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Q1) In an OS that uses paging for memory management, a page replacement algorithm is needed to decide which page needs to be replaced when a new page comes in.

1. FIFO
2. Optimal Page Replacement
3. Least Recently Used
4. Most Recently Used

Q2)

1. The basic difference between Logical and physical address is that Logical address is generated by CPU in perspective of a program whereas the physical address is a location that exists in the memory unit.
2. Logical Address Space is the set of all logical addresses generated by CPU for a program whereas the set of all physical address mapped to corresponding logical addresses is called Physical Address Space.
3. The logical address does not exist physically in the memory whereas physical address is a location in the memory that can be accessed physically.
4. Identical logical addresses are generated by Compile-time and Load time address binding methods whereas they differs from each other in run-time address binding method. Please refer this for details.
5. The logical address is generated by the CPU while the program is running whereas the physical address is computed by the Memory Management Unit (MMU).

Q3)

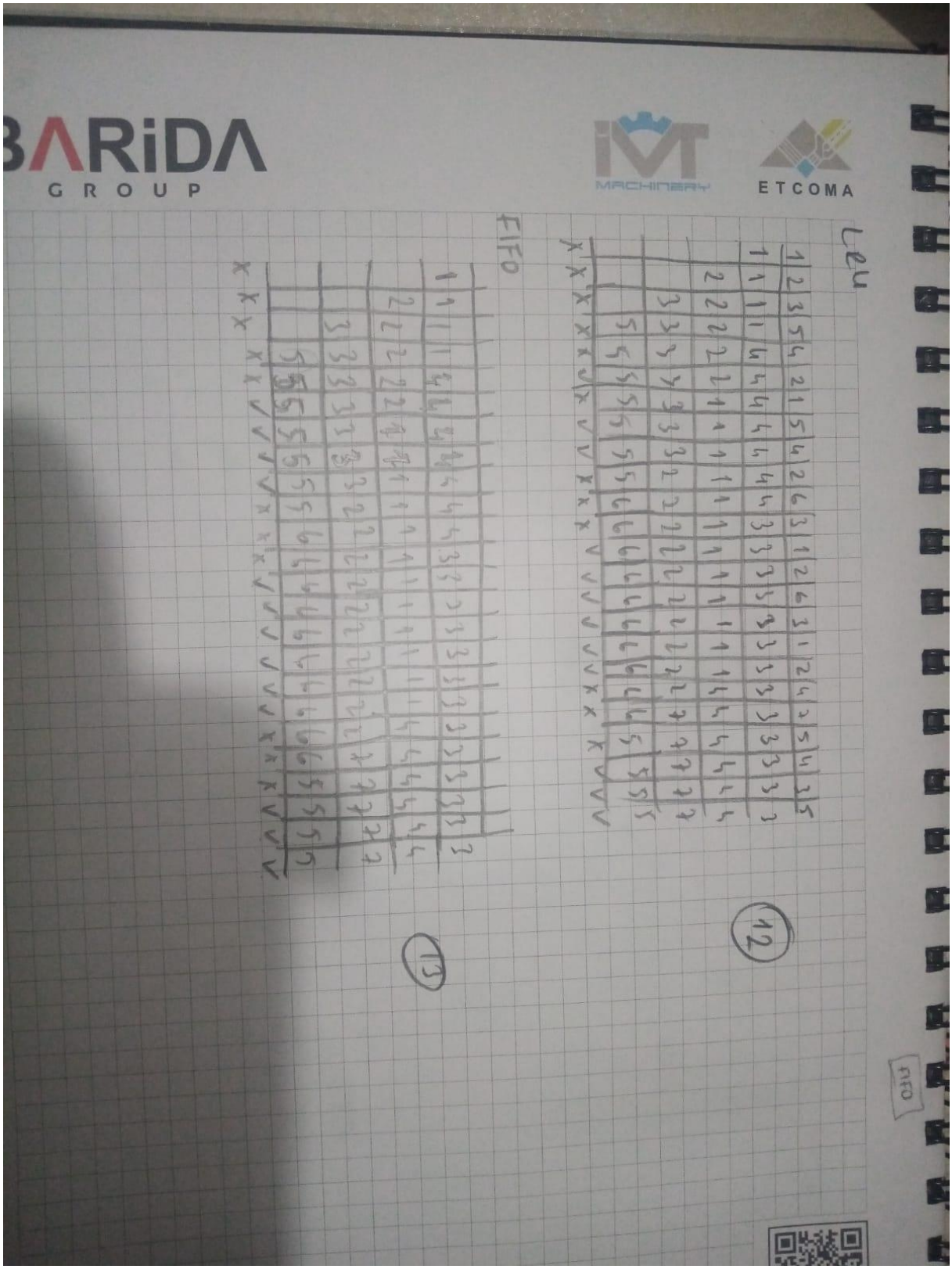
- At the time of working on a computer system two types of process execute. First type of process are user process and second types of process are system process.
- In Memory, each user process has its own address space. So Operating system must be protected from user processes, and each user address space should be protected from another user process.
- First, there is a need to determine the legal address that a process may access and to ensure that process may access only these legal addresses.
- Protection can be provided by using two registers known as the Base Register and Limit Register.
- The base register holds the smallest legal, physical memory address.
- Limit register specifies the size of the range.

