**Assignment-3**

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**Computation\_intensive.c**

Q. How does MAX\_NUM value affect the page allocation table?

A. By the increasing the Max\_Num size, the need for increasing the virtual memory address space arises as the process requires more space.

This will result in more no. of pages in the page table as the memory space of the process is broken. The memory is allocated as necessary or dynamically.

**Memory\_intensive.c**

Q. What is the difference between first and second for loop?

A. The first for loop fills the matrix column-wise whereas the second for loop fills row-wise. The first for loop fills the values of each matrix position as 0 but the second one fills up with 5. The memory requirement for both the matrix is the same.

Q. How many pages are allocated for the matrix?

A. The virtual memory size of matrix= 100\*512\*8 byte

a = 409,600 byte

Typical size of a page = b= 4 Kbyte

So, total no. of pages requires = 100 pages = a/b

Q. Which loop performs better?

A. Both the loops will give complexity of O(n2). But the memory access is different for each compiler or language that is being used. In c, a row-wise access is better. So, first loop will perform better.

Q. What happens if the no. of rows is increased?

A. With a greater number of rows, more virtual memory will be required for the program. This will increase the no. of pages in the page table, as it can be seen from the computation above. This will need more swap-in and swap-out of the disk and RAM.

Q. What happens if the no. if columns is increased?

A. Similar as rows, the increase will lead to more no. of page allocations and hence more swap-in and swap-out.