



Assignment-12

Friday

2AN) Prefetching -

Prefetching is one such mechanism: it attempts to predict the memory addresses a program will acess, and issue memory re-quests to them before the program flow needs the data. Aggressive steam prefetchers can significantly reduce the effective memory access latency of many workloads.

· Prefetching mechanisms can retrieve both data and

instructions.

· The number of clock cycles can be reduced by up to 30% with prefetching.

· Prefetching can be utilized in the areas of hardware,

software and compilers.

· Prefetching useless data wastes resources

Memory bandwidth

· Cache or prefetch buffer space

· Energy consumption

· These could all be utilized by demand request or

more accurate prefetch requests.

Accurate prediction of addresses to prefetch is important prefetch accuracy = used prefetches / sent prefetches.

Educational Publishers

**DECEMBER - 2020** S 10 4 12 26

## Saturday

$$= 1 + \frac{5}{100} \left( 10 + \frac{50}{100} \times 100 \right)$$

$$= \frac{1}{0.8 + 0.3(4-1)}$$

$$= \frac{1}{0.8} + 0.9 = \frac{5}{4} + 0.9 = 2.15$$

TPC = 
$$\frac{1}{2.15} = 0.465$$
 ASIA BOOK HOUSE

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17