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Artificial Intelligence – for Professor Davis

Problem 1:

1. If we are to characterize the scheduling problem as a tree-structured state space search problem, then we could consider each levek I of the tree to represent task I, with the state being which process the task has been assigned to. So each node of the tree has exactly two children, representing whether the next (i+1)-th task is given to process 1 or process 2. Therefore the operator is the switching of a task from task 1 to task 2, and the branching factor is exactly 2. The depth of the goal node is then always going to be 4, since we need to assign every task to a process.
2. Below is an example of a portion of the state space for a depth-first search.

T­4: P1

T­3: P1

T­4: P1

T­3: P2

T­2: P1

T­1: P1

ø

T­4: P2

1. Below is an example of the state history for a breadth-first search

T­2: P1

T­1: P2

T­1: P1

ø

T­2: P2

Problem 2: