THE UNIVERSITY of ADELAIDE

Retrospective Sprint 1 of Group RTMST1

Real-Time Wine Sensing Tool

by

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Snapshots (Group):

First Snapshot:

Product Backlog and Task Board:

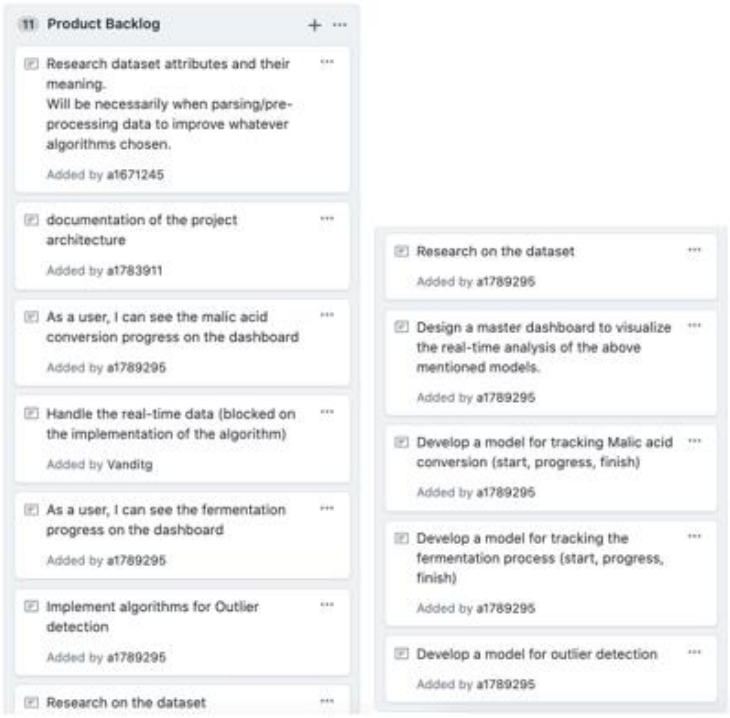

Figure 1. Product Backlog

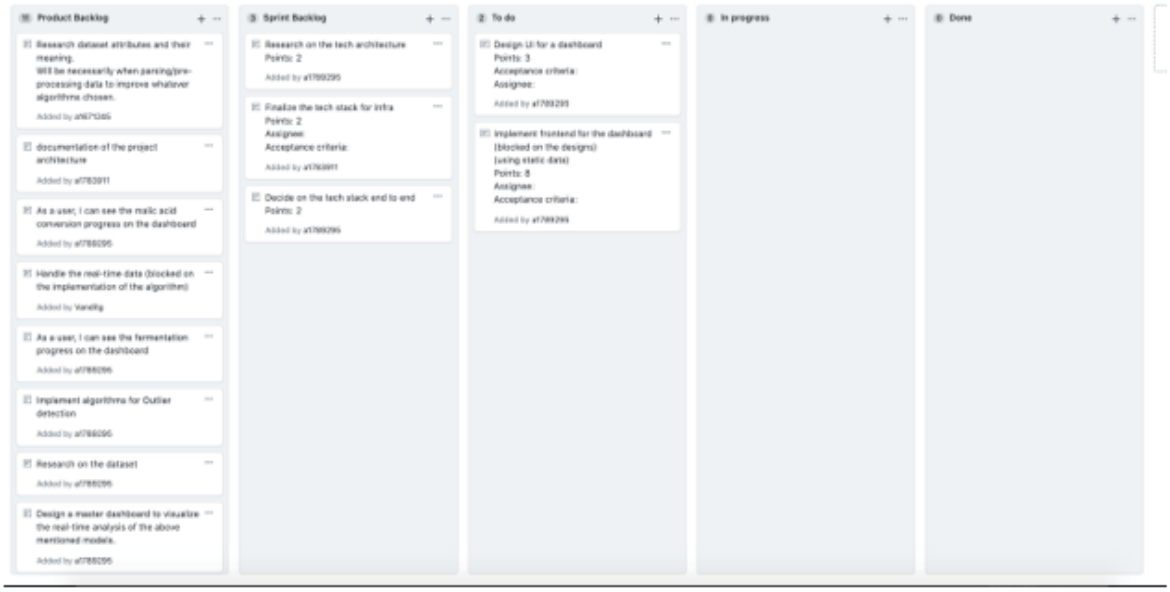

Figure 2. Task Board

Sprint Backlog and User Stories:

Current User Stories:

- **Research on the tech architecture:**

We want to research possible architectures for accessing and interfacing with the dataset, as well as processing the real time data, and architecture for how the user will access and interact with the tool.

