This document is intended to provide a basis for Midterm Senior Project Evaluations and is intended for use by the Faculty Coach, the Project Team, and any stakeholders, including the Project Sponsor. The evaluation criteria below are divided into two main areas: Process/Project, and Product. As it is early in the project, primary focus is placed on the Process/Project areas; later evaluations will focus much more heavily on product. Because each area is expansive and often includes entire classes covering them, a sample rubric, some questions, and general evaluation categories have been provided to increase understanding of what is expected throughout the project.

To use this document, go through each area and facilitate discussion. It is not necessary to complete each rubric or to fill in each question, but students should be encouraged to individually do so, meet as a group for comparison, and report back to the faculty coach and sponsor any results or conclusions they reach.

Process and Project

The tendency to focus on the product often leaves the process and the project out in the cold, especially in projects with set or compressed schedules. A well developed Software Engineering team knows that the returns paid within the Process and Project domains far outweigh the time and expenses that occur. Although the list below is not exhaustive, it includes some of the primary areas of importance.

Meetings and Communications Management

Sample Rubric: Meetings and Communications Management				
Meetings were held only at regular intervals or as a result of a crisis and did not include agendas or pre-planning	Meetings included standing agendas which were occasionally followed	Meetings included predetermined agendas, but the agenda was not used within the meeting or evaluated afterward. Included some items which did not necessitate a meeting	Meetings included predetermined agendas and were somewhat organized, but were occasionally allowed to stray from format. Content necessitated a meeting	Meetings were pre-organized, included prepared agendas, followed expected format, and did not include content that did not necessitate a meeting
Communication with stakeholders was reactive or crisis-driven, did not occur when expected, and did not clearly communicate expectations	Communication was conducted out of necessity but was rarely proactive and did not account for stakeholder expectation management	Communication was scheduled and typically took place. Expectation management was rarely contemplated	Communications with stakeholders were regular and generally proactive. Expectation management was occasionally used.	Communications with stakeholders were regular, proactive, and purpose-driven. Language was clear and included expectation management
In terms of customer education, team had a negative attitude towards the customer	Team blindly accepted customer inputs, did not convey own knowledge adequately	Team missed some occasions when customers needed education or	Team provided technical inputs to customer when needed or asked for	Team made sure at every stage to educate customer and provide/seek clarifications

and did not bother to assist them		clarifications were needed		
Comments: **Communications are regular amongst the team and with the sponsor - meetings are efficient and thoroughly planned.** **The team will ensure to keep up this momentum.**				

1. Is the team conducting effective meetings? What can be changed to make the team meetings more productive?

   Team meetings are regularly productive. We always achieve all items on the agenda and ensure to leave with a plan for the next week

2. How well has the team been communicating project progress to the sponsor? What regular communication does the team have with the sponsor? Has the team been maintaining this communication to the satisfaction of the sponsor? Were any adjustments needed in the communication over time? Were these changes initiated by the team or the sponsor?

   The team has communicated quite well with the sponsor. Every week, the team communicates project progress to the sponsor via weekly 4-Up chart. If any important/time-relevant questions arrive after the sponsor meeting, the team immediately reaches out to the sponsor via email. The sponsor seems satisfied with our current communication plan, as there have been no notes or complaints. No adjustments thus far have been needed.

3. Did the team need to provide technical input to the sponsor? How well did the team educate the customer in these areas? What mechanism did the team use?

   The team does provide technical input to the sponsor, which includes the following: Github Setup, confirmation on tech stack (mainly about using React and AWS services so far). The team would always communicate about any technical aspects to the sponsor including any issues that we had encountered during the setup for developing the project. The mechanism we used so far to educate the customer about any technical aspects about the project would include showing to him our UI mockups and communication via email and through the sponsor meetings themselves.

4. What mechanism does the team use to communicate with the faculty coach? Has communication with the coach been effective? Are there any trouble spots with the faculty coach communications? What can the team change for next term to make their communication to the faculty coach more effective? What can the faculty coach change to make his or her interaction with the team more effective?

