FACULTY OF COMPUTER SCIENCE AND ENGINEERING

Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Topi

Lab Duration:3 hr. CS351L Intro to AI Lab Marks: 10 Lab No: 4 Instructor: Asim Shah

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| graph = {  'A': [('B', 8), ('D', 3), ('F', 6)],  'B': [('A', 8), ('C', 3), ('D', 2)],  'C': [('B', 3), ('E', 5)],  'D': [('A', 3), ('B', 2), ('C', 1), ('E', 8), ('G', 7)],  'E': [('C', 5), ('D', 8), ('I', 5), ('J', 3)],  'F': [('A', 6), ('G', 1), ('H', 7)],  'G': [('D', 7), ('F', 1), ('I', 1)],  'H': [('F', 7), ('I', 2)],  'I': [('E', 5), ('G', 1), ('H', 2), ('J', 3)],  'J': [('E', 3), ('I', 3)]  } | coordinates = {  'A': (0, 0), 'B': (2, 1), 'C': (4, 1), 'D': (1, -2), 'E': (6, 0), 'F': (-1, -3), 'G': (2, -4), 'H': (0, -6), 'I': (4, -5), 'J': (7, -3) } |

1. Apply greedy best first search and A\* Algorithm (calculates heuristic for both algorithms using f(n) = h(n) and f(n) = g(n) + h(n)).
2. Path reconstruction from start to goal node
3. Display the resulting total cost taken by each algorithm.
4. Animate the process visually through networkx and matplotlib(optional). You can solve this online.