Sub – OS ( SE - C1/C2/C3) Assignment No-6

**Write a program to simulate Paging**

Input

1. Size of a process(in KB)
2. Page Size(in bytes)
3. Size of physical memory.(in MB)
4. Page table for the process (Page no. Frame no. Valid Bit)

Output

1. Total no. of frames in memory.
2. Number of entries in page table.
3. No. of bits in physical address .
4. No. of bits in logical address along with its distribution.

Also take as input a logical address in binary form and display if the page corresponding to the logical address is present in the memory or not

Eg:

Input :

Size of process -8 (assuming in KB)

Size of page -32 ( assuming in bytes)

Size of main memory - 2 (assuming in MB)

Output :

1. Total no. of frames in memory – 2^16 frames
2. Number of entries in page table -256(=total no. of pages in the process)
3. No. of bits in physical address along with its distribution.

Size of MM = (2^21)bytes = 21 bits in MM address

1. No. of bits in logical address along with its distribution.

Size of process = 8 KB or (2^13) bytes - 13 bits in logical address

Distribution -8 bits (page no field ) and 5 bits (offset)

Page Table

| Page No | Frame No | Valid |
| --- | --- | --- |
| 0 | - | 0 |
| 1 | 4 | 1 |
| 2 | 6 | 1 |
| -- | -- | -- |
| -- | -- | -- |
| 255 | - | 0 |

Display if it’s a page hit or page fault

Eg 1 : Logical address (13 bits )------- 00000000 00011

Output – Page fault

Eg 2 : Logical address (13 bits)------- 00000001 00010

Output – Page hit