Assigment2

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- 3d Gaussian Splatting for Scene Reconstruction
- Prof. Feng Zheng

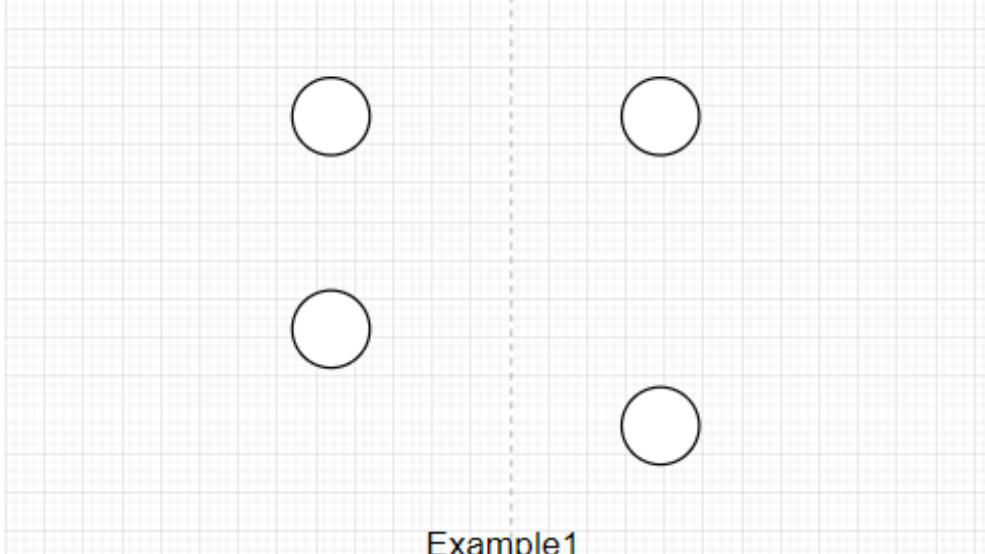
Task 1

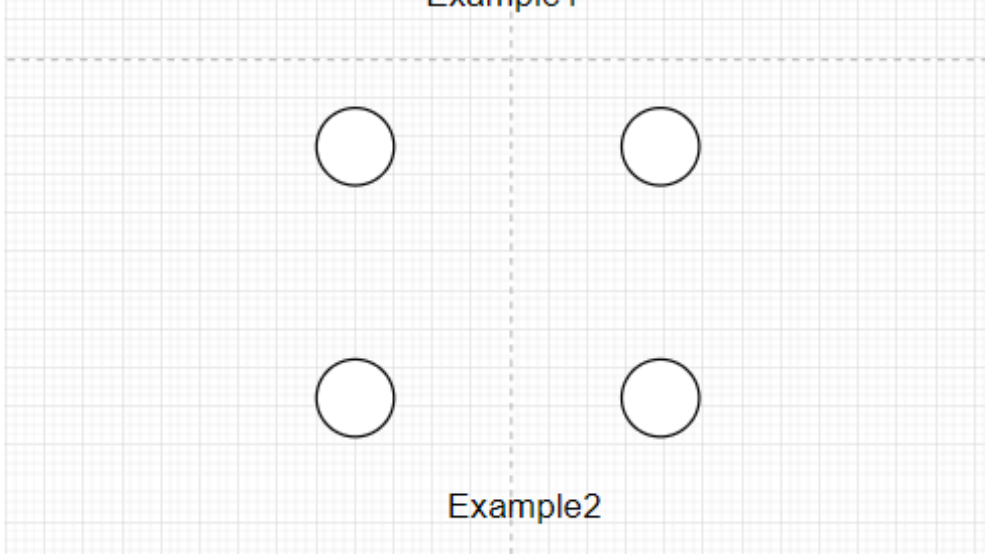
Task 1-1

As shown, two examples can demonstrate the strength of the simple nearest neighbor greedy algorithm

- Example:

For both side, the simple nearest neighbor greedy algorithm can find the optimal solution.



