Feedback for ProjectGrover

Group Project Audit 1 - ENGN8170, Semester 2, 2024

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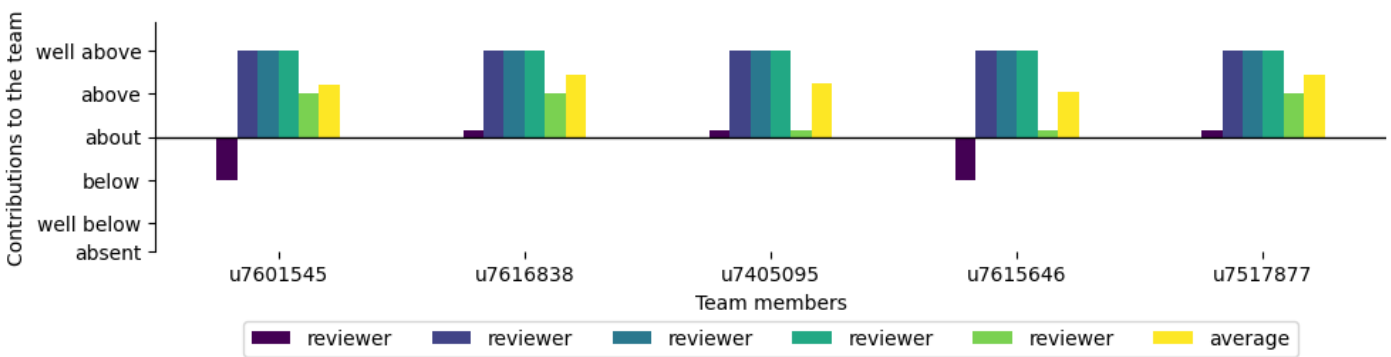
Preamble

The feedback here is for information only. It is important that your team takes time to understand this feedback, and respond to it at your next opportunity. You should ask your stakeholders for any clarification. Most importantly of all, please remember that feedback is useless unless you take action from it.

Team Member Contributions

Peer evaluation of contribution by team members

5 out of 5 team members submitted reviews.



Note: the values have been generated by members of your team. These are not 'marks', instead given for 'information'.

Feedback from your team members

Team member

We are moving as intended with some hiccups here and there. Overcoming these roadblocks resulting from lack of documentation and unfamiliarity with GITHUB will greatly improve our progress in hitting the milestones we set out.

Team member

Reflecting on Project Grover, I'm proud of our strong communication and decision-making. Team A (Data Acquisition) has done an excellent job managing stakeholder communication, keeping us well-aligned with our project goals. Enhancing cross-team communication with Team B (Design and Manufacturing) could further strengthen our alignment and ensure everyone is on the same page.Dividing into focused groups has been a smart move, enabling efficient decision-making. I see an opportunity to integrate more closely during key decisions, especially regarding the powertrain system, to achieve even better outcomes. While we're slightly behind on systems engineering integration, I'm confident that with our collective focus, we can quickly bring everything together for a seamless operation.Overall, our project is on track, thanks to everyone's hard work. I'm confident that by addressing these areas, we'll continue to thrive and achieve our goals.

Team member

In reflecting on our work for Project Rover, I'm proud of the teamwork and decision-making demonstrated by both Team A and Team B. Team A has shown strong expertise in troubleshooting sensors and software for RC vehicle automation, while Team B has excelled in modeling the line marking machine and conducting budget analysis. Their deep understanding of their respective areas has driven our progress.However, to fully integrate our efforts and ensure project success, we must enhance cross-team collaboration. Working more closely together will help us better integrate our work and leverage each other's strengths. The lack of a shared workspace has limited this collaboration, making it essential to prioritize access to collaborative tools and regular joint meetings. Additionally, our teamwork in attending meetings, organizing with the host, and thorough documentation has been solid, but there is always room for improvement. By focusing on these areas, we can achieve even greater success in the upcoming stages of Project Rover.

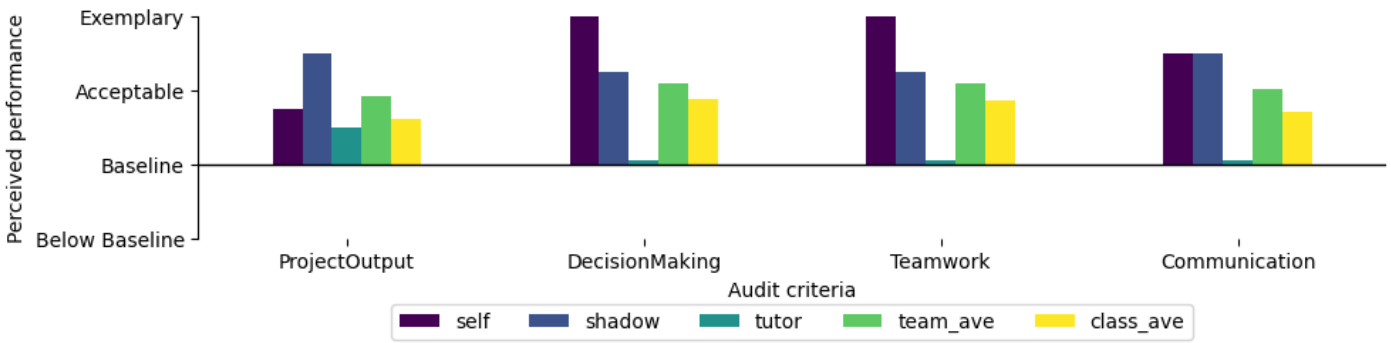
Team member

Team Grover has shown remarkable dedication and effective division of labor in our project. Adnan has been instrumental in developing the landing page and setting up our repository, while I have focused on 3D modelling of the line marking machine. Russell and Vikalp have consistently worked on developing the concept of operations. Following that, Russell, Vikalp, and I have collaborated on the drivetrain, currently working on the parts list for the client, which involves designing mechanisms to make the machine autonomous. Viswadeep has been crucial in booting up the rover, enabling control via both computer and touchscreen, and ensuring communication with the rover. Viswadeep and Adnan, as part of the data acquisition team, manage the software aspects, while the rest of us handle the work on the powering of the line marking machine. We have had four productive meetings with the client, where we've clarified expectations and addressed queries. Our communication, primarily in person and via Teams, has been excellent, and I commend everyone for managing their time effectively to contribute to this project amidst their other academic commitments.

Team member

Better organization of tasks and deliverables will help our team achieve our objectives.

Indication of performance by stakeholders



Project Output

Self Review

project output can be improved by better scheduling of tasks and time allotment. this will allow the team to fulfill the necessary deliverables and be on track.

Self Review

I understand that project deliverables are currently behind schedule due to constraints resulting from the lack of storage space on university grounds. While I am in the process of acquiring space in the macro labs and the necessary tools for both Team A and Team B (responsible for the rover and the line marking machine respectively), there are other areas we need to address to improve our workflow and outputs.Firstly, the documentation on the repository is insufficient for the work completed so far. This documentation would benefit from better organization and a structured feedback system. Ensuring documents have clear headings, sections, and a logical flow will make them more accessible and useful to everyone involved.Another challenge has been ensuring proper version control. Since not many of us are familiar with GitHub, we need to invest time in learning how to use it effectively. By initially uploading documents and then collaboratively working on them, we can better track changes and ensure everyone is aware of what has been added or removed. This approach will also facilitate more rigorous quality control processes through peer reviews and testing phases.Despite the delays caused by storage space constraints, establishing clearer milestones can help align the team's efforts and keep everyone on the same page. This was partially addressed during our second meeting at Toad Hall, but we need to consistently follow through on these milestones to maintain progress.Finally, the visual presentation of documents can be significantly enhanced. Using visual aids such as charts, graphs, and diagrams to illustrate complex concepts and data - particularly regarding the communication between the ground station and the rover - will make our documents more comprehensible and impactful.

