Retrospective Sprint <4> of Group <Path5>

ATSYS_Shortest Path Algorithm for Material Transportation

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1. What went well in the sprint?

From my perspective, this sprint has been the most organised one ever. In sprint 4, our group has successfully addressed and refined any issues that have been mentioned in previous sprints. For instance, compare with the initial chaotic management for the first three user stories, this time when we received two new user stories, the way we divided tasks and organised the GitHub task board was much more clear and more conscious right from the beginning. Tasks are divided in a reasonable way with meaningful titles and reasonable descriptions, so we don't have to redo it this time like we did before. This evidence suggests that we have the ability to learn from the past experiences and apply what we have learnt effectively to prevent making the same mistakes.

Another example relates to a team member mentioned before who was previously less participative during meetings. This time, after meetings, I proactively summarise the key points and communicated progress and tasks to this team member. This ensures that he stays on track and maintains the pace of our software development. Both examples demonstrate our team can learn from past experiences and put what we have learned into practice. Our continuous self-improvement from feedbacks received and lessons learned enhances the overall capabilities of our team to develop a better software through continually refinement of our technical solutions.

2. What could be improved?

In this sprint, one issue that we need to pay attention is the quality of our works. Although this sprint was well-organised, tasks were completed on time, the overall quality of our works was really low. During this sprint, we integrated all our functionalities with the user interface, it requires more test cases to ensure the quality and performance of our final product. Unfortunately, even it was at the early stages of testing, I was able to discover significant number of bugs and even incomplete functionalities.

This lack of quality would not only consume us more time to fix these issues but also slow down the testing progress. As a result, we couldn't complete all the testings within this sprint and had to carry it over to the next one. This brings a significant and negative impact on our timeline, affecting subsequent sprints since we need to allocate time for doing incomplete tasks that we didn't finish in this sprint, leaving us less time to focus on new tasks and refine our software. Thus, we have less available time for addressing new development tasks and negatively impact our ability to build a better software.

3. What will the group commit to improve in the next sprint?

In the future sprints, we aim to enhance the quality of our works. During this sprint, I noticed that the overall quality of our code is quite low. I encountered a significant number of bugs found during the initial testing stage, which led to delays in our progress. To address this issue, our group is committed to enhancing the quality of our work through the following two points:

More unit testing

In the future, we will conduct more unit testings for each new functionality implemented. More unit testing can increase our test coverage therefore issues and bugs can be caught and fixed at an earlier stage which is easier and more time-effective. By doing this, we are not just improving the code quality but also preventing from falling behind schedule and leaving us more time to refine our software.

Peer review

In the subsequent sprints, we introduce a more strict peer review process for all new work. Each new piece of work will undergo a careful review by two team members rather than justing sharing new work in the meeting. This review process aims to identify hidden errors and check coding standards. By doing this, reviewers can gain insights and different ideas by examining work from the group. This does not only elevate the quality of our work, it also encourages group collaboration and knowledge sharing.

4. Comment on your progress this sprint.

- Updated Github Task Board

Since previously I raised the issue of our disorganised Github task board and I was the one who redid the whole task board, I'm also the one who updated tasks on GitHub for this sprint.

- Written Snapshot 4.1 and 4.2

Because I'm managing the GitHub task board and I'm very aware of the team's progress, I'm perfect for writing these two snapshots.

- Testing

I did unit testing for the add devices/edges, delete devices/edges features. I brought up lots of test cases for integration testing.

I have attended all sprint review/planning meetings with the tutor(PO).

Snapshot Week <9> of Group <Path5>

Snapshot 4.1

Project: ATSYS_Shortest Path Algorithm for Material Transportation

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    Shijie Zhang_a1809881

<u>Product Backlog and Task Board</u>

Product Backlog

User Story 1	User Story 2	User Story 3
As a user, I want to store devices in the system so that I can add/remove/update them.	As a user, I want to get the shortest path between 2 given devices so that material transportation will be efficient.	As a user I want to mark devices to exclude, so that shortest paths can be identified avoiding them.

User Story 4	User Story 5
As a user, I want to get 5 shortest paths given a single source and multiple destinations, so that material distribution will be efficient.	As a user, I want the execution time of each operation to be optimised as possible and visualise the output (the 5 shortest paths) as a table or as a console output ordered by the path cost, so that user experience aspect will be improved.

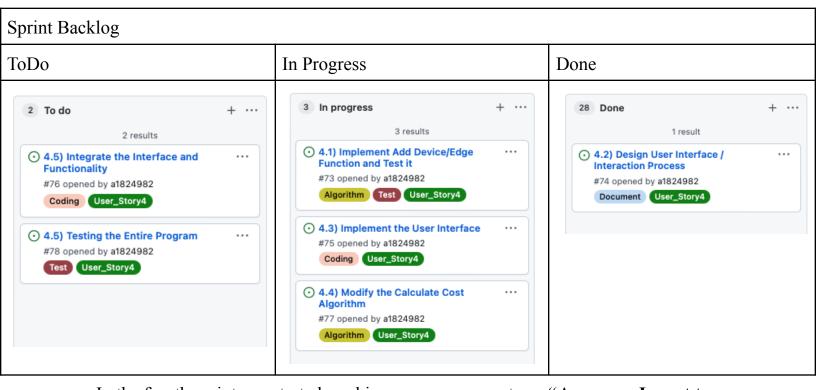| Task Board	
Tasks For User Story 4	Tasks For User Story 5

