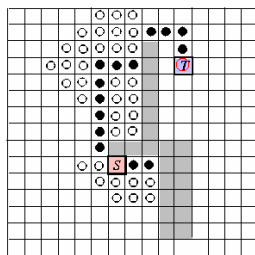


Soukup's Algorithm

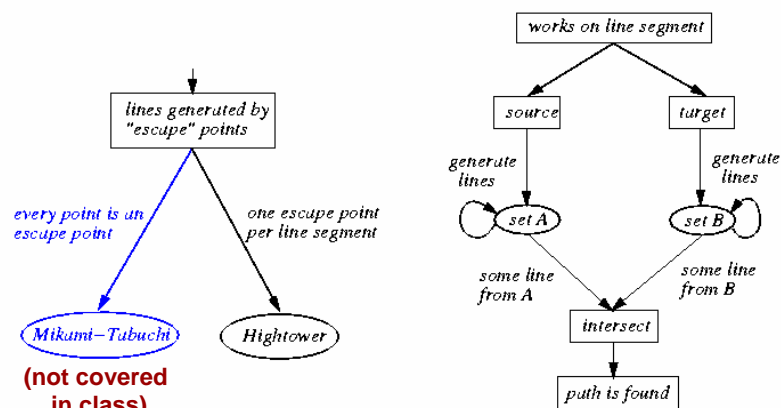
- Soukup, "Fast maze router," DAC-78.
- Combined breadth-first and depth-first search.
 - Depth-first (**line**) search is first directed toward target T until an obstacle or T is reached.
 - Breadth-first (Lee-type) search is used to "bubble" around an obstacle if an obstacle is reached.
- Time and space complexities: $O(MN)$, but 10--50 times faster than Lee's algorithm.
- Find a path between S and T , but may not be the shortest!



Unit 6

1

Features of Line-Search Algorithms



- Time and space complexities: $O(L)$, where L is the # of line segments generated.

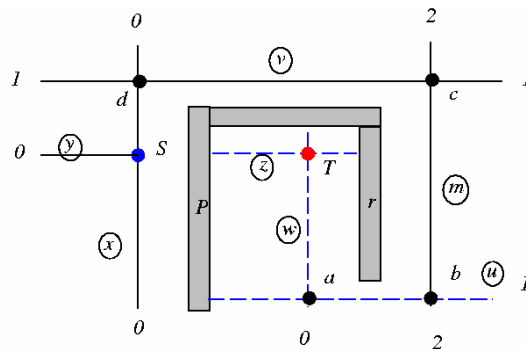
Unit 6

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2

Hightower's Algorithm

- Hightower, "A solution to line-routing problem on the continuous plane," DAC-69.
- A single escape point on each line segment.
- If a line parallels to the blocked cells, the escape point is placed just past the endpoint of the segment.
- Cannot guarantee to find a path between S and T , if exists!



Unit 6

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