Shadow Review

The team's dedication to maintaining a detailed and organized project repository is commendable. This diligence ensures that all documentation, including meeting minutes and status reports, is current and easily accessible, facilitating effective project tracking and management. Your use of the repository not only adheres to the guidelines set out in the assessment document but also exemplifies best practices in project documentation and version control. Additionally, your Concept of Operations (ConOps) document is thoroughly detailed, providing a clear and comprehensive outline of project objectives and scope. This document's clarity and depth enhance shared understanding among stakeholders and guide project efforts effectively, reflecting a high level of professionalism and commitment to the project's success.While the project's technical aspects are well-handled, there's room for improvement in stakeholder engagement and communication. The feedback indicates that interactions with project hosts and external parties could be more proactive and systematic. Improving this could enhance the project's alignment with external expectations and increase its real-world applicability. Consider implementing regular update meetings or briefings with all stakeholders to ensure continuous alignment and adaptability to their needs.

Shadow Review

Positive Aspects: The team has been able to define broad strategies with regards to the delivery of the project's output - an autonomous line-drawing machine. The comprehensiveness of documentation, the specificity of goals and objectives, and the organization of the project timeline signal the team's seriousness in achieving a quality product. The existence of the scope management plan and the application of modern technologies, including GPS, Lidar, and 3D cameras, show that the team is to submit an accurate and cutting-edge deliverable. Areas for Improvement: On the whole, the documentation and the planning are well done though there are several places that could be enlightened more, which would put more power in the further outcome of the project. Firstly, I was wondering that the team which is working on a particular project has not mentioned any standard that they are following at all. This would contribute extra authenticity in the direction of the challenge; it is likewise vital that it follows generally accepted benchmarks with the intention of maintaining the quality as properly as the protection of the final result. However, the team has not shown rudimentary graphic work or some form of outlining how the final product would like like. The appearance and functionality of the final project are critical to determine to avoid miscommunication and facilitate the work progress. It could be also used as a basis during the whole project since it is supposed to illustrate the proper functioning of all components in their conjunction.

Decision Making

Self Review

In terms of decision-making, Viswadeep's experience with similar projects provided us with a solid foundation at the beginning. He proposed an initial outline that guided our early efforts, and this was invaluable in giving us direction. However, decision-making has been a collaborative process, with both the data acquisition and drivetrain teams contributing to discussions and finalizing decisions together. This approach ensures that all perspectives are considered, and it has helped in creating a cohesive strategy that aligns with our overall project goals. While our decision-making process has been effective, there is room for improvement, particularly in communication. Most of our meetings have been held in person, which has worked well, but enhancing our communication - perhaps through more regular updates or using digital tools - could further improve our workflow and speed up our progress. One challenge we've faced is the lack of a dedicated workspace. Working individually in our rooms has slowed us down somewhat. Securing a common workspace would likely increase our efficiency, allowing us to collaborate more seamlessly and maintain our momentum.

Self Review

Our decision-making process has been generally effective, particularly in dividing the team into Data Acquisition and Design & Manufacturing. This strategic choice allowed each group to focus on specific tasks, leading to efficient progress in troubleshooting sensors and modeling the line marking machine. The decision to use GitHub as our project repository and documentation tool, though logical, did cause some initial confusion within the group, primarily due to varying levels of familiarity with the platform.While these decisions have largely benefited the project, there is room for improvement. We should aim to ensure that all team members are comfortable with the tools we choose and provide necessary training or resources upfront. Additionally, more frequent cross-team discussions could help align our efforts and clarify any uncertainties, leading to smoother implementation of decisions and better overall project coherence.