Tasks For User Story 4

⊙ **4.1) Implement Add Device/Edge Function and Test it**   ···
#73 opened by a1824982
`Algorithm` `Test` `User_Story4`

⊙ **4.2) Design User Interface / Interaction Process**   ···
#74 opened by a1824982
`Document` `User_Story4`

⊙ **4.3) Implement the User Interface**   ···
#75 opened by a1824982
`Coding` `User_Story4`

⊙ **4.4) Modify the Calculate Cost Algorithm**   ···
#77 opened by a1824982
`Algorithm` `User_Story4`

⊙ **4.5) Integrate the Interface and Functionality**   ···
#76 opened by a1824982
`Coding` `User_Story4`

⊙ **4.5) Testing the Entire Program**   ···
#78 opened by a1824982
`Test` `User_Story4`

Tasks For User Story 5

⊙ **5.1) Add the 'Timer Functionality'**   ···
#79 opened by a1824982
`Coding` `User_Story5`

⊙ **5.2) Test if '1-to-1 scenarios' Reach Acceptance Criteria**   ···
#80 opened by a1824982
`Test` `User_Story5`

⊙ **5.3) Test if '1-to-N scenarios' Reach Acceptance Criteria**   ···
#81 opened by a1824982
`Test` `User_Story5`

⊙ **5.4) Optimise the Program if Needed**   ···
#82 opened by a1824982
`Refactor` `User_Story5`

Sprint Backlog and User Stories

Sprint Backlog		
ToDo	In Progress	Done

In the fourth sprint, we started working on a new user story: **"As a user, I want to get 5 shortest paths given a single source and multiple destinations, so that material distribution will be efficient"**. In this user story, users not only want to find out the distance from one starting point to a single destination but also the cost from one starting point to multiple destinations. This will increase the efficiency of material transportation. Additionally, users have provided the expected output. We need to modify our current algorithm to calculate any overlap in the paths in '1 to N' scenarios and add a user-friendly interface for users to perform desired operations and display the requested results.

Definition of Done

- A coding task is considered to be completed when the code has been written in accordance with the coding standards outlined in the initial report, tested (both unit and integration) refactored as needed, successfully passed peer review and obtained approval from all members of the team.
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Summary of Changes

During this week's snapshot, several changes, updates and decisions have been made. These changes mainly focus on: 1) realizing the functionality of computing the path from one source to multiple destinations with the lowest cost 2)designing and implementing a user-friendly interface for users to perform required operation easily. Highlights include:

1. **Broke** two new user stories down into several small tasks.
2. **Carefully designed** a new user interface to streamline all the operations.
3. **Successfully connected** python scripts with Neo4j database.
4. **Updated** the algorithm to calculate the shortest path, testing will be done next week.
5. **Updated** everything on Github Taskboard.

Overall, these are the main updates made between the previous snapshot.

Snapshot Week <10> of Group <Path5>

Snapshot 4.2

Project: ATSYS_Shortest Path Algorithm for Material Transportation

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Product Backlog and Task Board

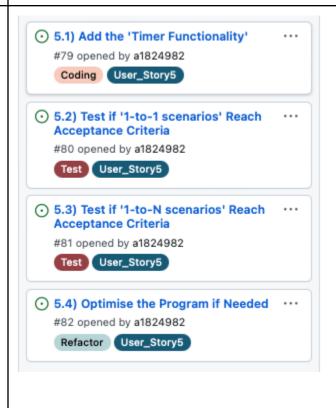### Product Backlog

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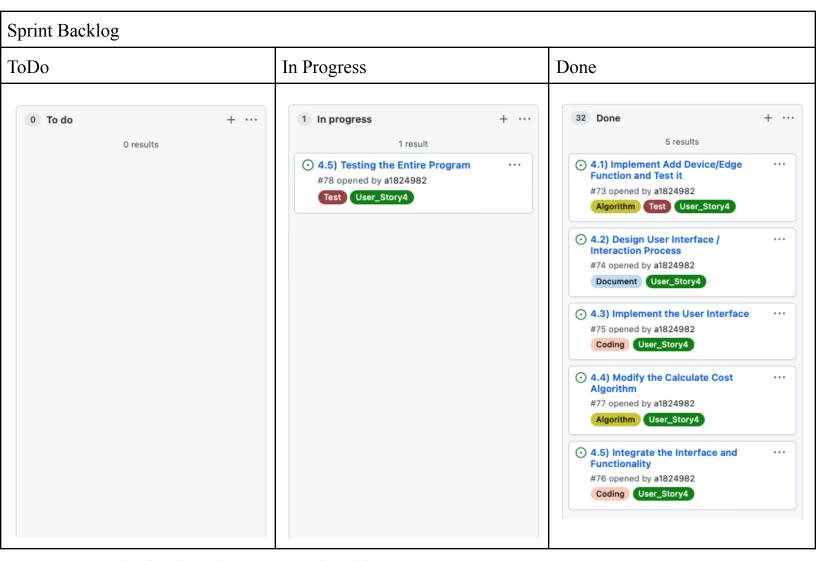| User Story 4	User Story 5
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Summary of Changes

During this week's snapshot, several changes, updates have been made. These changes mainly focus on: 1) implementing the user interfaces 2) integrating the interface with implemented functionality Highlights include:

1. **Implemented** several versions of the user interface.
2. **Updated** the algorithm to implement 1-to-N scenarios.
3. **Successfully integrated** the user interface with implemented functionality.
4. **Updated** everything on Github Taskboard.

Overall, these are the main updates made between the previous snapshot. Next week, we will finish the testing and move to user story 5.