Asst 2 Documentation:

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The phisical memory is size of 8mb and swap memory of 16 mb.

The first 500 pages of the phisical memory is used as OS space, while the last four pages’ space of memory is used as share memory for shalloc(). A page table is used to bookkeep all the pages in the memory. page table is a array of struct consist of an integer for thread id, an integer for the number of page for a thread, and an integer as allocated/not allocate parameter. Each block within each page consist of a block header. headers are linkedlist of an integer for size, an integer as allocated/not allocate parameter, and the pointer to the next header.

Init\_Block() initialize the header data for the new block.

set\_block\_data() set the header of an block to reduce the size of remaining block and reset the allocate integer.

The new\_empty\_page() return the first unused page in the memory by looking up the pagetable, and update its pagetable to make it belongs to the current thread. Init\_MEM() initialize the pagetable and all the pointers to locations in memory, as well as memalign() the memory.

request\_first\_page() return the first page of current thread. If the first page of current thread is page 0, return page 0. if the current thread’s page one is not page 0, swap page one with page 0 and return page 0. if there is not page one, then swap page 0 with the first empty page and return page 0.

handler(): If page-fault, look up space it swap page and swap the current thread’s page with free pages in memory.

myallocate(): with the page 0 containing thread’s first page. if there is block large enough for requested space, reset the block header and return. If there is not enough space left in page, allocate a freepage, initialize it’s pagetable to the current thread, and link the block header of previous page to the first block of the first block’s header. If the memory are not enough for new page, return NULL.

mydeallocate(): Reset the block’s header’s allocate integer into 1 to free the block.