

Search Algorithms

- Depth First Search
- Breadth First Search
- Uniform Cost Search
- Hill Climbing
- Best First Search
- A* Algorithm

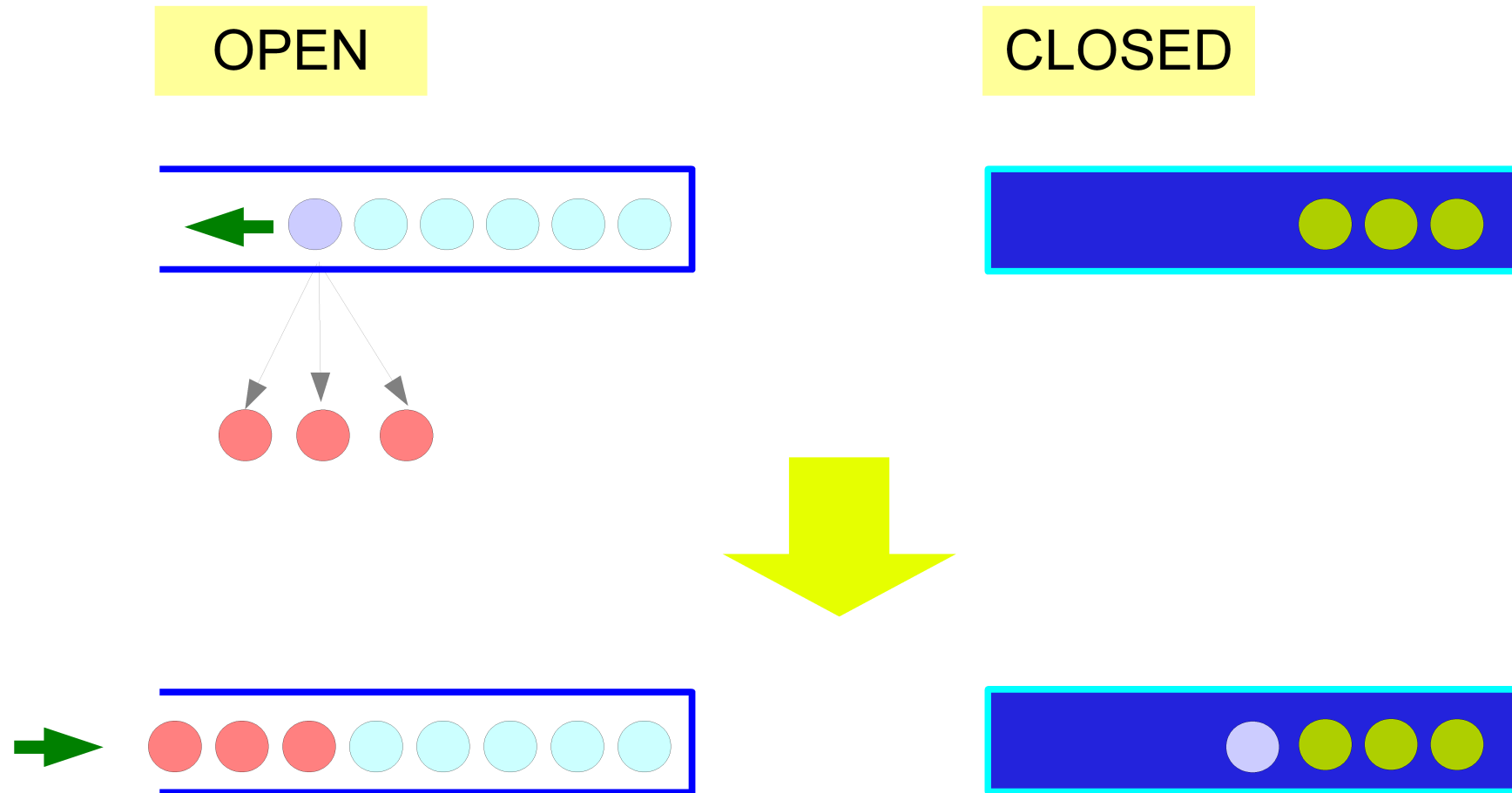
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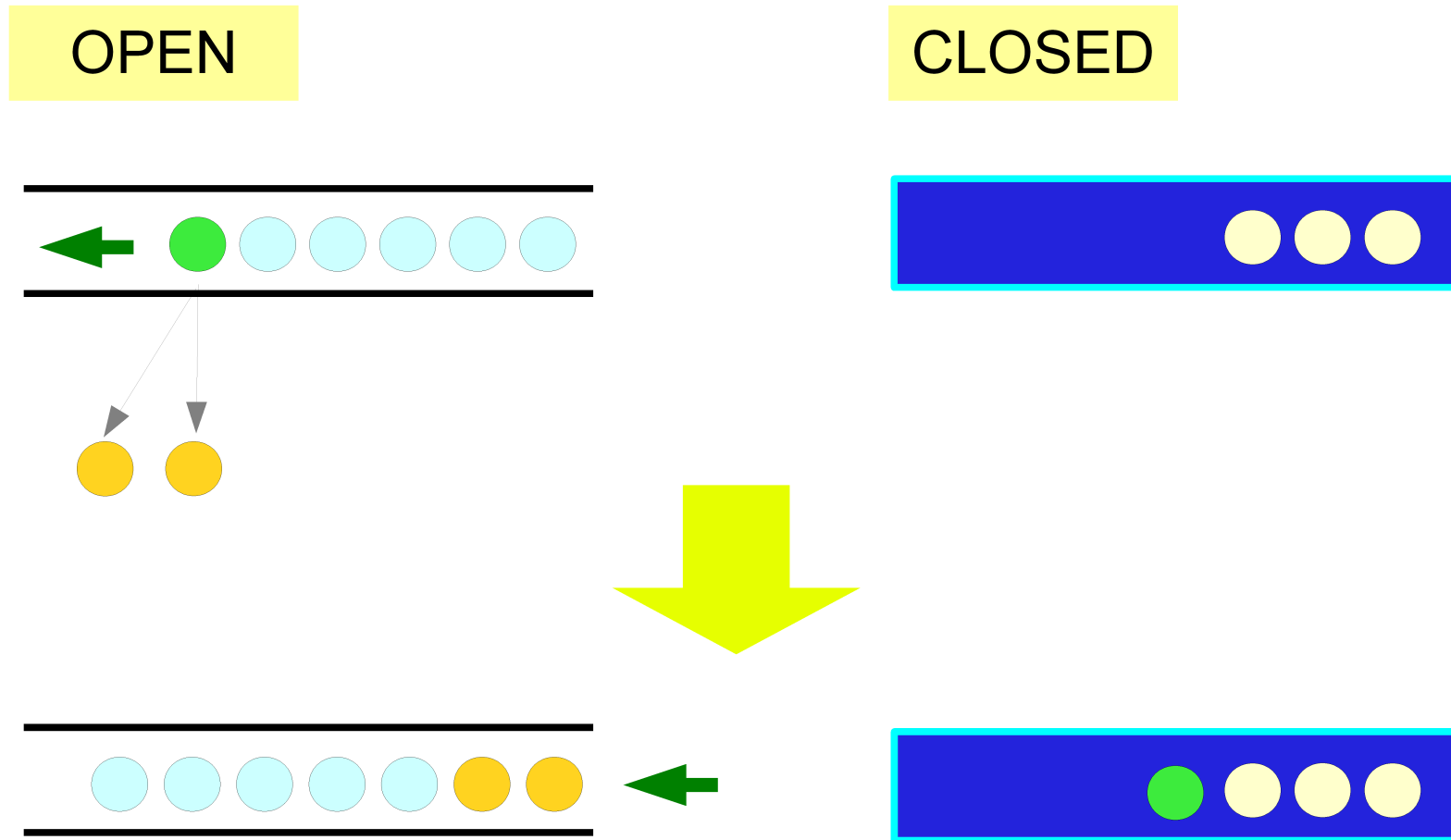
Please send corrections (or suggestions) to youngwlim@hotmail.com.

