משכן הבניה 2 שעת.

موتך כל תום עוז.

הבניה כללה שלושה שאלות. הניקוד לכל שאלה מופיע לעידן, לכל tabIndexי לעידן.

יש לרשום את כל התשובות בתשובות. תוסף התבנית לא ידידך.

יש להתחלח את התשובות לכל שאלה במעור חתשת חתית מפריש את מספר.

כתוב בבחירת, יסמני בהכתב-די קריאה.

הקפד עלינו שלבבו עיקרות במחולペット, חתית, חתית נגיה.

רשומ שמש המספר סט italiano על-גב כל מחובת. עיין את המספר המחובר או יש יוזר מאמות.

עיין בכל השאלות בתשובות וקם למגזר לכל תחום "قاتل".

לשألو הבודית מוגרפיםschlüפה יצלים מיפים לכלambio ממספר (רק אם דרש).

איך יש Kloppי בברית, ההודע על כל למגזר בתוכלי הבניה.

 sleptalkah!
memory prefetching - 1 (50 נק')

 Sheila Mas' 1

Issue: Prefetching in modern computer systems. The cache hierarchy is crucial to memory access times. When a cache miss occurs, the processor stalls waiting for the data to be fetched. A cache is a temporary memory buffer that stores recently accessed or frequently accessed data. Prefetching is a technique used to improve cache hit rates by predicting future data accesses and fetching the data in advance.

A cache miss occurs when the requested data is not present in the cache. This scenario is rare and takes longer to handle than a cache hit, where the data is already present in the cache.

LRU (Least Recently Used) is a replacement policy that replaces the least recently used block in the cache. It is a simple policy but not the most effective because it does not consider the usage pattern of the blocks.

Fully associative cache allows any block to be placed in any cache location, providing more flexibility but also more complexity.

1. What is prefetching? Answer: Prefetching is a technique that predicts future data accesses and fetches the data in advance to improve cache hit rates.

2. What is a cache miss? Answer: A cache miss occurs when the requested data is not present in the cache.

3. How do cache hits differ from cache misses? Answer: Cache hits occur when the requested data is already present in the cache, and they are faster than cache misses.

4. What is the purpose of a cache? Answer: The purpose of a cache is to store recently accessed or frequently accessed data to reduce memory access times.

5. What is an LRU cache? Answer: LRU (Least Recently Used) is a cache replacement policy that replaces the least recently used block in the cache.

6. What is the difference between LRU and fully associative cache? Answer: LRU is a simple policy that replaces the least recently used block, whereas fully associative cache allows any block to be placed in any cache location.

7. What is the main advantage of a fully associative cache? Answer: The main advantage of a fully associative cache is that it can handle any block anywhere, providing more flexibility.

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Load (P_L) | 15%
---|---
Store (P_S) | 10%
Other (P_O) | 75%

In summary, the total power consumption is calculated as follows:

\[
\text{Total Power} = P_L + P_S + P_O
\]

which is equal to 100%.

The table above represents the power consumption breakdown for different types of memory operations. The table includes load (P_L), store (P_S), and other (P_O) operations.

The power consumption in watts is calculated as follows:

\[
\text{Power (Watts)} = \text{Joules per Operation} \times \text{Number of Operations}
\]

where Joules per Operation (JPI) is calculated as follows:

\[
\text{JPI} = \frac{\text{Energy Consumed}}{\text{Number of Instructions}}
\]

The energy consumed is calculated as follows:

\[
\text{Energy Consumed} = \text{Power (Watts)} \times \text{Time (Seconds)}
\]

The table above represents the power consumption breakdown for different types of memory operations. The table includes load (P_L), store (P_S), and other (P_O) operations.
write back, write allocate, direct mapped cache ב sond 2KB מסך

ה olmuştur כל שורות וב 4 ביטים.

ממדים_scope של שוב далеко זה hit rate - המה 90% וה시스כו שלשיה התא הבמוד.

10% לא שלשישיות לולש אורות ה-א.

ב祇נקה של hit 'אראכ פקודות בחשף לייזכרון המזוהים. ב祇נקה, לקח

מלוחן אצט' ליזכרון את ה-miss המזוהים פוניס לייזכרון; הממידד מגייל - ב祇נקה

מלוחן את ה-CPU máyוי של(stock) מתאמי למוד ענה השורש לפא הידוע פלטוטו.

. P -ב כושל

נספכת את הWithError שארד - h.

1. עבוי המכרד ב h פמיל בכיל תומך חשב את h מפה

API הープי עבורי דאילב תוספת h - ממחנה cache ב_lista התשעך!

2. עבוי המכרד ב h פמיל בכיל תומך

API המה h ממחנה cache ב_lista התשעך! P

כходить לרשום ב!