Assignment 6 - Report

Question 9.1

The question asks us to print all the free memory blocks available. We have written a function getmemList(), Which accesses the memblock block structure maintained by XINU and traverse the entire linked list and prints the mLength field.

we have made arrangements to show this behavior using a special command in XINU.

Question 9.4

We have created new low level memory functions getmemBest() and getstkBest(), These perform all the task performed by the default memory management functions but the memBlock() structure is traversed to find the best fit memory block rather than first fit for getmem and last fit for getstk.

Comparison based on memory blocks assigned.

In default memory allocation the getmem start allocating from the highest memory block and getstk starts allocating from the lowest memory block, converging towards each other as the memory is consumed.

As stated earlier, the newly implemented memory management functions find the best fit in both the cases (getmem and getstk). They traverse the memblock structure in entirety, if they have to, to find the best (closest) matching memory block to meet the memory requirement of the calling process.

The demo will include a demonstration to show the behavior of all the functions implemented using a special command, We have even replicated a copy of create system call to show the new implementation of getstk.

Question 9.7

Here we wrote a small code snippet in Kill() system call. Because after researching for a while, we noticed that, during every process exit an implicit function Exit() is called automatically, which indeed makes a call to Kill() system call. Hence the code to print the actual memory used by a process when compared to max memory allocated should be written in Kill system call.

As stated earlier, we have made arrangements to show this behavior using a special command in XINU.

Contributions

Anuj - Question 9.1, question 9.7, report, demo

Chitesh – Question 9.4, demo