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DFS (Depth First Search) Algorithm

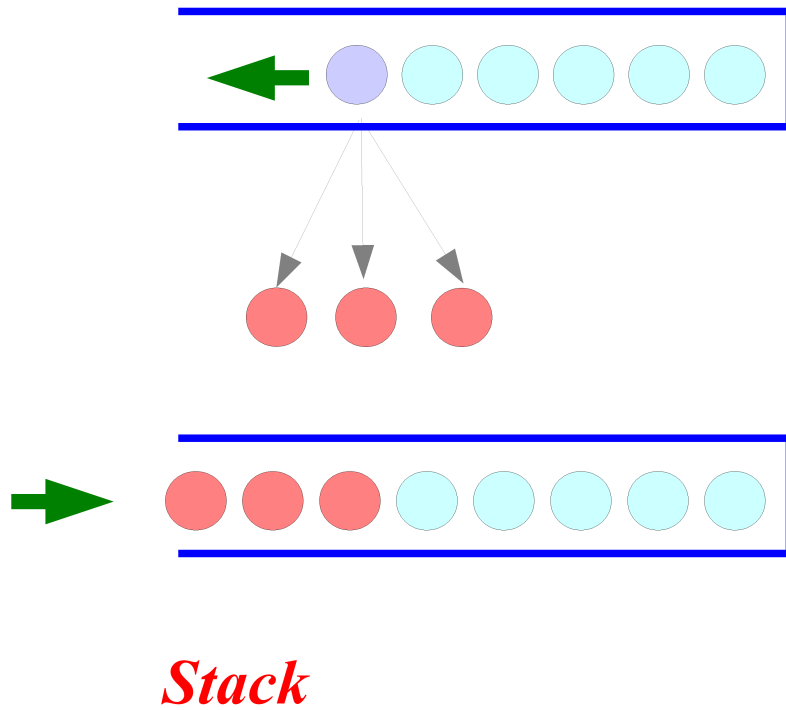


BFS (Breadth First Search) Algorithm

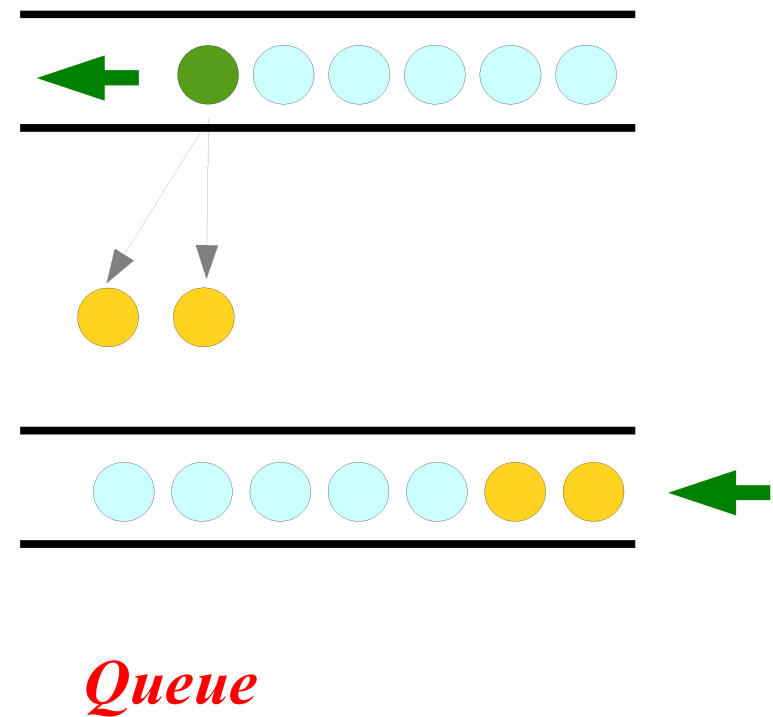


Expand Function

DFS (Depth First Search)

