

39 Lecture - CS501

Important Mcqs

1. **What is the purpose of a cache in a computer system?**

- A) To store infrequently accessed data
- B) To provide additional storage for the main memory
- C) To act as a buffer between the processor and main memory
- D) To speed up the processing of instructions

Answer: C

What principle does the cache operate on?

- A) Temporal and spatial locality
- B) Random access
- C) Sequential access
- D) LRU (Least Recently Used) replacement

Answer: A

Which of the following is a characteristic of a good cache design?

- A) Large capacity
- B) High access time
- C) High hit rate
- D) Low associativity

Answer: C

What is the purpose of a cache hit?

- A) To retrieve data from the main memory
- B) To store data in the main memory
- C) To retrieve data from the cache
- D) To store data in the cache

Answer: C

Which of the following is a disadvantage of a direct-mapped cache?

- A) Low hit rate
- B) High associativity
- C) High complexity
- D) Large size

Answer: A

What is the difference between a write-through and write-back cache?

- A) Write-through caches are slower than write-back caches
- B) Write-back caches are slower than write-through caches
- C) Write-through caches write data to both the cache and main memory, while write-back caches only write to the cache until it is full
- D) Write-back caches write data to both the cache and main memory, while write-through caches only write to the cache until it is full

Answer: C

Which cache replacement algorithm evicts the least recently used cache line?

- A) First-In-First-Out (FIFO)

- B) Least Frequently Used (LFU)
- C) Least Recently Used (LRU)
- D) Random

Answer: C

What is cache coherence?

- A) The process of updating the cache when the main memory is modified
- B) The process of updating the main memory when the cache is modified
- C) The process of ensuring that all caches have the same view of shared memory
- D) The process of ensuring that all processors have the same view of shared memory

Answer: C

Which of the following is an example of a cache miss?

- A) When data is successfully retrieved from the cache
- B) When data is not found in the cache and must be retrieved from main memory
- C) When data is overwritten in the cache
- D) When data is stored in the cache

Answer: B

What is the difference between a fully associative and set-associative cache?

- A) Fully associative caches have a higher hit rate than set-associative caches
- B) Set-associative caches have a higher hit rate than fully associative caches
- C) Fully associative caches are larger than set-associative caches
- D) Set-associative caches are larger than fully associative caches

Answer: B