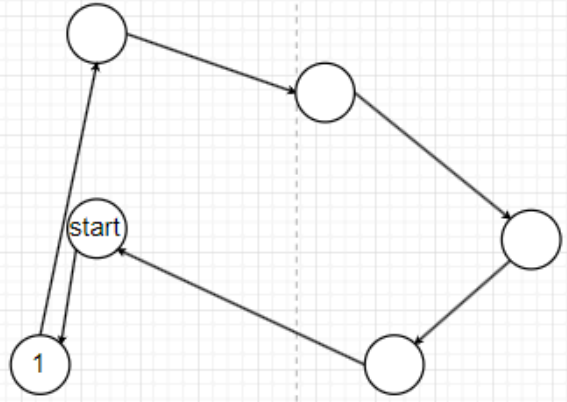


Task 1-2

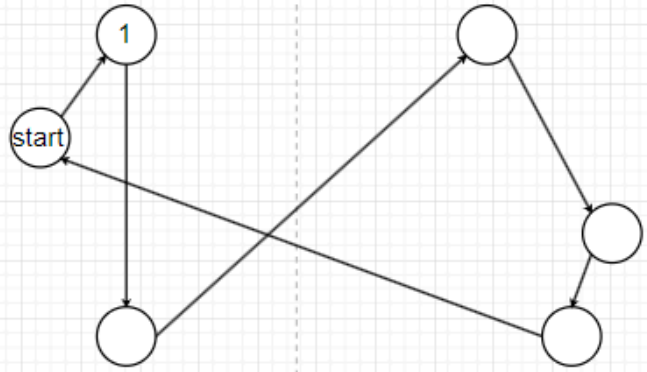
As shown, two examples can demonstrate the importance of the choice of a start city

- Example:

As shown, the choice of a start city can affect the final solution. Path shown in the right figure is a bad solution. If the start city is chosen as the city 1, the path will be the optimal solution.



Example1

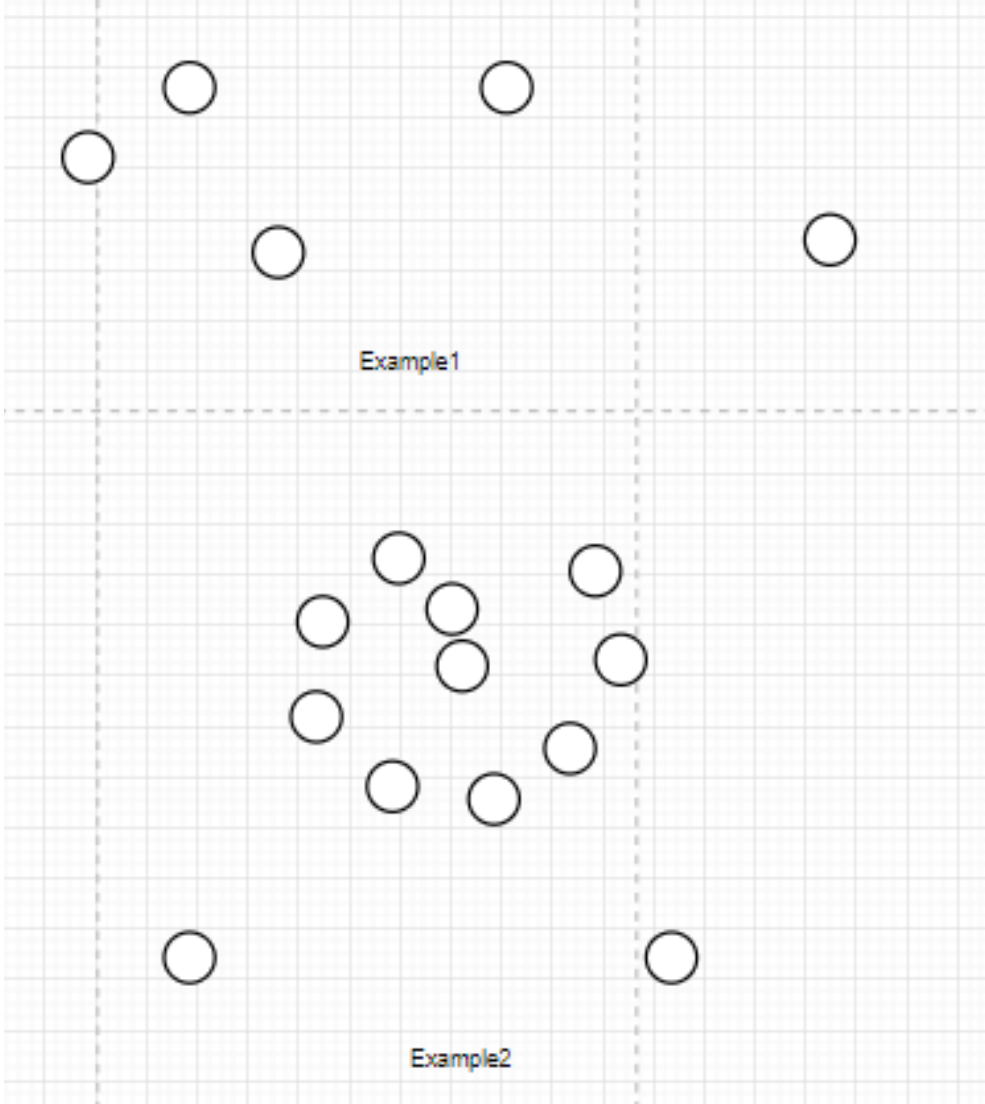


Example2

Task 1-3

As shown, two examples can demonstrate the weakness of the simple nearest neighbor greedy algorithm

