Marist College

BS in Computer Science
School of Computer Science and Mathematics

CMPT-424N Operating System
Alan Labouseur
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Lab2: OS

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Overview

Within this document, I will be answering the questions providing in the Lab1 document found on
https://www.labouseur.com/courses/os/

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Questions

For more information regarding my code, please visit my repository[1]

1 Explain the difference between internal and external fragmentation

- Internal Fragmentation is when the allocated memory is greater than the amount of memory requested. The resulting size difference represents unused memory within the allocated partition.

- External Fragmentation is when sufficient total memory is available to fulfill a request, but this memory is not located in a contiguous block.

2 Given five (5) memory partitions of 100KB, 500KB, 200KB, 300KB, and 600KB (in that order), how would optimal, first-fit, best-fit, and worst-fit algorithms place processes of 212KB, 417KB, 112KB, and 426KB (in that order)?

- Optimal:

    - 212 KB - 300 KB
    - 417 KB - 500 KB
    - 112 KB - 200 KB

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[1]GitHub: https://github.com/connorjohnson6/Johnson-OperatingSystem

- 426 KB - 600 KB

- first-fit:

  - 212KB - 500KB
  - 417KB - 600KB
  - 112KB - in the remaining 288 KB from first partition
  - 426KB - No space

- best-fit:

  - 212 KB - 300 KB
  - 417 KB - 500 KB
  - 112 KB - 200 KB
  - 426 KB - 600 KB

- worst-fit:

  - 212 KB - 600 KB
  - 417 KB - 500 KB
  - 112 KB - in the remaining 388 KB from first partition
  - 426 KB - No space