Experiment 2

Foundations of AI

Path traversal using Breadth First Search

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#R version 4.1.0

#RStudio version 1.4.1717

The objective of the experiment is to find the path, traversing all the nodes, from the starting node in the given graph or tree using Breadth First Search

- First using rm(list = ls()) clear the environment before executing the code
- Make a function bfs with arguments graph and start
- graph is an adjacency-matrix-representation of the graph where (x,y) is TRUE if there is an edge between nodes x and y
- Start-> the node to start from.
- The function returns an array containing the path from the given start node till it traverses every node in the graph
- We Use a queue to manage the nodes that have yet to be visited and intialized with the start node
- The first element of the stack is removed and set as the current node
- The current node is set as visited and added to the path
- Now we check all the neighbouring elements of the current node and add them to the queue
- We initialize the graph and starting node outside the function and call the function bfs