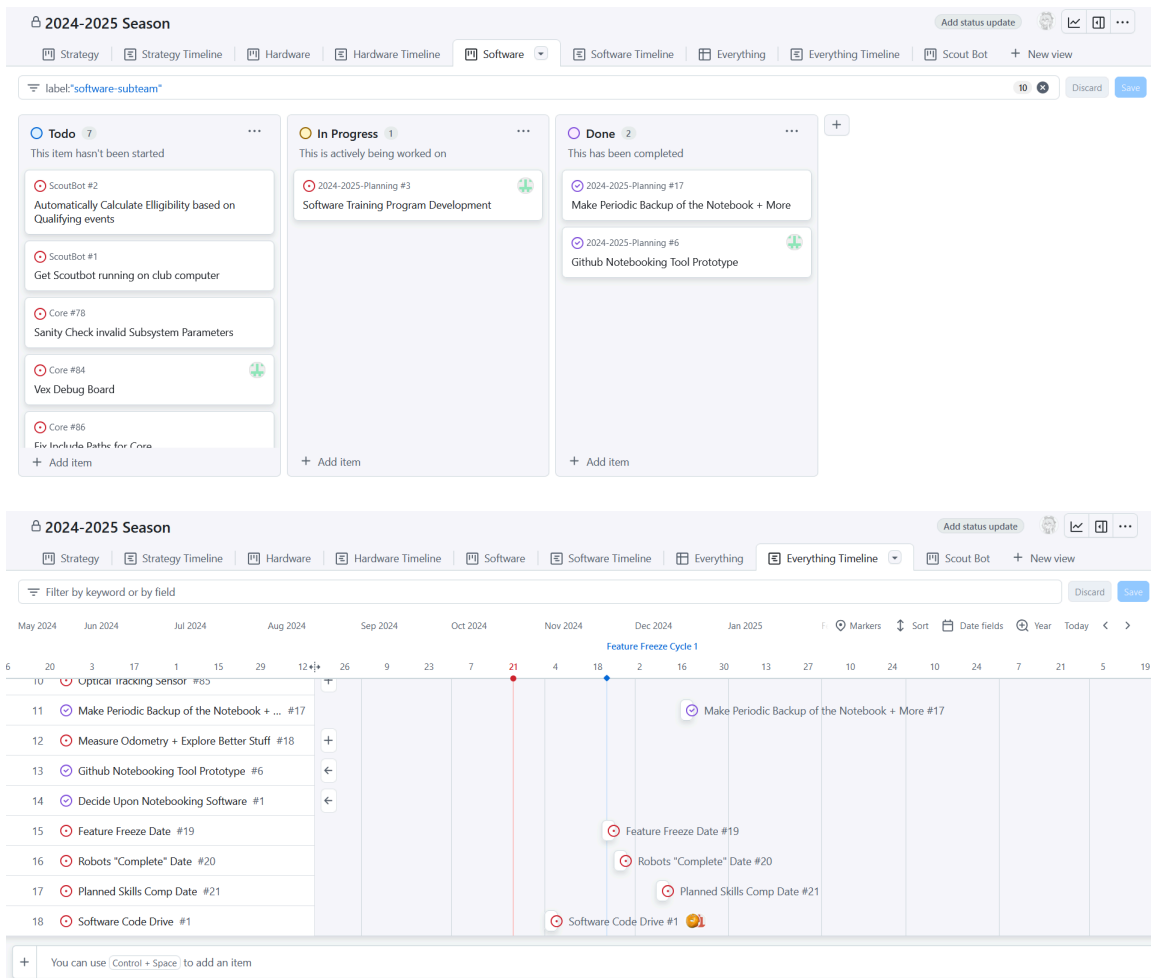
is:open

13

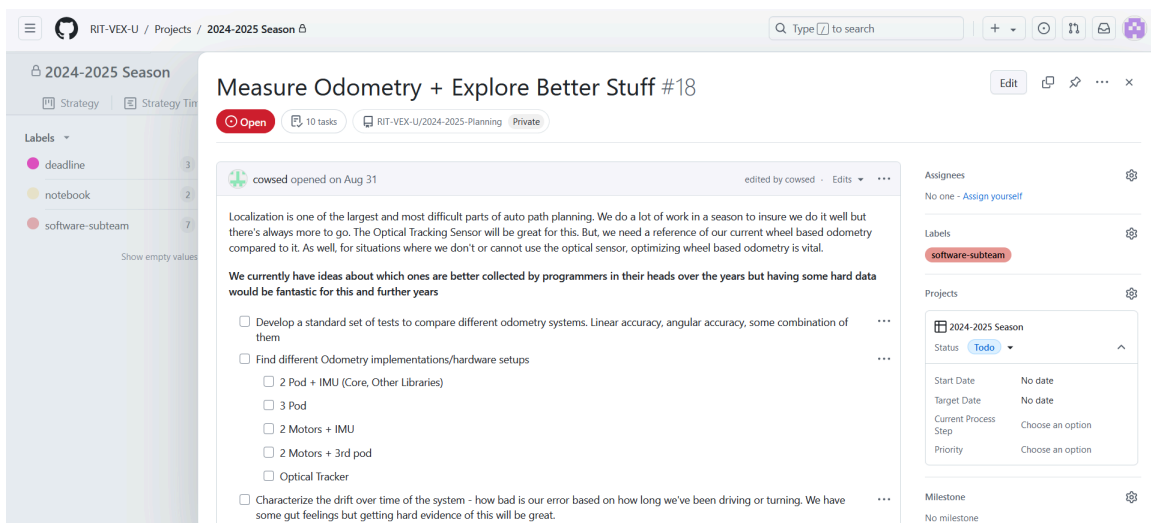
Discard

Save

Title	Assignees	Status	Priority	Labels	Current Process SL...
<div>High 5</div>					
1 Feature Freeze Date #19		Todo	High	deadline	n/a
2 Robots "Complete" Date #20		Todo	High	deadline	n/a
3 Planned Skills Comp Date #21		Todo	High	deadline	n/a
4 Custom Odometry Pods #7	ellie-bancroft	In Progress	High	hardware-subteam notebook	
5 Software Code Drive #1	max-49 and R...	Todo	High		
+ Add item					
<div>Medium 1</div>					
6 Software Training Program Development #3	cowshed	In Progress	Medium	notebook software-subteam	
+ Add item					
<div>Low 2</div>					



Using GitHub allows for in-depth customization by assigning members to tasks, creating multiple labels, defining deadlines and priorities, and adding detailed descriptions and comments.



We plan to keep the project board updated with all tasks (steps in any design cycle) and major deadlines.