   The team has primarily communicated with the coach verbally at the end of sponsor meetings. Thus far, there has not been much need to reach out via alternative channels. If necessary, each team member has access to the coach's email and office for further communications.

   The team feels that the coach is communicating their expectations well. However, the team would like to have more clarity on exact artifact deadlines.

Sponsor/Stakeholder Communications

Comments:

The team has not had the opportunity to educate the sponsor much due to his prior development experience. Other than that, Sponsor was satisfied with our communication with him.

Faculty Coach Communications

Comments:
The team communicates with the faculty coach after each sponsor meeting.

SE Department Personnel Communications and Coordination with Other Teams

Comments:
N/A

Time and Effort

Sample Rubric: Time and Effort				
Student effort was minimal, not meeting minimum	Students effort only met minimum standards, and	Student effort was adequate to meet project requirements,	Student effort was consistently better than average, even	Students consistently put in full effort, even when internal or

requirements and putting the success of the project in crisis	excuses or blame was often used to explain the effect of internal or external hampering factors	but was frequently hampered by both internal and external factors	with negative internal factors. External factors occasionally affected effort levels	external factors have hampered progress
Comments: **Some external factors have impacted timelines such as exams and the career fair etc…**				

1. Has the level of effort of individual team members been reflected in the output of the team as a whole?

   Yes, our output reflects each individual accurately.

2. To what extent has thrashing (unproductive work) become a factor?

   In terms of thrashing, one of the main examples so far is that we are researching the same information and haven't really documented/discussed with one another about our findings yet.

Conformance to Schedule

Sample Rubric: Conformance to Schedule				
Did not demonstrate any schedule management and did not meet schedule requirements	Met minimal schedule requirements but showed no schedule management	Met most schedule requirements with little or no active schedule management	Met most or all schedule requirements with some active schedule management	Actively managed and met all schedule requirements
Comments: **Some deadlines have not exactly been met due to lack of clarity on deadlines. The project plan in particular was delivered late.**				

1. Has the team met all project milestones to date? Which milestones, if any, were missed or were met ahead of schedule? What contributed to this schedule change? What will the team do differently to ensure that future milestones are met?

   Yes, the team has met all milestones. The only milestone/project deliverable that was missed

was the project plan, but this was due to a change in scope initiated by the sponsor, which led to a reorganization of the plan.

Change and Scope Management

Sample Rubric: Change and Scope Management				
Did not demonstrate awareness of issues as change or scope issues but rather as individual problems	Occasionally identified change or scope issues as such but often addressed them reactively as individual problems	Addressed change and scope when issues were presented with little or no root cause analysis	Addressed change and scope regularly but not always actively addressing change and scope issues before they occurred	Actively managed change and scope, seeking out and addressing issues before they affected the project. Used root cause analysis
Comments: **At each step we seriously consider any architecturally significant requirements and non-functional requirements, and how they may affect our scope.**				

1. Has the scope of the project been considered at each milestone?

Yes, the team has been considering the scope at each milestone. For example, before development the scope was refined further based off of the original document provided by the sponsor.

Risk Management

Comments: **We discuss any risks that we have encountered directly with the Sponsor, whether it's during our meetings or via email.**

Deliverables

Sample Rubric: Deliverables				
Deliverable was not present and not substituted with other efforts or deliverables	Deliverable was delivered with minimal effort and did not contribute significantly to the success of the project. Some obvious problems or inconsistencies were	Deliverable met standards and was useful at introduction, but was not updated or useful further along in the project. Few obvious problems or inconsistencies were present	Deliverable was better than average and was used or enhanced irregularly, performing its desired function within the project. No obvious problems or	Deliverable performed as expected, was reviewed and enhanced at regular intervals, and would have consistently allowed someone not familiar with the

	present, demonstrating little QA occurred		inconsistencies were present	project to become informed

Comments: There have not yet been deliverables that "perform" per se, but all documents presented to the sponsor have been approved. Any adjustments requested by the sponsor, such as to the project synopsis, have been addressed.

