

Chat Mode

☒ RAG Mode

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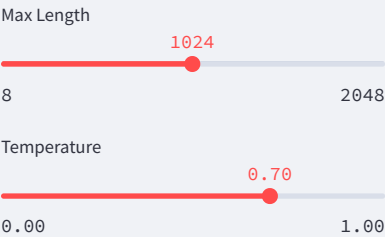
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History_of_computer_an...
327.5KB

Parameters



Actions

New Chat

Clear History

Response Time (RAG): 51.84 seconds

CPU Usage (RAG): 17.60%

Memory Usage (RAG): 0.30%

Local Chatbot

A chatbot powered by LlamaIndex and Ollama

Hello, I'm your assistant, how can I help you?

9. In the context of CPU cache design, which of the following cache mapping policies would result in the highest hit rate but potentially the most expensive implementation? a) Direct mapping b) Set associative mapping c) Fully associative mapping d) Sequential mapping

The answer is **(c) Fully associative mapping**. Here's why:

- **Fully associative mapping** allows any memory block to be placed in any cache location. This means the CPU can always find the most recently accessed data, leading to the highest hit rate.
- **The downside:** Fully associative mapping requires complex hardware to search through all cache locations for a match, making it the most expensive to implement.

Let's look at the other options:

- **Direct mapping:** Each memory block has a fixed, predetermined location in the cache. This is simple and cheap but can lead to lower hit rates if frequently accessed data is spread out.
- **Set associative mapping:** Memory blocks are divided into sets, and each set can hold multiple blocks. This offers a balance between performance and cost.
- **Sequential mapping:** Memory blocks are placed in the cache sequentially based on their address. This is rarely used as it doesn't take advantage of locality of reference well.

Let me know if you have any other questions about cache mapping or computer architecture!

Ask a question: