

Worksheet 10

Kaung Khant Lin - 6540131

542

Problem A

1. Version 1 is pick the activity with the earliest start time and Version2 is with finish time.

3. The strategy that gives the always gives the best answer is to sort the activities in the increasing order of finish time.

4.

- i) a_{j+1}^*
- ii) m - optimal result
- iii) m
- iv) earlier (or at the same time)
- v) a_{j+1}^*
- vi) m
- vii) m
- viii) m

Problem B

- Cycle
- Because T^* is a Minimum Spanning Tree, and trees cannot contain cycles. If all edges of C were in T^* , it would contain a cycle, which is impossible.
- Because f is part of a cycle. Removing a single edge from a cycle does not disconnect the graph. Since graph remains connected and has $V - 1$ edges, it is still a Spanning Tree.
- <
- \geq
- \geq
- No. Because in every step, we swap an edge f with an edge e where $\text{weight}(e) \geq \text{weight}(f)$. Therefore, the total weight never decreases.
- =

