VIRTUAL MEMORY MANAGEMENT

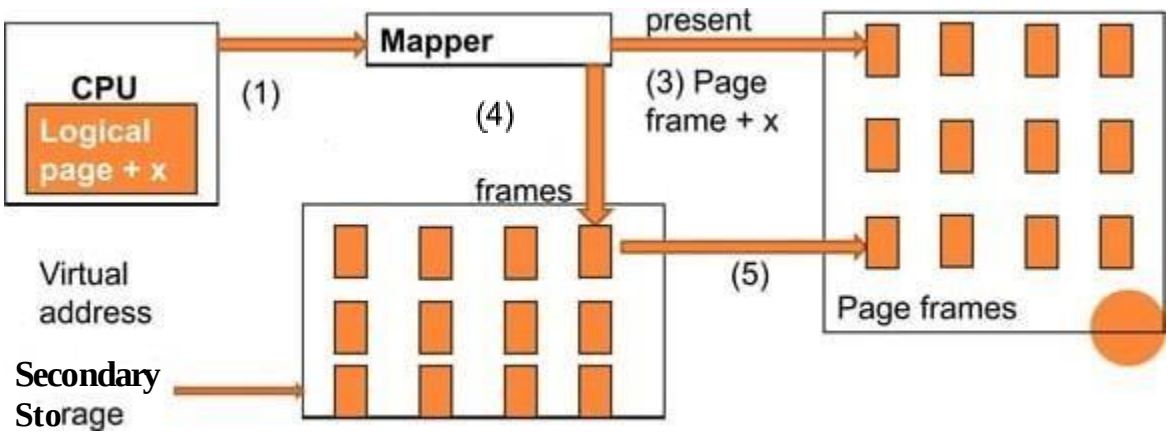
S Charan Kumar Reddy (192225093)
K J Kamesh(192225096)

CONTENTS

- virtual memory
- Needs of virtual memory
- Importance of virtual memory
- Advantage of virtual memory
- Disadvantages of virtual memory
- Address space & memory space
- Page replacement algorithms
- Conclusion

VIRTUAL MEMORY

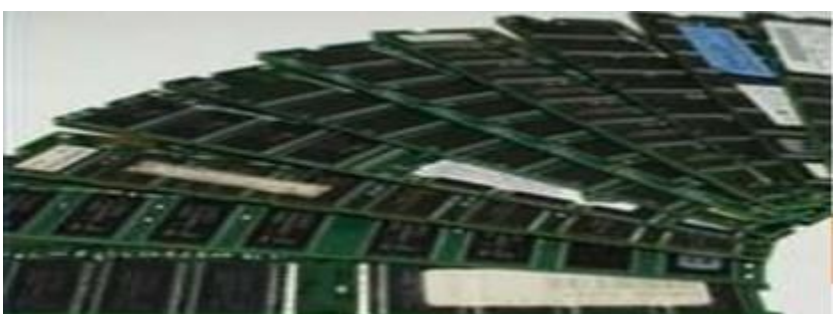
- Virtual memory is a common pan of operating system on desktop computers.
- The term virtual memory refers to something which appears to be present but actually it is not.
- The virtual memory technique allows users to use more memory for a program than the real memory of a computer.



NEED OF VI RTUAL MEMORY

- Virtual memory is a imaginary memory which we are assuming. If we have a material that exceed your memory at that time we need to use the concept of virtual

- virtual memory is temporary memory which is used along with the ram of the system.



IMPORTANCE OF VIRTUAL MEMORY

- When yourcomputer urns out of physical memory it writes what it needs to remember to the harddisc in a swap file as virtual memory.
- If a computer running Windows requires more memory/RAM then there is installed in the system to run a program, etc, it uses a small section of the hard drive for this purpose

ADDRESS SPACE AND MEMORY SPACE

- Virtual memory is the address used by the programmer and the set of such addresses is called address space.
- An address in main memory is called a physical address.
- The set of such locations in main memory is called the memory space.
- Thus the memory space consist of the actual main memory locations directly addressable for processing.

PAGE REPLACEMENT ARGORITHMS

- In a computer operating system that uses paging for virtual memory management, page replacement algorithm decide which memory pages to page out. When a page of memory need to be allocated.
- FIFO (first in first out)
- LRU (Least Recently used)
- OPT (Optimal)

ADVANTAGES OF VIRTUAL MEMORY

- Allows processes whoseaggregate memory requirement is greater than the amount of physical memory, as infrequently used pages can reside on the disk.
- Virtual memory allows speed gain when only a particular segment of the program is requiredfor the execution of the program.
- This concept is very helpful in implementing multiprogramming environment.

DISADVANTAGES OF VIRTUAL MEMORY

- Applications run slower if the system is using virtual
- It Takes more time to switch between applications.
- Less hard drive space for your use.
- It reduces system stability.

CONCLUSION:

In conclusion, the capstone project on virtual memory management has provided invaluable insights into the critical role virtual memory plays in modern computing systems. Through thorough research, analysis, and implementation, key concepts such as paging, segmentation, memory allocation strategies, and performance optimization have been explored and applied.


Thank
You