Self Review

Overall, I believe the team's decision-making practices are at an Exemplary level. The team has shown a strong ability to make informed decisions, as evidenced by our strategic focus on testing ROS, GPS, and GS, and the proactive steps taken to acquire storage space in Macro Labs. The initial budget proposal of 2000 AUD for the powertrain system demonstrates careful financial planning and consideration.However, there is room for improvement, particularly in integrating systems engineering concepts into our decision-making process. This gap has impacted our Work Breakdown Structure (WBS) and overall project planning. To enhance decision-making, it is crucial to address this by incorporating systems engineering principles to improve the clarity and effectiveness of our project structure. Additionally, addressing the delay in documentation and resolving risks related to group structure and Macro Lab access confirmation will further strengthen our decision-making and support the successful progression of the project.

Shadow Review

Positive Aspects: Hence, the team has been organized and systematic in all its decisions especially in risk management and stakeholders' consideration. The identification of risks at the detailed level, coupled with the proposed measures to eliminate those risks, proves one has to think about what challenges may occur in the future. The team's practices of keeping the stakeholders updated and conducting standard testing is also a good indication of sound decision making. Moreover, the technicality they have applied in positioning their thought process on how they made their decision is praiseworthy. Areas for Improvement: Summing it up, the performance of the team can be described as satisfactory; still, one of the potential improvements may be noted: the decision-making flexibility concerning the possible obstacles. For example, while making the presentation, the team stated that the decision on the type of motor to be used is yet to be taken, which is a component. This may mean a situation where the approval process on matters relating to the project takes a long time and this directly affects the project time line. While long-term planning is important, over-emphasis on the previously outlined strict approaches may limit the ability to respond to incidents as well as the project's adaptability.

Shadow Review

Encourage Active Participation: Foster an environment where all team members feel comfortable sharing their ideas and opinions. Active participation from everyone can lead to more creative solutions and a stronger sense of ownership over the project.Leverage Strengths: Identify the unique strengths of each team member and align tasks with these strengths.

Teamwork

Self Review

Our team's teamwork has been commendable across various tasks. Team A, responsible for data acquisition, has effectively collaborated in troubleshooting the sensors and documenting their findings, ensuring a clear flow of information. Similarly, Team B has shown strong collaboration in modeling the line marking machine and handling budget analysis, with each member contributing significantly to the design and manufacturing processes. The landing page development also benefited from coordinated efforts, resulting in a user-friendly interface that aligns with our project's goals.However, the lack of access to a dedicated workspace (workshop) has impacted our ability to work closely and could have affected the project's efficiency. To mitigate this, we should prioritize securing a shared workspace moving forward. This will enhance real-time collaboration, allow for more hands-on problem-solving, and ultimately lead to a more integrated and cohesive project outcome.

Self Review

Our team has been effectively divided into two specialized groups: the data acquisition team and the drivetrain team. Viswadeep and Adnan have taken charge of the data acquisition, focusing on the software and microcontroller hardware aspects, while Vikalp Shendekar, Russell Rehim, and I are dedicated to the drivetrain, working on redesigning the existing line marking machine and formulating the mechanisms to make it autonomous. The division of tasks was done thoughtfully, taking into account each member's strengths and expertise in relevant fields. This strategic allocation of responsibilities has allowed us to work efficiently, with each team focusing on areas where they can contribute most effectively. Additionally, there is a strong sense

of collaboration within the team. Whenever we encounter a challenge that falls outside the expertise of any individual, we come together to find a solution, demonstrating our commitment to collective problem-solving. The mutual understanding among team members has been a key factor in our progress. Each member respects the other's contributions, and there's a clear sense of trust that everyone will fulfill their responsibilities. This has fostered a positive and productive working environment.

Shadow Review

Foster a Culture of Mutual Respect: Encourage respect for each team member's contributions, regardless of their role. A culture of mutual respect builds trust and strengthens collaboration.Encourage Flexibility and Adaptability: Promote a mindset that embraces change and is open to new ideas. Flexibility allows the team to adapt to unexpected challenges and seize new opportunities as they arise.

