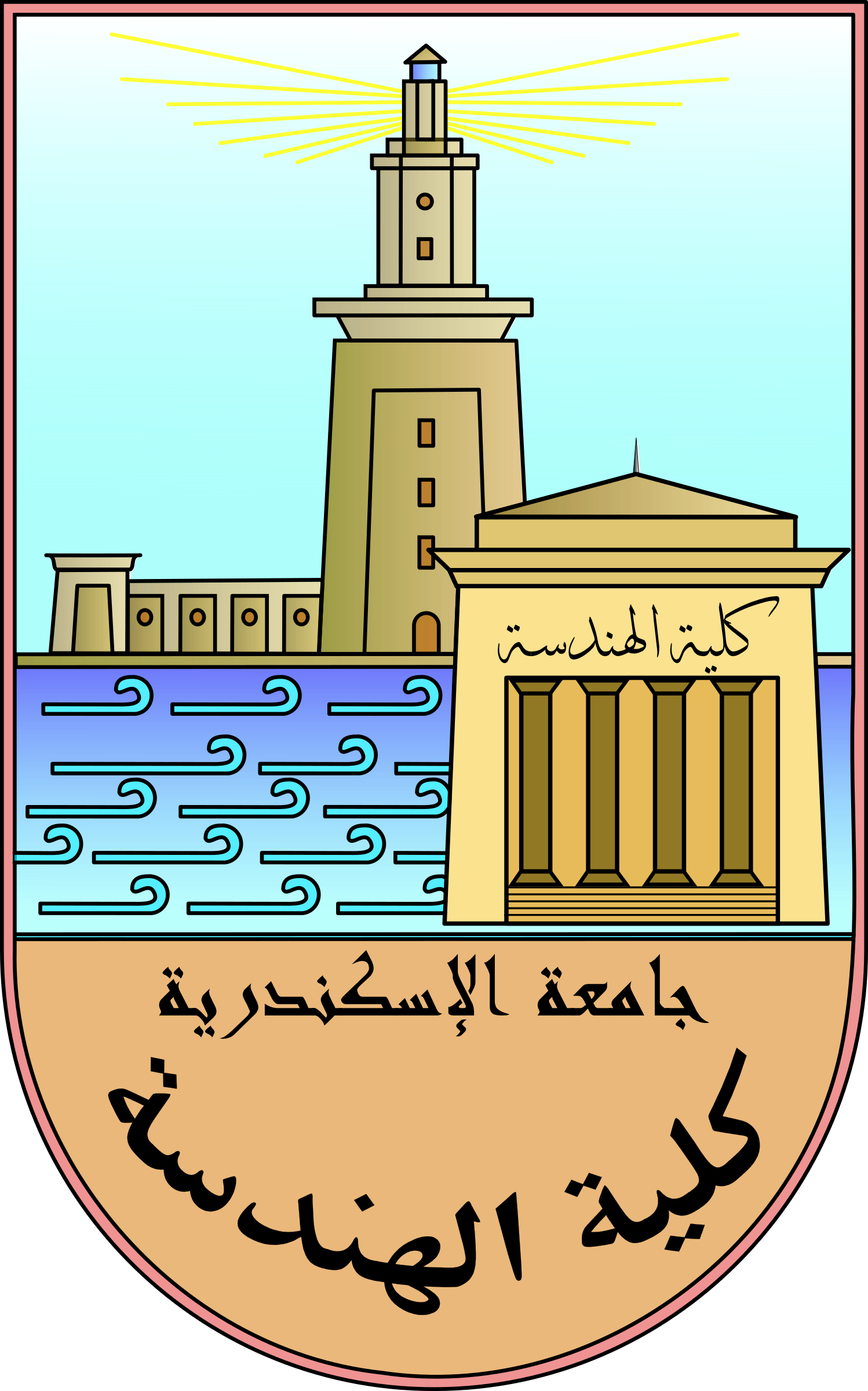
AI:



Lab II

**Kareem Tareq Ibrahim**

**Nagui Moustafa**

**Ahmed Khalil El-Zeiny**

**Abdullah Taman**

|  |  |  |  |
| --- | --- | --- | --- |
| Method | DFS | BFS | A\* |
| Path to Goal | O(m), where m is the max depth of the tree. | O(d) |  |
| Cost of Path | m, as every step costs 1 | d, as every step costs 1 |  |
| Nodes Expanded | O(b\*m), because it is graph search not tree search | O(b^(d+1)) node, where b is the branching factor and d is depth of shallowest goal. |  |
| Search Depth | O(m) | O(d) |  |
| Running time | Because it’s a graph search not tree search, so as written in the reference it’s bounded to the search space, which is O(k!/2), where k is the number of squares of the 8 puzzle. | Because it’s a graph search not tree search, so as written in the reference it’s bounded to the search space, which is O(k!/2), where k is the number of squares of the 8 puzzle. |  |