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CPE 453
Lab 6

In my program, the user specifies the total number of bytes requested in memory as a command line argument. When requesting processes, the names of processes must be "P" immediately followed by a number. The Boolean debug can be changed to true to print more information that helps shed light on how my program works as a whole. Either "X" or "q" can be used to quit the program. All other commands should work according to the specification. Error handling for incorrect commands is implemented.

Sample Output on UNIX 1:

```
cpriest@unix1:/home/cpriest/csc453/lab6 $ ./allocator 1048576
allocator$ RQ P0 100 F

Using First Fit Memory Allocation...

Process P0 created with 100 bytes allocated.

allocator$ RQ P1 100 B

Using Best Fit Memory Allocation...

Process P1 created with 100 bytes allocated.

allocator$ RQ P2 100 W

Using Worst Fit Memory Allocation...

Process P2 created with 100 bytes allocated.

allocator$ STAT

Addresses [0:99] Process P0
Addresses [100:199] Process P1
Addresses [200:299] Process P2
Addresses [300:1048575] Unused

allocator$ RL P1

Process P1 released from memory (100 bytes).
```

```
allocator$ STAT

Addresses [0:99] Process P0
Addresses [100:199] Unused
Addresses [200:299] Process P2
Addresses [300:1048575] Unused

allocator$ C

Compacting all free memory together... compacted.

allocator$ STAT

Addresses [0:99] Process P0
Addresses [100:199] Process P2
Addresses [200:1048575] Unused

allocator$ X
cpriest@unix1:/home/cpriest/csc453/lab6 $
```

More Sample Output on UNIX 1:

```
cpriest@unix1:/home/cpriest/csc453/lab6 $ ./allocator 1048576
allocator$ RQ P0 550 F

Using First Fit Memory Allocation...

Process P0 created with 550 bytes allocated.

allocator$ RQ P1 100 F

Using First Fit Memory Allocation...

Process P1 created with 100 bytes allocated.

allocator$ RQ P2 375 F

Using First Fit Memory Allocation...

Process P2 created with 375 bytes allocated.

allocator$ RQ P3 100 F
```

```
Using First Fit Memory Allocation...

Process P3 created with 100 bytes allocated.

allocator$ RQ P4 1900 F

Using First Fit Memory Allocation...

Process P4 created with 1900 bytes allocated.

allocator$ RQ P5 100 F

Using First Fit Memory Allocation...

Process P5 created with 100 bytes allocated.

allocator$ RQ P6 4500 F

Using First Fit Memory Allocation...

Process P6 created with 4500 bytes allocated.

allocator$ RQ P7 100 F

Using First Fit Memory Allocation...

Process P7 created with 100 bytes allocated.

allocator$ STAT

Addresses [0:549] Process P0
Addresses [550:649] Process P1
Addresses [650:1024] Process P2
Addresses [1025:1124] Process P3
Addresses [1125:3024] Process P4
Addresses [3025:3124] Process P5
Addresses [3125:7624] Process P6
Addresses [7625:7724] Process P7
Addresses [7725:1048575] Unused

allocator$ RL P0

Process P0 released from memory (550 bytes).

allocator$ RL P2
```

```
Process P2 released from memory (375 bytes).

allocator$ RL P4

Process P4 released from memory (1900 bytes).

allocator$ RL P6

Process P6 released from memory (4500 bytes).

allocator$ STAT

Addresses [0:549] Unused
Addresses [550:649] Process P1
Addresses [650:1024] Unused
Addresses [1025:1124] Process P3
Addresses [1125:3024] Unused
Addresses [3025:3124] Process P5
Addresses [3125:7624] Unused
Addresses [7625:7724] Process P7
Addresses [7725:1048575] Unused

allocator$ C

Compacting all free memory together... compacted.

allocator$ STAT

Addresses [0:99] Process P1
Addresses [100:199] Process P3
Addresses [200:299] Process P5
Addresses [300:399] Process P7
Addresses [400:1048575] Unused

allocator$ q
cpriest@unix1:/home/cpriest/csc453/lab6 $
```