Uninformed Search Strategies

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Evaluation of Uninformed Tree-search Strategies

无信息树搜索策略评价

Criterion	Breadth First	Uniform Cost	Depth First	Depth Limited	Iterative Deepening	Bidirectional
Complete	Yes^{a}	Yes^{a,b}	No	No	Yes^{a}	Yes^{a,d}
Time	$O(b^d)$	$O(b^{1+\lfloor C^*/\epsilon \rfloor})$	$O(b^m)$	$O(b^\ell)$	$O(b^d)$	$O(b^{d/2})$
Space	$O(b^d)$	$O(b^{1+\lfloor C^*/\epsilon \rfloor})$	$O(bm)$	$O(b\ell)$	$O(bd)$	$O(b^{d/2})$
Optimal	Yes^{c}	Yes	No	No	Yes^{c}	Yes^{c,d}

Where

- b -- maximum branching factor of the tree
- d -- depth of the shallowest solution
- m -- maximum depth of the tree
- l -- the depth limit

- a -- complete if b is finite
- b -- complete if step costs ϵ for positive
- c -- optimal if step costs are all identical
- d -- if both directions use breadth-first search

Thank you for your attention!