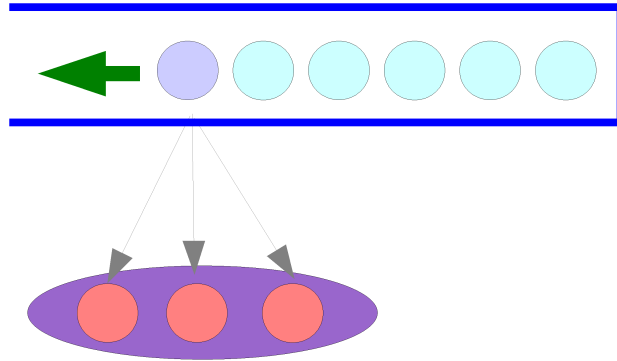


BFS (Breadth First Search)



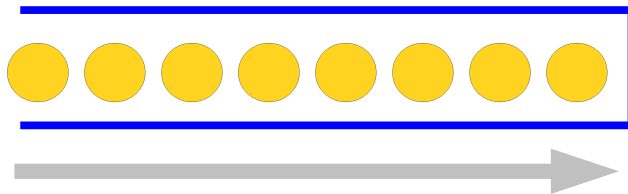
Uniform Cost Search

OPEN



Add new one to OPEN
Replace the old one
with the lower cost

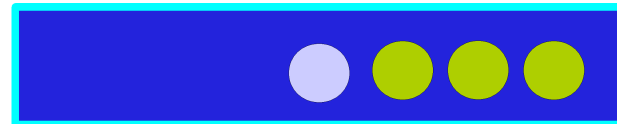
Sort OPEN



CLOSED

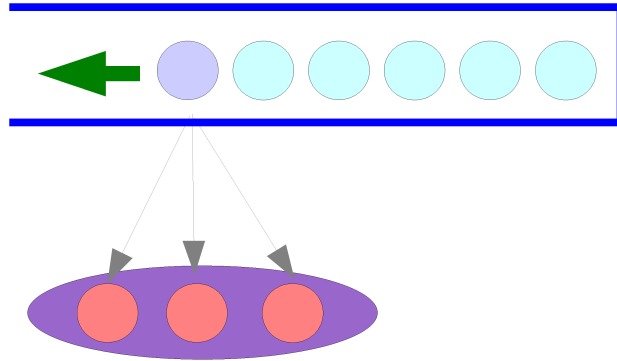


$$g(n_i) = g(n) + C(n, n_i)$$

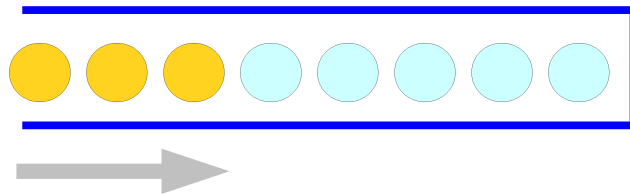


Hill Climbing Search

OPEN



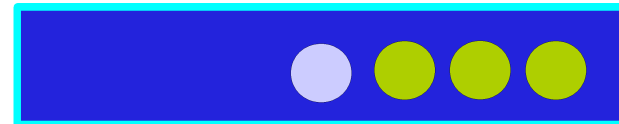
Add
sorted successors
at the front of OPEN