Shadow Review

The team's overall coordination appears to be fairly good, with members collaborating effectively to achieve project milestones. However, there are concerns regarding the delegation of tasks, which either wasn't executed properly or was not effectively managed by the team. This was evident during the presentation, where documentation was incomplete, and key systems engineering principles were missing from the project. Additionally, there was a misinterpretation of the timeline, particularly concerning the selection of materials for the rover. Moving forward, the team should focus on enhancing teamwork, ensuring better communication, and aligning on task delegation. It would be beneficial to see more cohesive teamwork in future presentations, with clear roles, responsibilities, and thorough preparation. This will help avoid similar issues and ensure that all aspects of the project are adequately covered.

Communication

Self Review

While our team generally communicates effectively through frequent in-person meetings, there is room for improvement in clarity and conciseness. The use of excessive jargon during discussions often leads to confusion among team members, including myself. To address this, we should aim to simplify our language and ensure that any new terms are clearly explained to everyone.Establishing a consistent schedule for updates is crucial, as our current sporadic updates lead to confusion and misalignment. This issue may be partly due to the unfinished project storage system. Finalizing this system will help streamline our communications and ensure that everyone is on the same page. Implementing regular, scheduled updates - perhaps weekly or bi-weekly - would greatly enhance our cohesion and efficiency.Our weekly meetings with stakeholder Sui have positively impacted our communication with stakeholders. However, it's essential to include Rennei in these discussions to ensure all key stakeholders are aligned and informed. This inclusion will help prevent any miscommunication or misalignment of expectations.One major area needing improvement is the implementation of a structured feedback mechanism. Currently, our project and team lack a formal process for providing and receiving feedback, especially concerning the repository. Establishing regular review sessions where feedback can be openly discussed and action items identified would be beneficial. This will enable us to address issues promptly and improve our overall workflow.Additionally, when trying to understand the stages each member of the project team is at with their deliverables, responses sometimes take a while to be received. Personally, I would prefer to use only Teams as the main channel of communication. Receiving information on social media platforms such as WhatsApp, which I do not frequently use, can be messy and leads to missed responses to issues or questions discussed in meetings.

Self Review

Overall, I believe the team's communication practices are at an Exemplary level. We have effectively maintained regular meetings with the host, having held four productive sessions so far, and we are documenting each meeting thoroughly. The Design and Manufacturing team is making strong progress, being halfway through their design tasks, while the Data Acquisition team is focused on testing ROS, GPS, and GS, and is actively working on securing storage space in Macro Labs. Additionally, we are advancing on the Concept of Operations.To further enhance communication, it is important to address the delay in documentation to ensure that all records are consistently updated. There are also risks related to group

structure and documentation that need attention. Expediting the confirmation from Beatrice regarding Macro Lab access will be crucial. By refining these areas, we can uphold our exemplary communication standards and ensure continued success in the project.

Self Review

team communication can also be improved to aid in better decision making and fulfill the clients needs better. Communication can be improved with frequent team meetings and a document to keep track of decision making.

Shadow Review

The team has a solid communication plan with regular meetings and effective use of tools like Microsoft Teams, Email, and GitHub, ensuring alignment with the project's progress and stakeholder expectations. However, these interactions should deepen the understanding of project needs, with better documentation of outcomes to prevent miscommunication. The presentation revealed internal communication gaps, leading to inconsistencies and missing elements. To improve, pre-presentation meetings should align the team, and a more robust documentation strategy with digital tools should be implemented to ensure traceability and accountability.

