معهد مصر العالي للتجارة و الحاسبات بالمنصورة

Computer Organization and Assembly File

Mahmoud Ahmed Elwasef
Section 7
Computer Science

Questions:

1. **List the access method on Memory?**

2. **Write notes about "Word" on Memory?**

3. **Write notes about Memory hierarchy?**

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[1]

1. Sequential

2. Direct

3. Random

4. Associative

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[2]

(Word): The natural unit of organization of memory. the size of word equals the number of bits used to represent an integer and the instruction length.

[3]

we decided to make Memory hierarchy to be easy to get our needs. So, we find in the top of Memory hierarchy

in board memory
that contains:
- Registers
- Cache
- Main memory

Out board memory
that contains:
- Magnetic disk

offline storage
that contains:
- Magnetic tape

we get that finally that:

- Increasing access time

- Increasing capacity

- Decreasing frequency of access of the memory by processor

- Decreasing cost per bit

Computer Memory Hierarchy

small size small capacity	power on immediate term	processor registers very fast, very expensive
small size small capacity	power on very short term	processor cache very fast, very expensive
medium size medium capacity	power off short term	random access memory fast, affordable
small size large capacity	power off mid term	flash / USB memory slower, cheap
large size very large capacity	power off long term	hard drives slow, very cheap
large size very large capacity		tape backup very slow, affordable