CLOSED

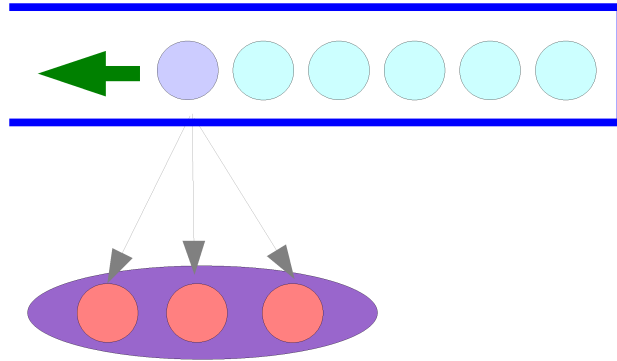


$\hat{h}(n_i)$

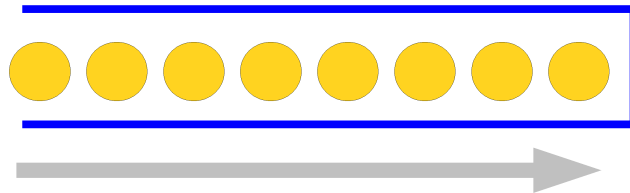


Best First Search

OPEN



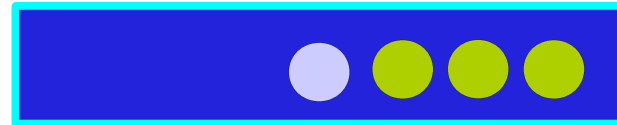
Add to OPEN
Sort OPEN



CLOSED

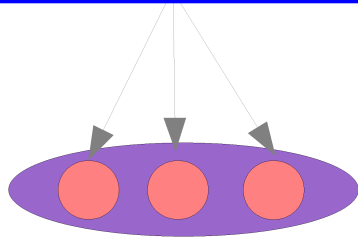
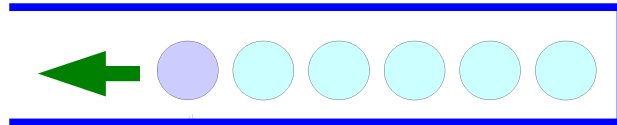