1. How often do these artifacts get updated on the department project website?

   Artifacts have not yet needed to be updated much yet. The team currently has all up-to-date docs posted on the team's website and plans to update them regularly as needed.

2. Has the team had any issues with configuration management? How were these problems solved? What percentage of project artifacts is under configuration control?

   The team had few issues with setting up GitHub, we had to contact the sponsor multiple times to resolve the issues. 100% of the project artifacts is under configuration control.

Project Website

Comments:

The website displays team members, the project description, deliverables, and time tracking. It is kept up to date with current progress.

Time Tracking

Comments:

Time tracking can be done earlier / as soon as a task is done. Members frequently log their time properly however it is not always ASAP.

Project Plan, Similar Project Deliverables

Comments:

We'll have to ensure as the project progresses, we keep them up-to-date as possible so that they're actual living documents within the project lifecycle.

Risk Management Table

Comments:
The Risk Management Table is documented through our google sheet consisting of our weekly 4-ups.

Quality

Sample Rubric: Quality				
Little attention was paid to initial requirements and the final product related only loosely to them	Requirements were created and used as a guideline for initial efforts, but were rarely addressed later in the project	Requirements management and quality control were performed irregularly, but there was an understanding of the link between quality and conformance to requirements	Conformance to functional requirements was a priority, but non-functional requirements often took a back seat, relating to quality control	Conformance to functional and non-functional requirements was clearly a priority and actively prevented scope creep and similar issues
A customer-view of quality was not considered throughout the project	Customer satisfaction was implied as a requirement but not effectively understood by the team. Treated as a requirement rather than a separate quality factor	The group understood that customer satisfaction was important, and occasionally addressed it, but focused primarily on requirements	Customer satisfaction was a priority, and some attention was placed to areas such as maintainability, but some imbalance occurred	Customer satisfaction and a long-term scope as a priority was demonstrated in each project step and properly balanced with conformance to requirements and scope
Comments: **The Sponsor said that we did well on this portion.**				

1. How well has the team maintained quality control over the project artifacts? Have all artifacts been reviewed for adherence to quality standards? What is the review process used by the team?

   The team currently reviews most docs independently unless it is necessary to go over as a team in-person. We could do better to set allotted time to look over the most important docs as a team. Currently we ping each other on discord to ask for reviews which is not always the most effective way to get proper feedback.

2. Was there a large requirement to learn the problem domain? What approach was used to gain domain expertise? What forms of support did you receive?

Yes, most team members were not familiar with Shopify leading the team to spend significant time researching. The team's approach was to create spike tickets in our sprint and do research. Team members supported one another and the sponsor provided the files for a related project as reference.

3. Has the work accomplished to date satisfied the project sponsor? Team's opinion? Sponsor's opinion? Were there any weak spots in this regard?

To date, the sponsor has been satisfied with project progress. The team will be able to tell if it is on track once there is a sprint demo.

Sponsor Opinion:
Great shape overall, a lot of time was spent in the planning phase. This was expected due to the domain, hope to stay on track.

Process Creation and Improvement

Sample Rubric: Process Creation and Improvement				
Process is only used when clear best-practice standards exist or an external process must be followed	Processes have been created and are usually followed, but are rarely improved.	Processes have been created and are consistently followed, but are rarely improved. Crisis situations occasionally trigger process improvement	Processes are always followed and occasionally improved. Root cause analysis may be a byproduct but is not actively pursued	Active process improvement is addressed regularly and processes are evaluated/root cause analysis is used regularly
Metrics were not planned or used throughout the project	Metrics were used only as required by faculty coach or project guidelines, but were rarely used and only tracked by necessity	Metrics were regularly collected, but inconsistently used, especially relating to process	Metrics were regularly collected and evaluated/used as intended in process and product domains.	Metrics were properly planned, implemented, proved useful to stakeholders, and were used for process improvement
Comments: **We have not had much opportunity to collect metrics yet due to most of them being relevant to sprints - we have not finished one sprint as of writing this**				

During AWS research - lets provide feedback in terms of cost for merchants. We should not be losing money due AWS.

