Grading and feedback sheet: **TASK 1**

Group: 51 **Overall Mark:** 17/20

Participating Members:

1 Vallance, Matthew
2 White, Deanna
3 Mogali, Varnika
4 Harmsworth, Kayleigh
5 Patel, Deeya

	marks
1. Rationale for selecting specific algorithms and data structures, complemented by empirical performance analysis using synthetic data of varying sizes.	3/5
2. Deliberation on test data selection, accompanied by a table highlighting the tests executed to ascertain correctness and efficiency.	5/5
3. Results derived from the tasks, including screen-captured presentations showcasing the functionality of your application code and compliance with the use of the required library code.	5/5
4. Final remarks, along with an insightful discussion addressing the limitations of the undertaken work.	4/5

Feedback

What you did well in this task:

Your writeup provides good explanation to your choice of data structures and algorithm. You have provided snapshots to evidence the library you used. You have provided an elaborated test case and its results generated. You have also plotted the histogram and provided snapshots of the results generated. You have also reflected on what algorithm would improve your work.

What you could improve in this task:

You should have given worst time complexity of Dijakstra's with O representation. For the empirical performance analysis, you should have tested your algorithm using synthetic datasets ranging in size from 10 to some value. You should have given the time taken for these test cases in a table format or plotted a graph. This would illustrate the algorithm's time efficiency, comparing metrics such as elapsed time (in microseconds) against different data sizes.

The screen shots of the results captured should have considered different boundary cases cases and also included the run time.

Reflections on the limitations should have been more detailed to from the critical point of view, in the direction to improvise the time within the developed constraints, for instance how even speaking about how adjacency-list has reduced or increased the time complexity?

Marker: Punitha Puttuswamy

Grading and feedback sheet: **TASK 2**

Group: 51 **Overall Mark:** 15/20

Participating Members:

1 Vallance, Matthew 001225832 mv5742c 100%

2 White, Deanna 001208356 kw5189t 100%

3 Mogali, Varnika 001279757 vm5770h 100%

4 Harmsworth, Kayleigh 001218868 kh7920k 100%

5 Patel, Deeya 001230057 dp4381f 100%

	marks
1. Rationale for selecting specific algorithms and data structures, complemented by empirical performance analysis using synthetic data of varying sizes.	5/5
2. Deliberation on test data selection, accompanied by a table highlighting the tests executed to ascertain correctness and efficiency.	3/5
3. Results derived from the tasks, including screen-captured presentations showcasing the functionality of your application code and compliance with the use of the required library code.	5/5
4. Final remarks, along with an insightful discussion addressing the limitations of the undertaken work.	2/5

Feedback

What you did well in this task:

Section 3 of task 2 is perfect.

What you could improve in this task:

1. The rationale for choosing the Dijsktra's algorithm is provided in task 1 but in very trivial quantity and needs more explanation. Since the same algorithm is used for Task 2, I have taken into consideration. However, you should have explained it separately for Task 2. The empirical analysis is included which is very good. Also, the theoretical complexity of the algorithm could have been mentioned and compared with results of empirical analysis. I could find the complexity of Dijkstras mentioned in Section 2 of task 2, which is good.

2. The table of test cases are included but should include the count of stations as a column since the Task2 is based on that. A manual analysis of the number of stations vs the one the produced by the program could have been added. A few more non-trivial test cases could have been added. For example, a test case with a pair of initial and final stations with multiple (non-trivial) paths between them could have been added.

3. -

4. The limitations of Dijkstras as it can't process negative weights are mentioned. It's acceptable but you could have provided limitations specific to the shortest path algorithm that you have used or could mention how effectively you could have modified the existing algorithm. For ex. Modifying it in a way so that the time complexity could slightly improve etc.

Marker: Razia Sulthana

Grading and feedback sheet: **TASK 3**

Group: 51 **Overall Mark:** 17/20

Participating Members:

1 Vallance, Matthew
2 White, Deanna
3 Mogali, Varnika
4 Harmsworth, Kayleigh
5 Patel, Deeya

	marks
1. Rationale for selecting specific algorithms and data structures, complemented by empirical performance analysis using synthetic data of varying sizes.	3/5
2. Deliberation on test data selection, accompanied by a table highlighting the tests executed to ascertain correctness and efficiency.	5/5
3. Results derived from the tasks, including screen-captured presentations showcasing the functionality of your application code and compliance with the use of the required library code.	5/5
4. Final remarks, along with an insightful discussion addressing the limitations of the undertaken work.	4/5

Feedback

What you did well in this task:

Very good testing throughout different tasks.

What you could improve in this task:

1.

You could talk about the empirical performance analysis here. You can further compare the empirical and theoretical performances with Big O notation.

2.

Great!

3.

All are included but in different sections.

4.

Great.

Marker: Tuan Vuong

Grading and feedback sheet: **TASK 4 + Progress journal**

Group: 51 **Overall Mark:** (14+18)/(20+20)

Participating Members:

1. 1 Vallance, Matthew **100%**
2. 2 White, Deanna **100%**
3. 3 Mogali, Varnika **100%**
4. 4 Harmsworth, Kayleigh **100%**
5. 5 Patel, Deeya **100%**

	marks
1. Rationale for selecting specific algorithms and data structures, complemented by empirical performance analysis using synthetic data of varying sizes.	4/5
2. Deliberation on test data selection, accompanied by a table highlighting the tests executed to ascertain correctness and efficiency.	4/5
3. Results derived from the tasks, including screen-captured presentations showcasing the functionality of your application code and compliance with the use of the required library code.	3/5
4. Final remarks, along with an insightful discussion addressing the limitations of the undertaken work.	3/5
5. A sequentially organized progress journal with weekly entries, marked by dates, detailing communication logs (along with accumulated credit for each member), an outline of each member's contributions, compliance with the given format, language clarity, etc.	18/20

Feedback
What you did well in this task: **A good choice of Kruskal algorithm.**
What you could improve in this task: 1. **In Report Template, "1. … complemented by empirical performance analysis using synthetic data of varying sizes." In the coursework tips, "To empirically demonstrate the performance of the selected algorithm, artificially generated data of different sizes can be utilized to illustrate the time efficiency (e.g., elapsed time in microseconds vs. data size). ... A comparison between the empirical and theoretical performances can be discussed". These were fully satisfied such as "varying sizes".** 2. **In the coursework tips, "2. ... you may manually determine ... using pen and paper, then compare these findings with the results obtained from your code." These parts are missing.** 3. **In the coursework specification, "(4a) ... 2. If the closure can be executed, list the affected routes by naming the adjacent stations on each line; ; for instance, ..." This part is missing.** 4. **More extensive discussion on the limitations would help.** 5. **The evidence of weekly communication should have included accumulated credit per member up to that, but not merely stating it in the report.**

Marker: Ik Soo Lim