$\hat{h}(n_i)$



A* Algorithm

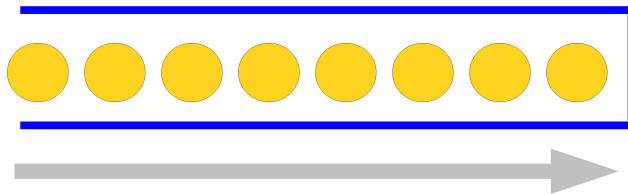
OPEN



$$f(n) = g(n) + h(n)$$

Add new one to OPEN
Replace the old one
with the lower cost

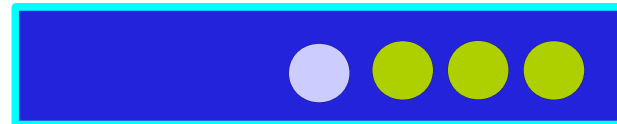
Sort OPEN



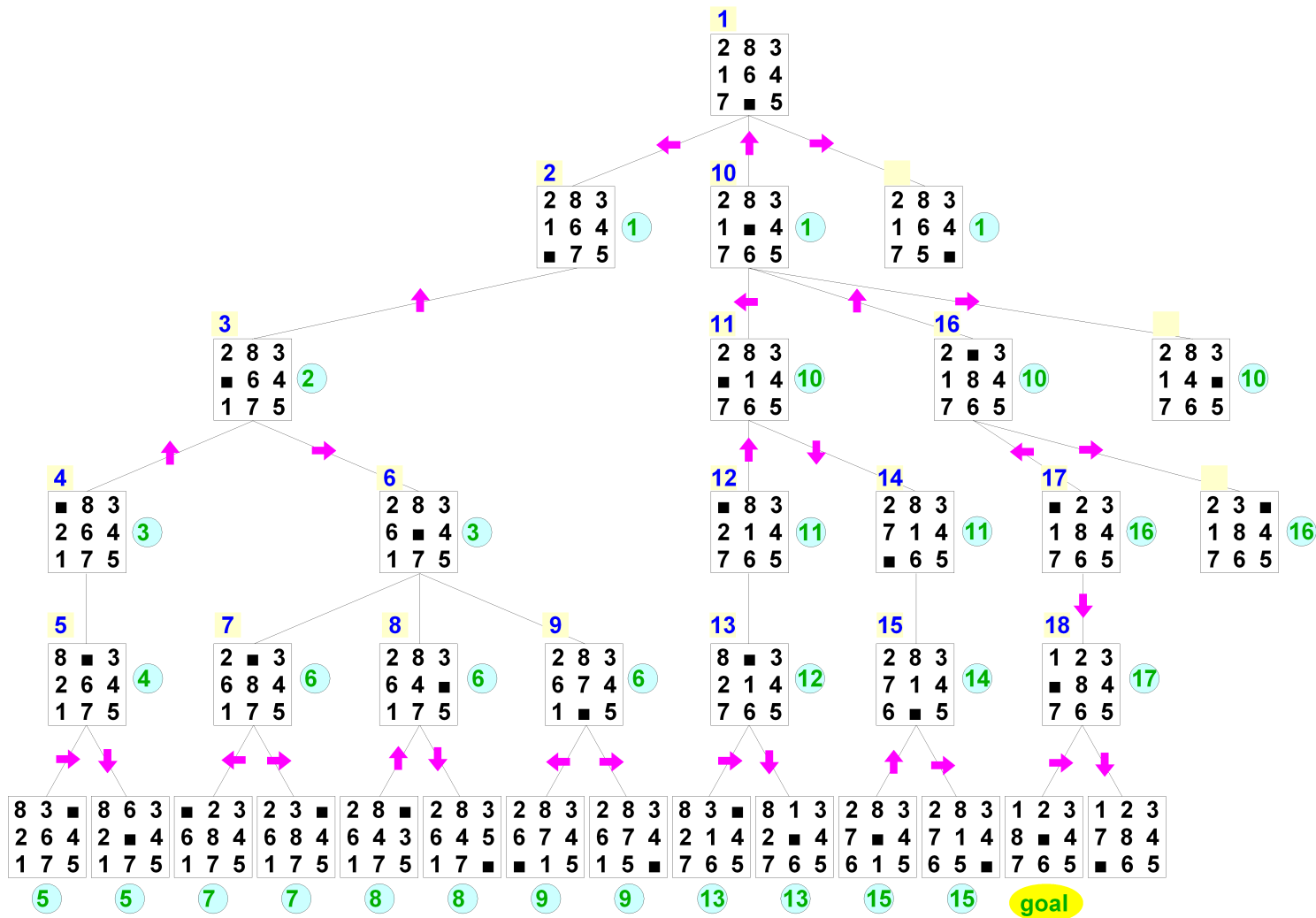
CLOSED



