UNIVERSITY OF INNSBRUCK
MASTERSTUDIUM INFORMATIK VERTIEFUNGSMODUL (WM 9)
Automatic Planning
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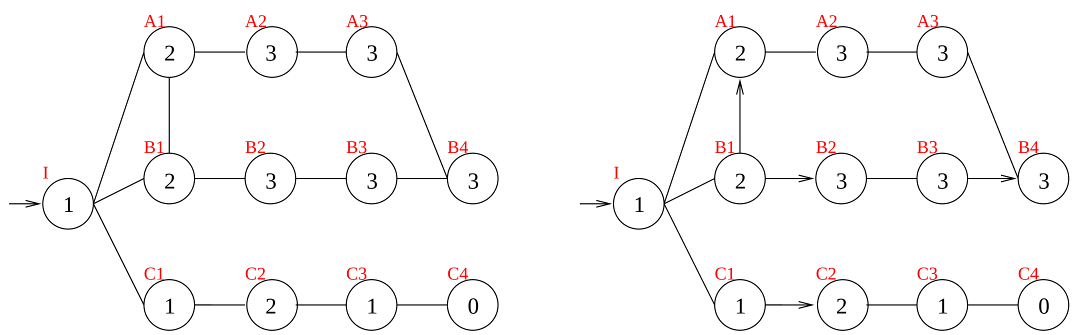
Tutor: Adina Sirbu
Exercises Nr. 8. **To be returned on Tuesday, Dec 11**

Exercise 1. (6=1+1+1+1+1+1 points)

Consider the following two annotated state space graphs (each node is labelled with a name that serves only for the write-up of your solutions):



(A) (B)

1. For graph (A), give all plateaus. Use a notation as sets of nodes, where each node is represented by its name in the figure – e.g., "$\{C4\}$".

2. Annotate each set in your solution to 1. with the respective plateau class ("Local Search Topology", slide 27).

3. For each node in graph (A) that lies in a bench, give the node's exit distance – e.g., "A3: 1".

4. For graph (B), give all plateaus. Use a notation as sets of nodes, where each node is represented by its name in the figure – e.g., "$\{C4\}$".

5. Annotate each set in your solution to 4. with the respective plateau class ("Local Search Topology", slide 27).

6. For each node in graph (B) that lies in a bench, give the node's exit distance – e.g., "A3: 1".

Exercise 2. (4 points)

Say S, E, and h constitute an annotated state space graph, as in the lecture. Assume that E is undirected, i.e., for all $(s, s') \in E$ we have $(s', s) \in E$. Assume that $P \subseteq S$ is a plateau ("Local Search Topology", slide 22), and that $s \in S$ is an exit of P ("Local Search Topology", slide 25). Show that $s \in P$. "Tip": This can be proved in 3-4 sentences. Don't write more than half a page.