Design-doc

Folder Structure

CS303-2019csb1100-3

|-main\_file.c

|-README.md

|-Design-doc

Overview

The objecting of the program is to observe that in which order algorithms among first-fit, next-fit and best-fit is effective.

And, these algorithms are for dynamic partitioning.

If I talk about implementation then I used an array for memory where the unit index is supposed to be of 10 MBs.

And I have made functions of all the three algorithms over this array.

For time calculating purpose I have used struct timeval from sys/time.h library.

And, two function was to for random process generation purpose and for reducing the duration of process as time passes.

During allocation I have assigned the duration of the allocated process to the array. And I have taken one more array to store the time of request of process so that when the process gets allocation in the memory time interval can be find out. For average turnaround time, I have added those calculated intervals and also calculated no. of processes executed. And, for memory utilisation percentage I have done the same. Taken sum of memory occupied every second and taken average of it as well.

Taking about observation part, according to my table I have observed that first-fit algorithm is taking minimum average turnaround time overall, then next-fit is taking little more than that. And best-fit takes much greater time than both.

Conclusion:

I would prefer first-fit algorithm for dynamic partitioning.

for time-complexity I can say first-fit < next-fit < best-fit

for preference: first-fit > next-fit > best-fit

For getting steady state results and entering the data in table I ran my code for 10 minutes and for testing purpose(examples) which I pasted in this readme I ran this for 5 minutes.