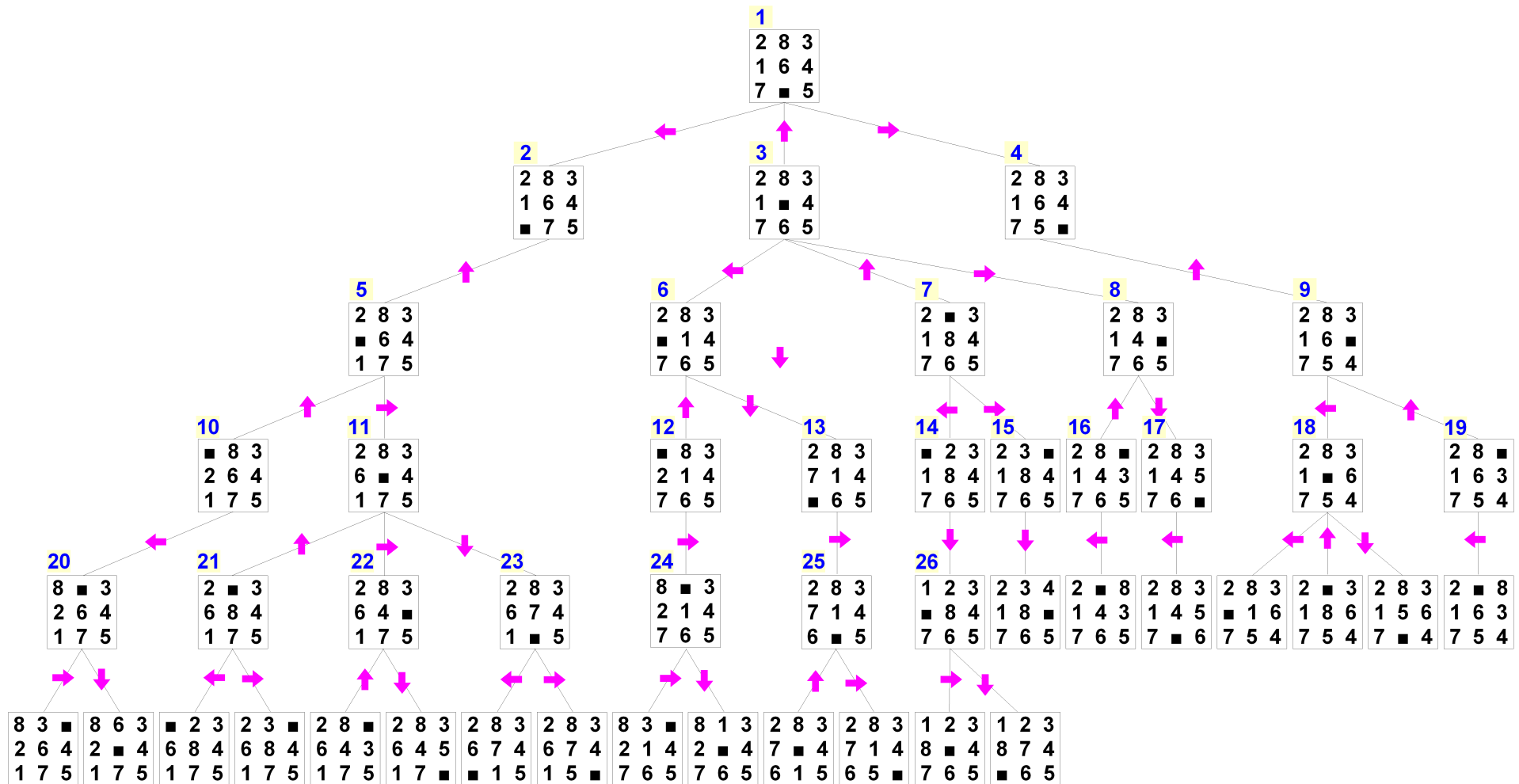
Replace the old one
with the lower cost



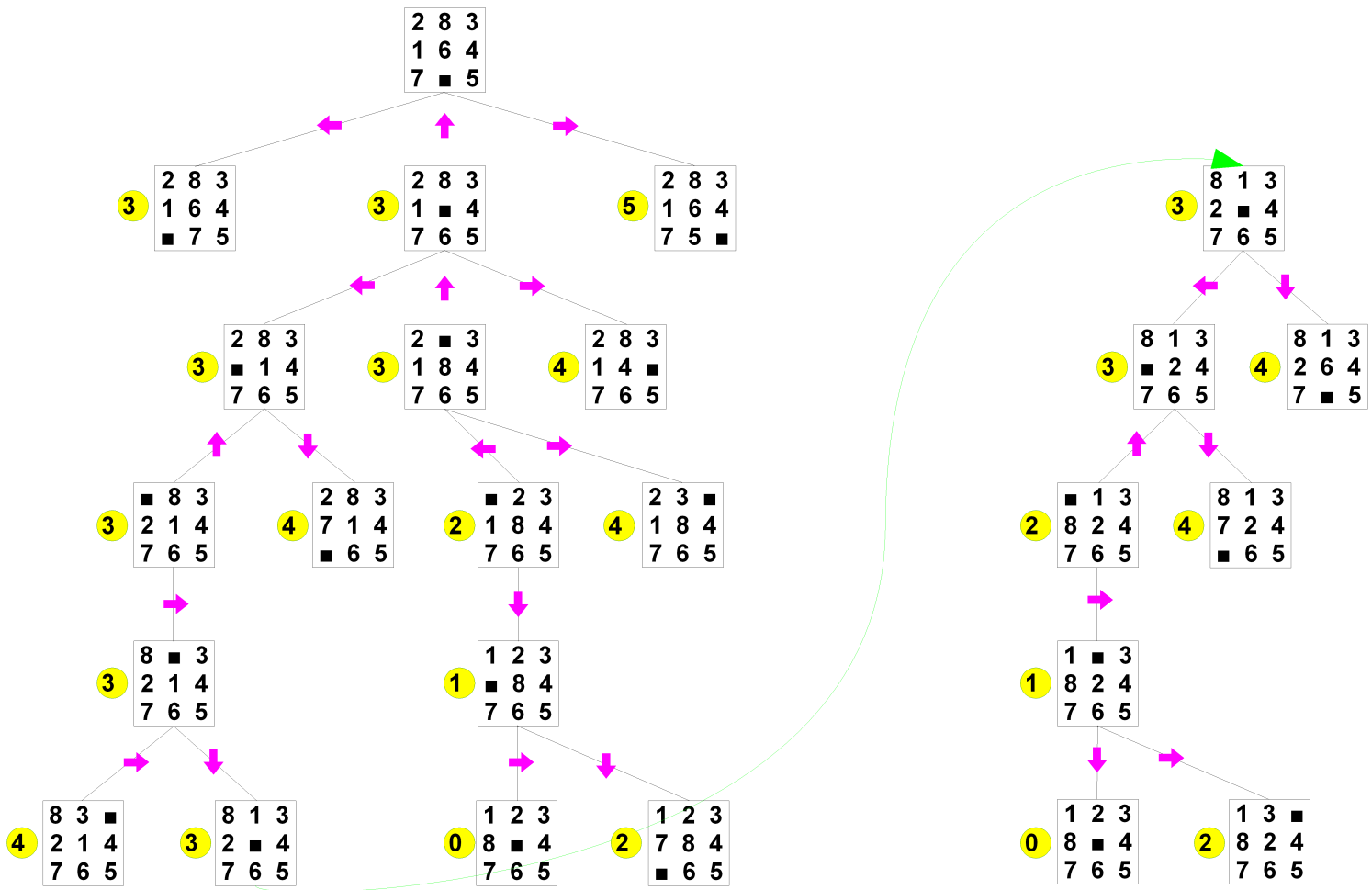
Depth First Search (DFS)



