

New Chat Clear History

Response Time (Non-RAG): 13.51 seconds

CPU Usage (Non-RAG): 22.30%

Memory Usage (Non-RAG): -0.20%



💋 A chatbot powered by LlamaIndex and Ollama 🦙

- 😑 Hello, I'm your assistant, how can I help you?
- 7. In a Red-Black tree, which property is NOT required for the tree to be valid? a) Every node is either red or black b) The root is black c) All paths from root to NULL have the same number of red nodes d) All leaves (NULL) are considered black
- The answer is (c) All paths from root to NULL have the same number of red nodes.

Here's why:

- **Red-Black Tree Properties:** Red-Black trees are self-balancing binary search trees that maintain balance through specific color (red or black) properties for each node.
- Correct Properties:
 - (a) Every node is either red or black: This is fundamental to the tree's structure.
 - **(b)** The root is black: The root node must always be black.
 - o (d) All leaves (NULL) are considered black: This helps ensure balance.
- Why (c) is incorrect: While Red-Black trees aim for balance, they don't strictly require *all* paths from the root to NULL to have the same number of red nodes. The key property is that there can be at most one red node on any given path from the root to a NULL leaf.

Let me know if you have any other questions about Red-Black trees!

Ask a question: