

Simulation of Memory Management using the First-Fit algorithm

Beginning of the run

List of available blocks

Start Address = 3145728 Size = 1048576
Start Address = 4194304 Size = 2097152
Start Address = 6291456 Size = 2097152
Start Address = 8388608 Size = 4194304
Start Address = 12582912 Size = 4194304
Total size of the list = 13631488

List of blocks in use

(none)

Total size of the list = 0

Transaction: request to load process 1001, block ID MAIN using 840000 bytes

Found a block of size 1048576

Success in allocating a block

List of available blocks

Start Address = 3985728 Size = 208576
Start Address = 4194304 Size = 2097152
Start Address = 6291456 Size = 2097152
Start Address = 8388608 Size = 4194304
Start Address = 12582912 Size = 4194304
Total size of the list = 12791488

List of blocks in use

Start Address = 3145728 Size = 840000 Process ID = 1001 Block ID = MAIN

Total size of the list = 840000

Transaction: request to terminate process 1001

Merging two blocks at 3145728 and 3985728

Merging two blocks at 3145728 and 4194304

Success in terminating a process

List of available blocks

Start Address = 3145728 Size = 3145728
Start Address = 6291456 Size = 2097152
Start Address = 8388608 Size = 4194304
Start Address = 12582912 Size = 4194304
Total size of the list = 13631488

List of blocks in use

(none)

Total size of the list = 0

Transaction: request to load process 1002, block ID XYZ1 using 1572864 bytes

Found a block of size 3145728

Success in allocating a block

List of available blocks

Start Address = 4718592 Size = 1572864
Start Address = 6291456 Size = 2097152
Start Address = 8388608 Size = 4194304
Start Address = 12582912 Size = 4194304
Total size of the list = 12058624

List of blocks in use

Start Address = 3145728 Size = 1572864 Process ID = 1002 Block ID = XYZ1
Total size of the list = 1572864

Transaction: request to allocate 1835008 bytes for process 1002, block ID: BIG1
Found a block of size 2097152
Success in allocating a block

List of available blocks

Start Address = 4718592 Size = 1572864
Start Address = 8126464 Size = 262144
Start Address = 8388608 Size = 4194304
Start Address = 12582912 Size = 4194304
Total size of the list = 10223616

List of blocks in use

Start Address = 6291456 Size = 1835008 Process ID = 1002 Block ID = BIG1
Start Address = 3145728 Size = 1572864 Process ID = 1002 Block ID = XYZ1
Total size of the list = 3407872

Transaction: request to allocate 1835008 bytes for process 1002, block ID: BIG2
Found a block of size 4194304
Success in allocating a block

List of available blocks

Start Address = 4718592 Size = 1572864
Start Address = 8126464 Size = 262144
Start Address = 10223616 Size = 2359296
Start Address = 12582912 Size = 4194304
Total size of the list = 8388608

List of blocks in use

Start Address = 8388608 Size = 1835008 Process ID = 1002 Block ID = BIG2
Start Address = 6291456 Size = 1835008 Process ID = 1002 Block ID = BIG1
Start Address = 3145728 Size = 1572864 Process ID = 1002 Block ID = XYZ1
Total size of the list = 5242880

Transaction: request to terminate process 1002
Merging two blocks at 8126464 and 8388608
Merging two blocks at 4718592 and 6291456
Success in terminating a process

List of available blocks

Start Address = 3145728 Size = 1572864
Start Address = 4718592 Size = 3407872

Start Address = 8126464 Size = 2097152
Start Address = 10223616 Size = 2359296
Start Address = 12582912 Size = 4194304
Total size of the list = 13631488

List of blocks in use
(none)
Total size of the list = 0

Transaction: request to load process 1003, block ID ABC1 using 680000 bytes
Found a block of size 1572864
Success in allocating a block

List of available blocks
Start Address = 3825728 Size = 892864
Start Address = 4718592 Size = 3407872
Start Address = 8126464 Size = 2097152
Start Address = 10223616 Size = 2359296
Start Address = 12582912 Size = 4194304
Total size of the list = 12951488

List of blocks in use
Start Address = 3145728 Size = 680000 Process ID = 1003 Block ID = ABC1
Total size of the list = 680000

Transaction: request to allocate 786432 bytes for process 1003, block ID: PQ0A
Found a block of size 892864
Success in allocating a block

List of available blocks
Start Address = 4612160 Size = 106432
Start Address = 4718592 Size = 3407872
Start Address = 8126464 Size = 2097152
Start Address = 10223616 Size = 2359296
Start Address = 12582912 Size = 4194304
Total size of the list = 12165056

List of blocks in use
Start Address = 3825728 Size = 786432 Process ID = 1003 Block ID = PQ0A
Start Address = 3145728 Size = 680000 Process ID = 1003 Block ID = ABC1
Total size of the list = 1466432

Transaction: request to allocate 786432 bytes for process 1003, block ID: PQ0B
Found a block of size 3407872
Success in allocating a block

List of available blocks
Start Address = 4612160 Size = 106432
Start Address = 5505024 Size = 2621440
Start Address = 8126464 Size = 2097152
Start Address = 10223616 Size = 2359296
Start Address = 12582912 Size = 4194304

Total size of the list = 11378624

List of blocks in use

Start Address = 4718592 Size = 786432 Process ID = 1003 Block ID = PQ0B

Start Address = 3825728 Size = 786432 Process ID = 1003 Block ID = PQ0A

Start Address = 3145728 Size = 680000 Process ID = 1003 Block ID = ABC1

Total size of the list = 2252864

Transaction: request to allocate 786432 bytes for process 1003, block ID: PQ0C

Found a block of size 2621440

Success in allocating a block

List of available blocks

Start Address = 4612160 Size = 106432

Start Address = 6291456 Size = 1835008

Start Address = 8126464 Size = 2097152

Start Address = 10223616 Size = 2359296

Start Address = 12582912 Size = 4194304

Total size of the list = 10592192

List of blocks in use

Start Address = 5505024 Size = 786432 Process ID = 1003 Block ID = PQ0C

Start Address = 4718592 Size = 786432 Process ID = 1003 Block ID = PQ0B

Start Address = 3825728 Size = 786432 Process ID = 1003 Block ID = PQ0A

Start Address = 3145728 Size = 680000 Process ID = 1003 Block ID = ABC1

Total size of the list = 3039296

Transaction: request to allocate 786432 bytes for process 1003, block ID: PQ0D

Found a block of size 1835008

Success in allocating a block

List of available blocks

Start Address = 4612160 Size = 106432

Start Address = 7077888 Size = 1048576

Start Address = 8126464 Size = 2097152

Start Address = 10223616 Size = 2359296

Start Address = 12582912 Size = 4194304

Total size of the list = 9805760

List of blocks in use

Start Address = 6291456 Size = 786432 Process ID = 1003 Block ID = PQ0D

Start Address = 5505024 Size = 786432 Process ID = 1003 Block ID = PQ0C

Start Address = 4718592 Size = 786432 Process ID = 1003 Block ID = PQ0B

Start Address = 3825728 Size = 786432 Process ID = 1003 Block ID = PQ0A

Start Address = 3145728 Size = 680000 Process ID = 1003 Block ID = ABC1

Total size of the list = 3825728

Transaction: request to deallocate block ID PQ0C for process 1003

Merging two blocks at 7077888 and 8126464

Success in deallocating a block

List of available blocks

Start Address = 4612160 Size = 106432
Start Address = 5505024 Size = 786432
Start Address = 7077888 Size = 3145728
Start Address = 10223616 Size = 2359296
Start Address = 12582912 Size = 4194304
Total size of the list = 10592192

List of blocks in use

Start Address = 6291456 Size = 786432 Process ID = 1003 Block ID = PQ0D
Start Address = 4718592 Size = 786432 Process ID = 1003 Block ID = PQ0B
Start Address = 3825728 Size = 786432 Process ID = 1003 Block ID = PQ0A
Start Address = 3145728 Size = 680000 Process ID = 1003 Block ID = ABC1
Total size of the list = 3039296

Transaction: request to deallocate block ID PQ0B for process 1003
Merging two blocks at 4612160 and 4718592
Merging two blocks at 4612160 and 5505024
Success in deallocating a block

List of available blocks

Start Address = 4612160 Size = 1679296
Start Address = 7077888 Size = 3145728
Start Address = 10223616 Size = 2359296
Start Address = 12582912 Size = 4194304
Total size of the list = 11378624

List of blocks in use

Start Address = 6291456 Size = 786432 Process ID = 1003 Block ID = PQ0D
Start Address = 3825728 Size = 786432 Process ID = 1003 Block ID = PQ0A
Start Address = 3145728 Size = 680000 Process ID = 1003 Block ID = ABC1
Total size of the list = 2252864

Transaction: request to deallocate block ID ZZZZ for process 1003
Unable to comply as the indicated block cannot be found.

List of available blocks

Start Address = 4612160 Size = 1679296
Start Address = 7077888 Size = 3145728
Start Address = 10223616 Size = 2359296
Start Address = 12582912 Size = 4194304
Total size of the list = 11378624

List of blocks in use

Start Address = 6291456 Size = 786432 Process ID = 1003 Block ID = PQ0D
Start Address = 3825728 Size = 786432 Process ID = 1003 Block ID = PQ0A
Start Address = 3145728 Size = 680000 Process ID = 1003 Block ID = ABC1
Total size of the list = 2252864

Transaction: request to terminate process 1003
Merging two blocks at 4612160 and 6291456
Merging two blocks at 3825728 and 4612160
Merging two blocks at 3145728 and 3825728

Success in terminating a process

List of available blocks

Start Address = 3145728 Size = 3932160
Start Address = 7077888 Size = 3145728
Start Address = 10223616 Size = 2359296
Start Address = 12582912 Size = 4194304
Total size of the list = 13631488

List of blocks in use

(none)

Total size of the list = 0

Transaction: request to load process 1004, block ID UGLY using 5000000 bytes
Unable to comply as no block of adequate size is available

List of available blocks

Start Address = 3145728 Size = 3932160
Start Address = 7077888 Size = 3145728
Start Address = 10223616 Size = 2359296
Start Address = 12582912 Size = 4194304
Total size of the list = 13631488

List of blocks in use

(none)

Total size of the list = 0

Transaction: request to terminate process 1004
Unable to comply as the indicated process could not be found.

List of available blocks

Start Address = 3145728 Size = 3932160
Start Address = 7077888 Size = 3145728
Start Address = 10223616 Size = 2359296
Start Address = 12582912 Size = 4194304
Total size of the list = 13631488

List of blocks in use

(none)

Total size of the list = 0

End of the run

List of available blocks

Start Address = 3145728 Size = 3932160
Start Address = 7077888 Size = 3145728
Start Address = 10223616 Size = 2359296
Start Address = 12582912 Size = 4194304
Total size of the list = 13631488

List of blocks in use

(none)

Total size of the list = 0