

Discussion:

o Explain your choice for the data structure you used for D in this project

Answer:

I used ArrayList with the name D to store the data, because

1. ArrayList is dynamic in length, which provides more flexibility when the exact number of variables are not known in advance.
2. I am personally more comfortable manipulating ArrayList than other data structures as it is the most straightforward one in concept.
3. I can sort the items in the ArrayList by arrival time and remove it after passing it to the Priority Queue, which serves as the same purpose of creating another Priority Queue – this saves me some efforts and avoid confusion of utilizing two Priority Queues.

o For processes that had equal priority, it may have been better to execute the process with earlier arrival time instead of choosing arbitrarily. At a high level, how would you have to modify your project to accommodate this?

Answer:

This can be achieved by adding a conditional judgement with following steps:

1. Iterate all processes in the PQ;
2. Sort all processes by arrival time;
3. If some processes have same priority, execute the process with the smallest arrival time.

o What other changes could you consider making to your project to improve efficiency or readability or reusability?

Answer:

1. I will probably separate out the public class Process to a different module to improve reusability.
2. Maybe total waiting time doesn't need to be an attribute for the Process class and I can create and store total waiting time elsewhere only for calculation.
3. There might be a better data structure for D than ArrayList. I tried implementing using HashMap and Priority Queue. However, due to lack of time, I gave up those for easier implementation of ArrayList to me.