1. What is your process methodology? Has this been clearly outlined to your sponsor and received the sponsor's approval? How is the process documented?

   Scrum is our team's process methodology, and has been clearly relayed to the sponsor, and approved. This process is documented in our project plan and is reflected by our Jira board.
2. What mechanisms is the team using to track project progress? How well has the team tracked its project progress?
   Jira is being utilized to track progress, the jira board is updated consistently to keep up with ongoing progress. The team has effectively utilized Jira, all members are interacting with the board and updating their tickets.

3. What is the set of metrics that the team is tracking? Has the team gathered these metrics on a consistent basis? What has the team learned from the review of these metrics?

   The metrics our team tracks are sprint velocity, earned value, effort by type of activity, defect density, test coverage, and SUMI values. We have yet to finish a sprint and properly review these metrics.

Team Effectiveness

Sample Rubric: Team Effectiveness				
Team fractured, unable to work together constructively.	Team had some significant frictions and lack of mutual cooperation.	Team had some significant disconnects and frictions, but worked through them.	Team worked reasonably well together, no problems visible.	Team has achieved synergy, allocated work well, and worked together as a cohesive whole.
Comments: **The team works together well as we are in constant communication through discord. Everyone also performs well in the roles that were initially assigned to. If there were any issues, we would immediately bring them up in-person usually.**				

1. Was the team required to adopt new technologies? What were these technologies? What approach did the team use for selecting the appropriate technology for the project? Did the sponsor provide any support for learning these technologies? How well did the team ramp up on the new technologies and begin to apply them effectively?

Yes, all team members were required to adopt the use of the Shopify CLI and development environment in order to implement the product. The team began learning these tools by reading documentation and learning from the official tutorials. However, as of now there are still a few details about the implementation that are unknown or unclear such as best practices for development on a Shopify React app - we will learn these as we continue to develop.

2. Is this an effective team? What has been contributing to and detracting from the team's effectiveness? What are the team's weak points? What are the team's strong points? What changes can the team make for next term that will make it more effective?

Yes, the team feels that we have been effective in working independently and together during meetings. We are able to rely on each other to get work done well. However, we collectively have a big knowledge gap on developing Shopify apps and can do a better job of sharing information uniformly across the team.

Product

Although Process and Project are important, the product is ultimately why projects are initiated and followed through to completion. An effective Software Engineer maintains a steady focus on the product, and understands the scope of what it entails. Although the list below is not exhaustive, and remains short for the first evaluation, it includes some of the primary areas of importance.

Requirements

Sample Rubric: Requirements				
Requirements have not been collected beyond initial project charter. Several key requirements missed	Requirements were collected somewhat effectively, but some key requirements were overlooked initially	Requirements were collected exhaustively, but some were not clarified adequately	Requirements were actively elicited, documented, and understood. Some traceability issues may be present	All functional requirements have been proactively collected and managed. Documentation and traceability is clear and defined
Comments: **The traceability is existent, but not easy to find. For some functionality, the evolution of its requirements can span across several documents and meetings.**				

1. Did the team prepare all the documentation artifacts requested by your faculty coach and sponsor? Were these documents carefully inspected prior to delivery? How would you assess

the quality of the document artifacts?

All necessary documentation artifacts other than the architecture diagram have been submitted on the senior project website and posted on the team website.

2. How well did the team elicit the requirements? Are the requirements fully specified at this point? What approaches were used to elicit the requirements? Were key requirements missed? What methodology was used to document and validate the project requirements?

   The requirements were mostly all given by the sponsor at the commencement of the project. As we learned more about the domain, the team was able to refine requirements as necessary. There currently is no set method of gaining new requirements. The team plans to implement and elicit bonus features if time permits after delivering the MVP and responding to feedback.

