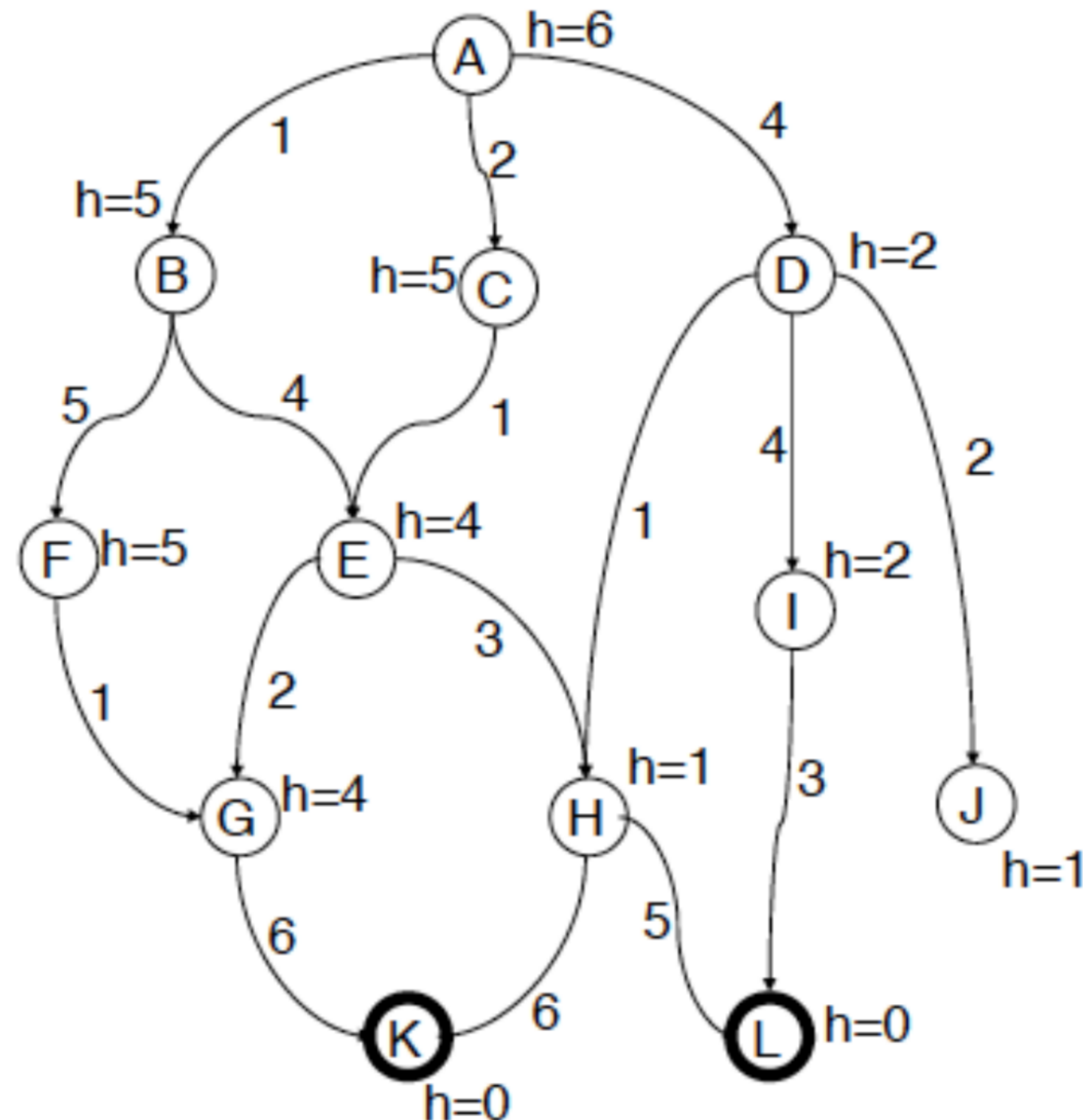


Exercise (greedy best first and A*, from A to the goal)



Modify the program from last class to implement the greedy best first and A* search for this graph. Compare the solution paths. Play with the heuristics and see what different heuristic functions would yield as solutions. Play with weighted A* with different weights, and compare.

Homework (A* Vacuum Cleaner)

You should be able to use much of the code from 'search_vacuum.py' located under uninformed search on blackboard, although you should use A* search and expand it to a 4-square environment like in the first homework.

Also take the following into consideration:

1. As previously, the state of the search should be represented with three elements: A state, a path and a cost.
2. Cost is defined as the number of moves taken (i.e. up, down, left, right) to achieve the goal state from the initial state.
3. Create a heuristic function which is used in the search describing the cleanliness of the environment.

You can also explore other ways of defining cost and the heuristic function.

Challenge: Can you generalize it to an environment of arbitrary size?