Acceptance Criteria:

We have researched and tentatively decided upon architectures that we will use.

- **Decide on a tech stack end to end:**

We want to decide on a tech stack, such as programming languages & IDE for the front end (UI & Website) and backend modelling (data accessing and processing).

Acceptance Criteria:

We have decided as a group on a tech stack for end to end.

- **Finalising tech stack for infra:**

We also want to finalise our decisions for tech stack for the infra part of the design.

Acceptance Criteria:

We have decided and finalised our infra tech stack.

- **Design UI for a dashboard:**

We want to have designed and reviewed a UI/GUI for a user dashboard, where the user will interact with the tool.

Acceptance Criteria:

We have designed and reviewed a UI that the group collectively accepts.

Definition of Done:

Please find below the definition of done for each user story, in sprint 1:

Research on the tech architecture: This story will be considered done when we have finalized on:

- What all layers will be there in the entire projects: Like Front end, server, backend, database.
- How the data will from between those layers. Like how the back end will get the data from database, how will it pass on to the front end.

Finalize the tech stack for Infra: This story will be considered done when we have closed on:

- The technologies on which we will building our server.
- The IDE which will be used to build up the server.

Decide on the tech stack end to end: This story will be considered done when we have closed on:

- The technologies on which we will be building up the backend.
- The technologies on which we will be building up the front end.
- Any additional technology required to establish the communication between layers.

Design UI for a dashboard: This story will be considered done when we have finalized the look and feel of the dashboard.

Implement frontend for the dashboard: This story will be considered done once we have implemented the code for the dashboard according to the design finalized in the above point.

Summary of changes:

Since this was the first week of our first sprint, the snapshot has been created for the very first time. In this snapshot, we have built our product backlog by creating all the relevant user stories to the project. Then depending on the team's capacity and the requirements of the project in hand, we chose the stories from product backlog to be put in sprint backlog. For each ticket in the sprint backlog, we mutually agreed on definition of done and the allocated the sprint points to each ticket depending on their complexities. Some stories which did not have dependence on other tickets were moved to 'todo' state.

Second Snapshot:

Product Backlog and Task Board:

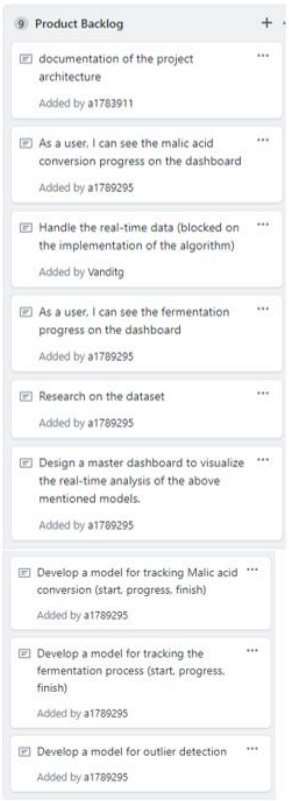

Figure 3. Product Backlog

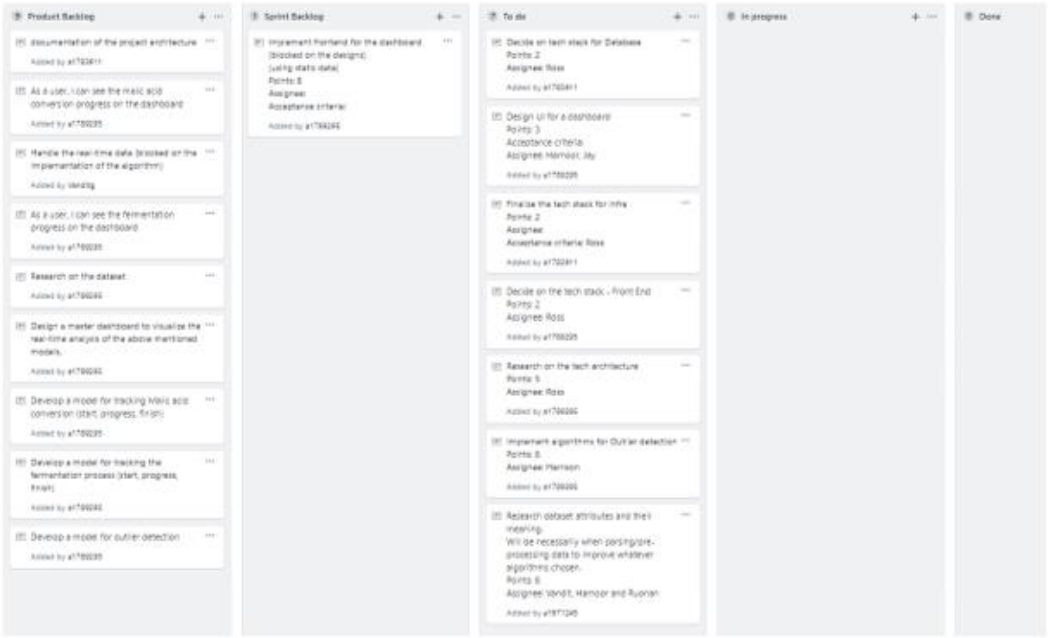

Figure 4. Task Board

Sprint Backlog and User Stories

- **Implement Frontend for the dashboard:**

We need to implement a design of the dashboard to be used as a front end for the user to interact with.

Acceptance Criteria:

We have a working front end that can be interacted with.

- **Decide on tech stack for Database**

We need to decide on a tech stack, such as a programming language (SQL or panda for example) to be used as a database. Alternatively, we need to decide if a database is the best option for this project.

Acceptance Criteria:

We have decided on a tech stack for the database.

- **Design UI for a dashboard:**

We want to have designed and reviewed a UI/GUI for a user dashboard, where the user will interact with the tool.

Acceptance Criteria:

We have designed and reviewed a UI that the group collectively accepts.

- **Finalise the tech stack for infra:**

We also want to finalise our decisions for tech stack for the infra part of the design.

Acceptance Criteria:

We have decided and finalised our infra tech stack.

- **Decide on Tech stack for Frontend:**

We want to decide on a tech stack, such as a programming language and which IDE to use.

Acceptance Criteria:

We as a group have decided on a tech stack to use for front end development.

- **Research on the tech architecture:**

We want to research possible architectures for accessing and interfacing with the dataset, as well as processing the real time data, and architecture for how the user will access and interact with the tool.

Acceptance Criteria:

We have researched and tentatively decided upon architectures that we will use

- **Implement the algorithm for outlier detection:**

There may be outliers for any machine learning algorithm we implement. We want to create another algorithm to detect and remove these outliers so we can get more precise results.

Acceptance Criteria:

We have an algorithm that successfully identifies and removes outliers.

- **Research Dataset Attributes and their meaning:**

The dataset contains several attributes that determine the value of the label. Understanding these labels will give the project greater significance and will give various results more meaning. We want to determine what each attribute means.

Acceptance Criteria:

We have a description and an understanding of what each dataset attribute means.

Definition of Done:

Please find below the definition of done for each user story, in sprint 1:

Implement Frontend for the dashboard: This story will be considered done when we have finalized on:

- Design the front-end architecture of the core product.
- Realize and continue to optimize.

Determine the tech stack of the database: This story will be considered done when we have evaluated the pros and cons of several programming languages for the project and selected the appropriate language after weighing them.

Finalise the tech stack for infra: This story will be considered done when we have closed on:

- The technologies on which we will building our server.
- The IDE which will be used to build up the server.