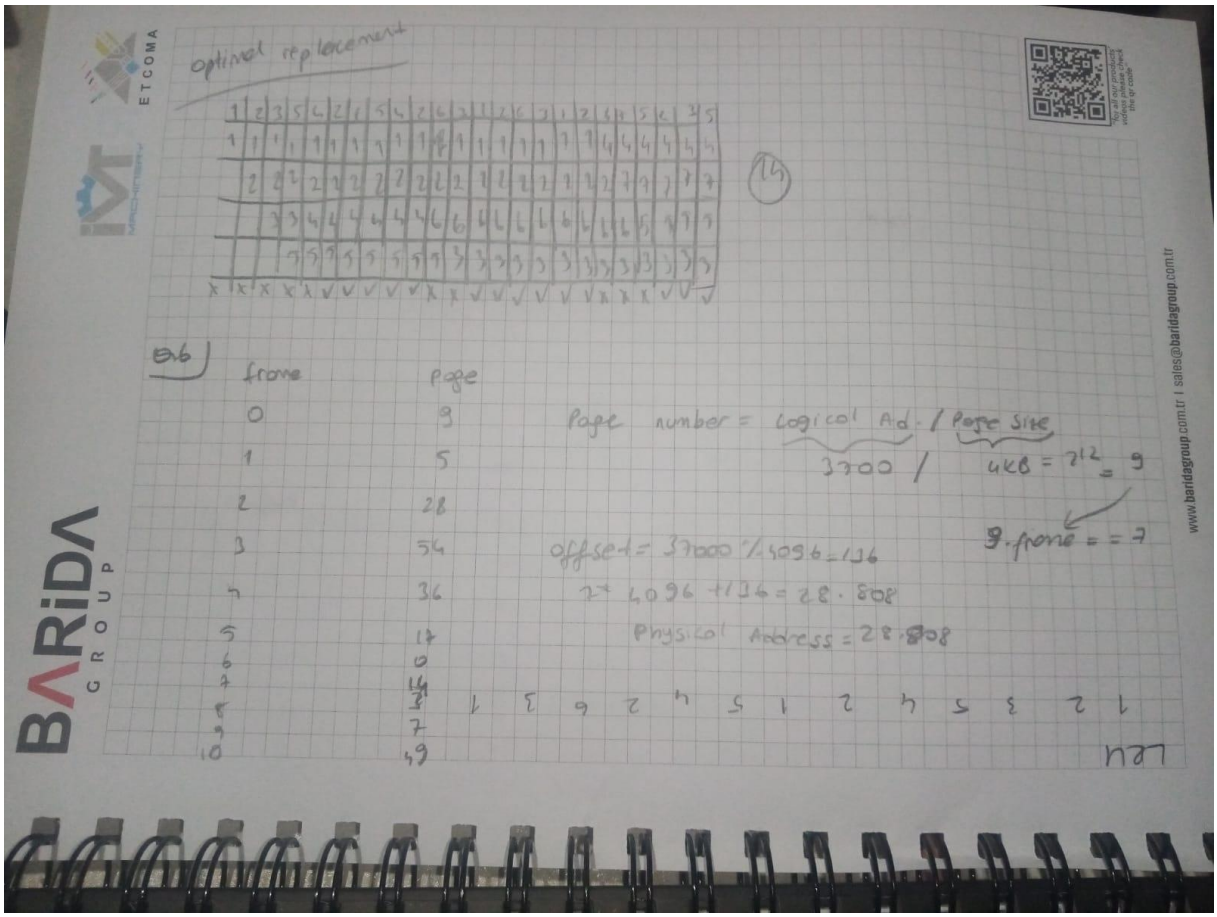
Q4)