3. Products need to be designed within guidelines and constraints appropriate for each project. It is also important to consider the impacts of the products that are designed. In the following categories discuss the constraints and impacts that have a bearing on your project. Note that there may be one or two categories that have no bearing on your project but your project is probably affected by almost all of these.
   a. Economic issues
      Constraint: In times of economic hardship our product has a high chance of being used far less as people would be looking to save money, and subscriptions are likely some of the first things that people will stop buying.
      In addition, the application will only be deployed to the shopify app store. This means that only merchants who use the Shopify platform can be considered potential customers.

      Impact: Improper implementation can lead to wasting company time and money. At the very least our project has to provide value to companies with the subscription management and analytics, if not then that serves as an issue.

   b. Environmental issues
      Constraint: If there are environmental issues such as natural disasters, it can bring servers down leading to businesses losing money.

Impact: Utilizing AI and servers to host and run business raises concerns with resources consumptions. Servers can consume large amounts of energy which can have negative impacts on the environment.

Social issues

Impact: Our project can be viewed as slightly anti-consumer since it adds another layer before they can fully cancel their subscription, but at the same time we offer and do provide discounts.

c. Political issues

Constraint: AI regulations may affect the ChurnGuard AI model.

d. Ethical issues

Impact: The scope of the project changed from emailing potential lost subscribers before they cancel to intervening when they attempt to cancel. Sending an email to an inactive customer may remind them of a subscription they forgot they had. Thus, the design is taking advantage of people forgetting they are subscribed. Additionally, getting in the way of customers canceling is not great from a consumer perspective.

Constraint: Since the main distinguishing feature of this service involves discounts, some customers may attempt taking advantage of the discount system. We need to prepare for this.

e. Health and safety

N/A

f. Manufacturability

Constraint: If a product isn't able to be produced quickly, or produced as quickly as the demand requires, then subscriptions for our product become hard to manage/impractical

Impact: Our project can help advertise certain products a merchant has, and if a certain one or many get very popular, the manufacturer may struggle keeping up with demand.

Impact: If the app is not user friendly then admins will have trouble creating and managing subscriptions.

g. Sustainability

Constraint: Our project is only available if Shopify is available. Even though it is unlikely Shopify goes down, it's always a possibility.

4. What industry and engineering standards must your project adhere to? Were these new standards that the team had to learn? Did your sponsor provide you support for understanding these standards? Did you have to educate your sponsor about these standards?

   Our project aligns with the e-commerce industry, as it functions as a third-party integration app within Shopify. The engineering standards we follow include proper data management for handling subscription payments. Another key standard involves ensuring security and fraud protection to prevent any misuse or deception during the subscription purchasing process for both shoppers and merchants. These standards were something our team had to learn and adapt to during development, as many of us were initially unfamiliar with Shopify's platform and its requirements. Given this, our sponsor did provide us some background support for understanding these standards and with how Shopify works in general. Our sponsor also provided us with some references of another team's project that works similar to ours that we are currently working on. This gave us more background information on how the other team deals with data management and security on their end. The same goes the other way as we also had to educate not only ourselves, but the sponsor on things like the ability to edit and delete subscription plans.

Future Considerations:

Future evaluations will include heavier evaluation in the areas of Design, Implementation and Testing. What are the implications of these at the present point in the project?

Design:

Upon delivery of the MVP, our sponsor plans to conduct early user testing. Feedback from this must be taken into account which may cause redesigns of our UI / UX.

Implementation:

There are several bonus features that our sponsor has indicated to be developed after refining the MVP. As a team, we should plan to finish the MVP in a timely manner to allow a maximum time for testing. As a result we can receive insightful feedback from which to learn and reshape the application. Responding well to this feedback will provide us time to implement bonus features.

Testing

Currently, we are equipped to run automated unit tests. The team has not yet developed a plan for UI testing however as we continue to develop we will be conducting manual tests.