Design UI for a dashboard: This story will be considered done when we have finalized the look and feel of the dashboard.
Implement frontend for the dashboard: This story will be considered done once we have implemented the code for the dashboard according to the design finalized in the above point.
Research on the tech architecture: This story will be considered done once we have found an architecture for accessing and interfacing with data sets and processing real-time data.
Implement the algorithm for outlier detection: This story will be considered done when we have closed on: The algorithm based on Anomaly detection could normally accomplished with related statistics.
Research Dataset Attributes and their meaning: This story will be considered done when we have found enough resources for dataset attributes to support a dataset as flexible as it could for different algorithms.

Summary of changes:

This was the second week of our first sprint, the snapshot has been contributed by each group members. In this snapshot, we have built our product backlog by creating all the relevant user stories to the project. Then based on the abilities and academic preferences of the group members, we chose the stories from product backlog to be put in sprint backlog. We refined the task and divided the sprint backlog into many "TODO" cards. These detailed decisions and research make the project completed without omission. Compared with the first snapshot showing the contents of the big frame, the second snapshot is more specific and facilitates the progress of the project.

Declaration: I have attended sprint 1 planning meeting on 10th August 2020 and sprint 1 retrospective meeting/sprint 2 planning on 26th August 2020 with the tutor Mr. Navpreet Singh Ahuja.

What went well in the sprint (Individual):

Our first sprint was about defining the tech stack for back-end and front-end along with user stories that our group members selected for project sub-tasks in the first sprint backlog. One of the important points was to create a timeline for each sub-task to complete it. After taking consideration of the client's need, I came up with the definition of done for the project. Our version control tool to maintain and test the code for the project is GitHub; PyCharm which is python IDE used for building the codebase and Scikit-learn library is for implementing Machine Learning algorithms. Currently, I have created and tested several Machine Learning algorithms on one of the wineries datasets (UCI Machine Learning Repository - Wine Quality Dataset [1])and the code can be found at shorturl.at/gptvT

What could be improved (Individual):

As we progressed to the second sprint, there were certain limitations I figured out during the first sprint retrospective.

- Our application/framework is heavily based on the dataset which we will get from the company, however, due to legal processes, we were not able to get the dataset, and the dataset is a crucial part to train our Machine Learning models/algorithms to get an accurate result. Thus, our team invested a huge amount of time in finding similar kind of dataset to initialize the work, and because I previously worked on wine quality detection, I found one of the datasets which are UCI Machine Learning Repository - Wine Quality Dataset [1] and the dataset is open access.
- There was also one of the issues we found out in the meeting with the tutor that we did not come up with user stories, as we were unaware of and had to complete this sub-task immediately after the meeting and which caused us a lot of trouble.
- In our first week, our team had major communication gap as our team is having a diverse group of people containing undergraduate and postgraduate students, thus time management is also crucial for us and we decided to move

our entire scrum meetings to online, therefore the first week was very challenging for all of us in the terms of communication. So we increased our meeting frequency by having two scrum meetings at the end.

What will be the group commit to improve in the next sprint(Individual)?

In our last scrum meeting of the first sprint, we discussed the issues and decided to follow certain rules and strategies in the implementation of the successful development of our product.

- Frequent communication, updates on development progress for each of our tasks, and use/maintain version control for effectiveness.
- We are working hard to make sure that whichever the algorithm we will be using should be helpful in our product as it needs to be low in computation cost and accurate enough to do sub-tasks (i.e. Outlier detection).
- Our next phase is to code and test the different functionalities as we have to make communication between our front-end and back-end to show real-time analysis on our dashboard. Thus we are developing a git wiki first where we are making initial diagrams and code accordingly, which can be found in our GitHub repo.
- One of the main goals of this project is to consider timeframe too while working on the product, thus we have created a timeline to make sure at the end of every sprint, we should come up with some development to show our tutor and the team, thus by the end of the fifth sprint, we're ready with our product, report, and testing documentation.

References:

[1] Cortez P, Cerdeira A, Almeida F, Matos T, Reis J. Modeling wine preferences by data mining from physicochemical properties. Decision Support Systems. 2009 Nov 1;47(4):547-53.