Shadow Review

The team has demonstrated commendable communication skills, effectively using a variety of platforms and tools to ensure information is shared timely and accurately within the team and with external stakeholders. Your efforts in maintaining transparent, relevant, and professional exchanges have greatly contributed to keeping the project on track and stakeholders well-informed. To elevate your communication efforts from acceptable to exemplary, consider enhancing the interaction with a broader audience. While current communications are effective, there's potential to further engage and captivate external stakeholders through more dynamic and interactive methods. For instance, incorporating more visual aids, interactive presentations, or even regular project vlogs could make communications more engaging and accessible, especially for stakeholders not regularly involved in the engineering details. This approach could not only increase interest and involvement in the project but also foster a deeper understanding and appreciation of the team's work among a wider audience. Expanding the communication strategy in this way can help bridge the gap between technical work and stakeholder perception, enhancing overall project impact.

Aspects Done Well

Tutor

ConOps: The project boundaries and scope of the project are written well and make it clear what the project is aiming to do. - Stakeholder management: some good information around how often the team is going to meet and engageNeeds and requirements analysis: Work has started already on this which is good to see and some beginnings of valid requirements.

Aspects to Improve

Tutor

Landing page: The landing page project descriptions can be improved to give an understanding of what the project is and what it is aiming to do. Currently, it jumps straight to the elements of scope, but audiences without prior understanding may not fully grasp the concepts. - Repository Structure: The structure of the repository could be improved to have governance folders and files set up. The folder structure at the moment is built around what work has been done to date. There is also not much structure around how files are saved in the 'home/ root' folder with a mix of technical, admin and governance all in the same place. The ConOps folder is starting to have a systems engineering files rather than docs related to the conops. - Version control: Some efforts have gone into version control in the con ops, but some communication and discussion on the process should be documented within the ConOps itself how this will be done. (There are now two v1.1s in file names, and the latest v1.2 doesn't have the version control table updated) - Teamwork: There are 5 team

members in this team, yet only 3 accounts have been active on GitHub. 3 users have committed in GitHub - Meeting Minutes: It was mentioned in the presentation that the team has met around 5 times, yet there is only one meeting minutes documented in the repository. The meeting minutes that are documented could be improved on what the decisions were made in the meeting and what actions were taken away. The minutes as written is not enough for someone who has missed a meeting or has very little context to be able to understand what went on in the meeting. Meetings with the client should also be minuted and documented. Recommend also finding a template online. - No project management plan (PMP) found in the repository. Please revisit this, as per tutorial 1 the PMP should at a minimum contain, timelines, WBS and risk management. A number of these topics are contained within the publish ConOps but since timelines are updated more regularly than the ConOps, these elements should be removed and put in a new document. - - ConOps: Project timeline: The screen shots of the Monday tool are not found within the repository. The project timeline should closely align with the systems engineering process the team is deciding to undertake. This section should be pulled from the ConOps and put into a PMP with a WBS, Gantt chart and milestone list. The project timeline at the moment is also quite high level and doesn't give the team clear direction. - The goals and objectives can be linked to the timeline/Gantt chart as milestones. - Change control processes should be more specific as to what the process is and what is deemed a major change (i.e. v1.0 to v2.0) and a minor change (i.e. v1.1 to v1.2). - FFBD: This is not a project management plan tool, rather a systems engineering tool and should be a separate file. The team should also look to validate and gain feedback from external stakeholders such as the client. What systems engineering process the team is using (ANU systems engineering process?) should be documented within the ConOps document. - Risk: what is the residual risk post the mitigation strategy? This should also be documented. Risks should also be monitored throughout the project and reviewed. - IP : IP concerns were raised in a previous tutorial, the scope of the IP and the agreements should be discussed within the ConOps. - Decision making processes are also lacking/ not documented. No decision making log present. Recommend finding a template online. - Needs and requirements analysis: How were the needs elicited from the client? Was this documented in meeting minutes? The team has jumped straight into requirements analysis without properly documenting the needs and providing criticalities. Please revisit theory from ENGN8100. - Stakeholder analysis: As the team begins to contact more and more stakeholders, a communications log is recommended to be created so each instance of a meeting or interaction is recorded and logged.

Changelog

12-08-2024:

- Release-Audit 1