Dan Herve

CSCD 340

Lab 9

Default Memory Layout

172MB

224MB

236MB

312MB

382MB

390MB

504MB

480MB

360MB

268MB

212MB

112MB

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | P1  40 |  | P2  12 | P3  32 |  | P4  48 |  | P5  8 | P6  90 |  | P7  8 |

512MB

First Fit

236MB

172MB

504MB

212MB

268MB

284MB

144MB

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| P8  32 | P13  24 | P1  40 | P10  20 |  | P3  32 | P11  16 | P12  16 |  | P7  8 |

512MB

112MB

300MB

232MB

Best Fit

172MB

212MB

236MB

268MB

360MB

128MB

504MB

112MB

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| P12  16 | P13  24 |  | P1  40 | P11  16 |  | P3  32 | P8  32 |  | P10  20 |  | P7  8 |

512MB

380MB

152MB

228MB

300MB

Worst Fit

442MB

236MB

426MB

410MB

390MB

172MB

504MB

112MB

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| P8  32 |  | P1  40 |  | P3  32 |  | P10  20 | P11  16 | P12  16 | P13  24 |  | P7  8 |

512MB

144MB

466MB

268MB

212MB

Next Fit

504MB

312MB

172MB

212MB

236MB

268MB

284MB

360MB

112MB

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| P8  32 |  | P1  40 | P10  20 |  | P3  32 | P11  16 | P12  16 |  | P4  48 | P13  24 |  | P7  8 |

512MB

232MB

144MB

300MB

384MB

Analysis:

The first fit algorithm had the fewest number of fragments as well as the largest fragment of the group. Next fit had the largest number of small fragments, though not by a large margin. Worst fit, on the other hand, had the most medium to large fragments. Next fit and first fit tied for most processes in a row with no fragments between them.

Given the data, I would prefer either first fit or next fit. First fit is superior in that it has the fewest fragments, though knowledge of the algorithm says that this is not usually a strength of this algorithm. Next fit, however, has the advantage that it does not have to traverse from the beginning each time, so if processes are arriving and finishing with fairly consistent timing, it should be somewhat faster.