Indian Institute of Information Technology, Vadodara
International Campus Diu
Operating Systems Lab
(CS363)
Assignment 7

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1. Write a program that will managing a contiguous region of memory of size MAX where addresses may range from 0 ... MAX-1. Your program must simulate dynamic memory allocation by continuously allocating and freeing different-sized blocks of memory using malloc and free (or new and delete in C++). Consider the following points:

   - Your program will be passed an initial amount of memory at startup as command line argument.

   - Introduce fragmentation by creating allocations of varying sizes and freeing them in a non-sequential order.

   - Implement a function to report total memory allocated, memory freed, and fragmentation level.

   - Visualize fragmentation by printing a simplified memory map showing used and free blocks.

   - Implement the above functionalities as menu driven program where user has the option to allocate memory, delete a particular block of memory, see the memory in use.

Best wishes