Assignment 3 Overview and Q & A

Specifications

- Memory size = 1024 MB
- Process size range from 1 to 512 (integer)
- List of processes: pid starts at 1 and increases
 - 1 200
 - 2 500
 - 3 350
- When a process in memory has to be swapped out, select the "oldest"
- Process that has been swapped out goes to the end of the process queue
- If a process has been swapped out 3 times we consider that it is done and does not go into the process queue
- Program ends when there are no more processes to service

Specifications

- Command line has the format:
 - \$./hole pfile <first|best|worst|next>
- Data structures anything that works
- Remember to include all code, including .h files, when constructing your tarfile for submission
- Remember to include a README file and, of course, a Makefile

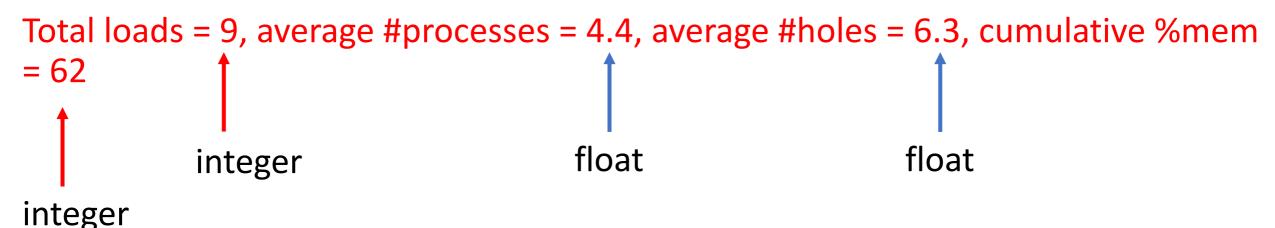
Output

After each load, print out:

pid loaded, #processes = 5, #holes = 3, %memusage = 41, cumulative %mem = 40

- load = every time you fit a process into memory
- %memusage = the percent of memory that is currently occupied by processes
- cumulative %mem = the average of all %memusages up until and including the current process load

After completion, print out:



Example 1

```
• Process file:
```

1 200

2 400

3 350

• Output:

pid loaded, #processes = 1, holes = 1, %memusage = 19, cumulative %mem = 19 pid loaded, #processes = 2, holes = 1, %memusage = 58, cumulative %mem = 38 pid loaded, #processes = 3, holes = 1, %memusage = 92, cumulative %mem = 56 Total loads = 3, average processes = 2.0, average #holes = 1.0, cumulative %mem = 56

Process file:

1 200

2 500

3 350

Example 2

Algorithm: first

pid loaded, #processes = 1, holes = 1, %memusage = 19, cumulative %mem = 19 pid loaded, #processes = 2, holes = 1, %memusage = 68, cumulative %mem = 43 pid loaded, #processes = 1, holes = 1, %memusage = 34, cumulative %mem = 40 pid loaded, #processes = 2, holes = 1, %memusage = 53, cumulative %mem = 43 pid loaded, #processes = 1, holes = 1, %memusage = 48, cumulative %mem = 44 pid loaded, #processes = 2, holes = 1, %memusage = 83, cumulative %mem = 50 pid loaded, #processes = 2, holes = 2, %memusage = 53, cumulative %mem = 51 pid loaded, #processes = 2, holes = 1, %memusage = 68, cumulative %mem = 53 pid loaded, #processes = -1, holes = 1, %memusage = 34, cumulative %mem = 51 Total loads = 9, average processes = 1.3, average #holes = 1.1, cumulative %mem = 51