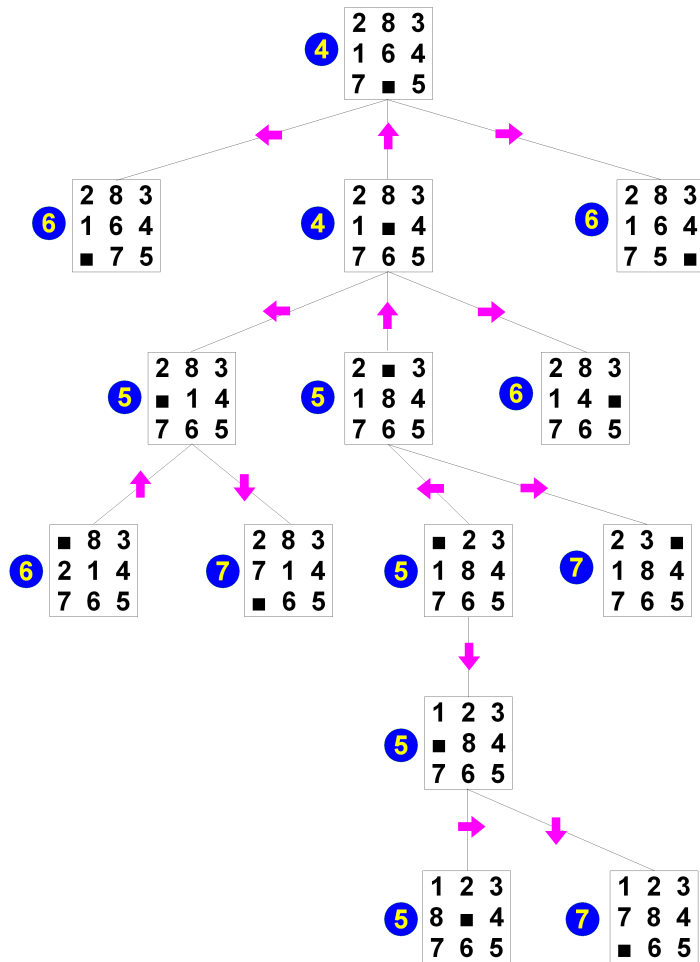
Breadth First Search (BFS)



Hill Climbing



A* Algorithm



References

- [1] <http://en.wikipedia.org/>
- [2] 인공지능개론, 이광형, 조충호, 홍릉과학출판사, 2000