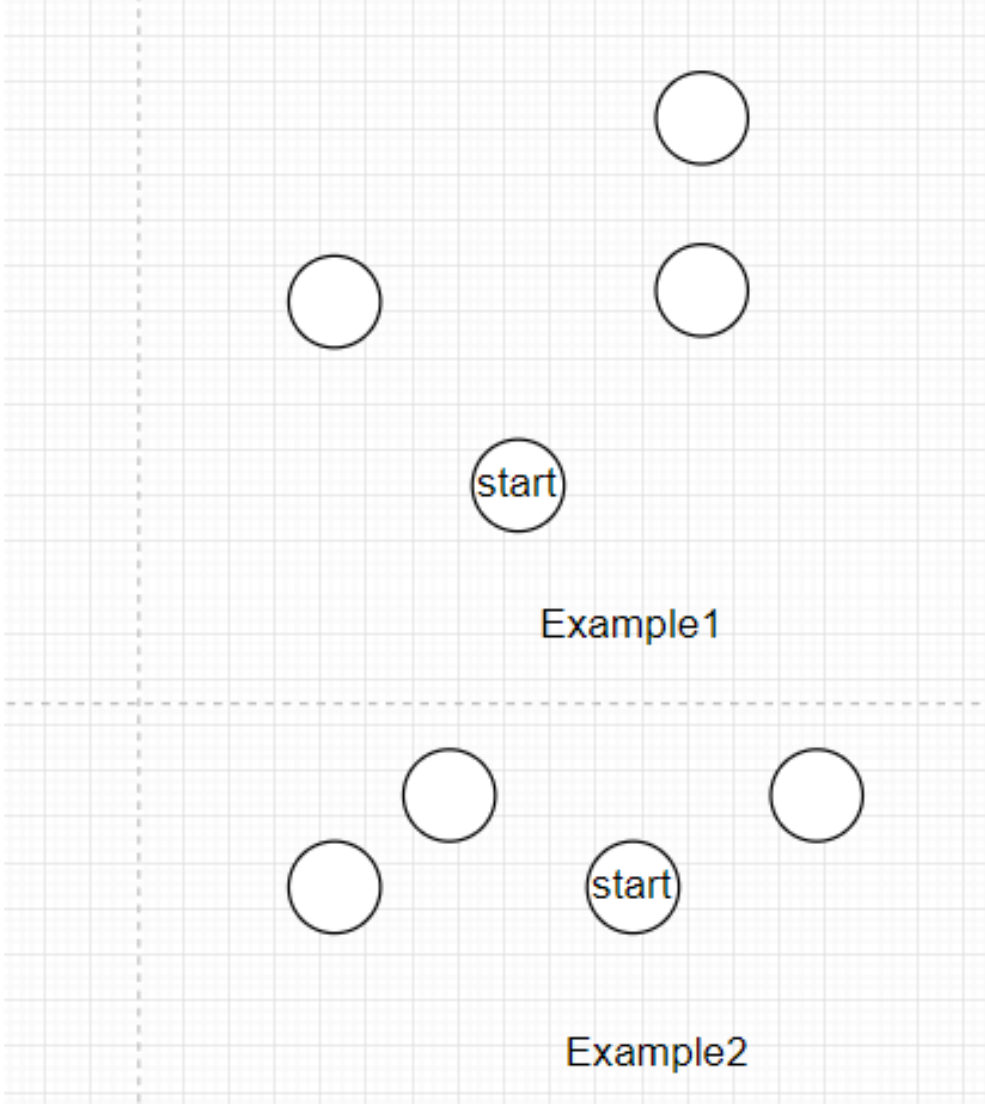
- No city can lead greedy algorithm to the optimal solution



Task 1-4

As shown, two examples can demonstrate the importance of the choice of a tie-breaking mechanism

- Left/Right Choice from start will lead to different results.



Task 2

I cannot design any in an Euclidean space where the simple nearest neighbor greedy algorithm will not find the optimal solution.