Bélády's anomaly is the name given to the phenomenon where increasing the number of page frames results in an increase in the number of page faults for a given memory access pattern.

In FIFO, LRU, optimal page replacement algorithms, it ocuurs.

Q5) and Q6)





Q7)

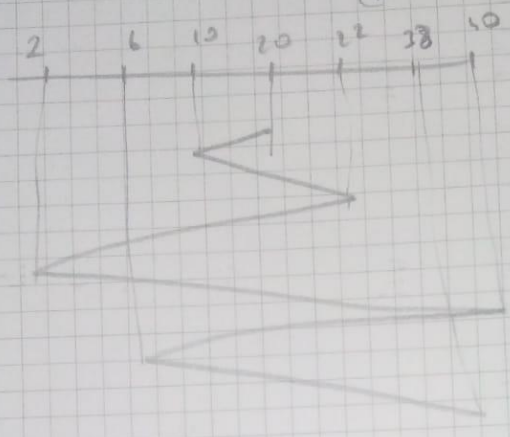
1. Creating and deleting files
2. Creating and deleting directories
3. File manipulation Instructions
4. Mapping to Permanenet Storage
5. Backing Up Files

Q8)

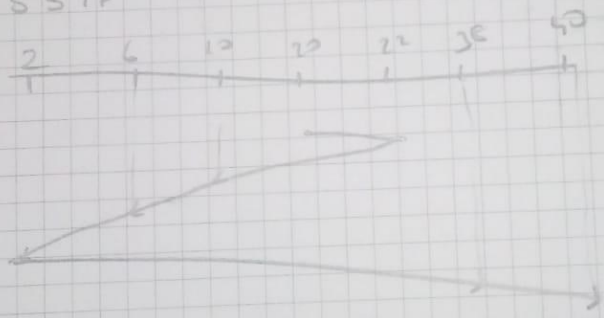
ans/

FCFS

(20-10) + (22-10) + (22-20) + (20-2) + (40-2) + (40-6) + (38-6) = 146

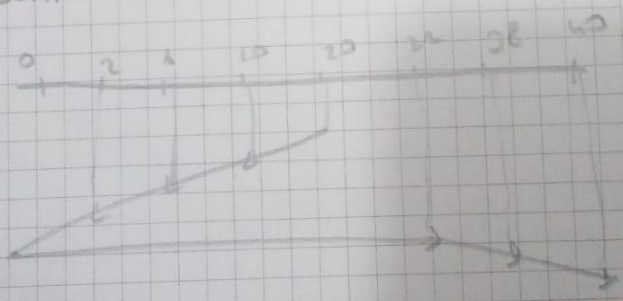


SSTF



(20-20) + (22-10) + (10-6) + (6-2) + (38-2) + (40-38) = 60

SCAN



(20-10) + (10-6) + (6-2) + (2-0) + (22-0) + (38-22) + (40-38) = 60