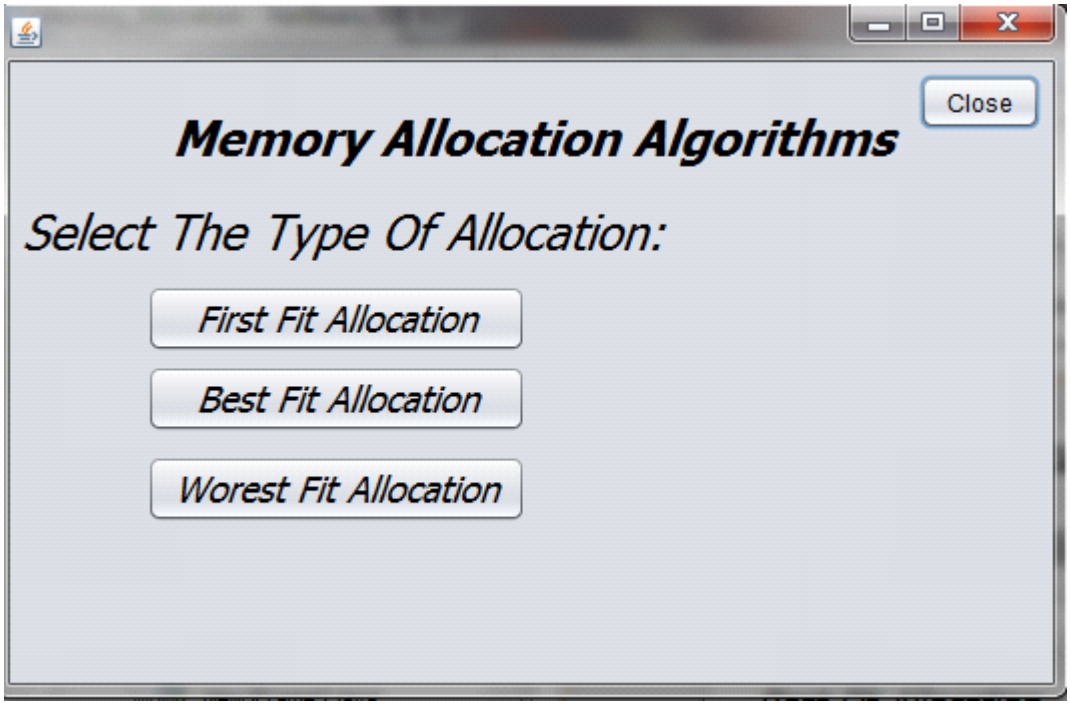
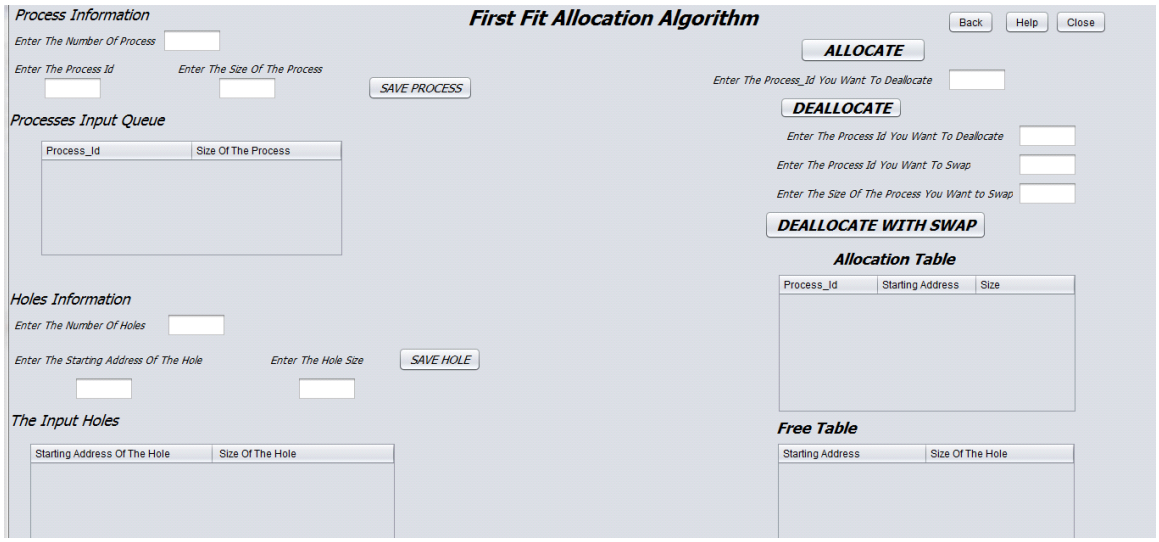
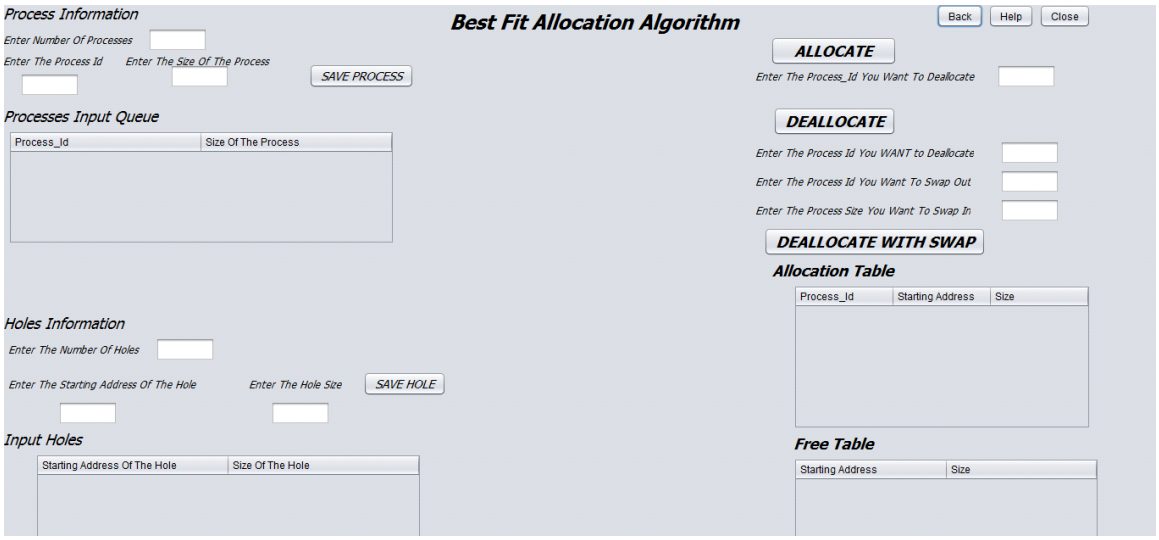
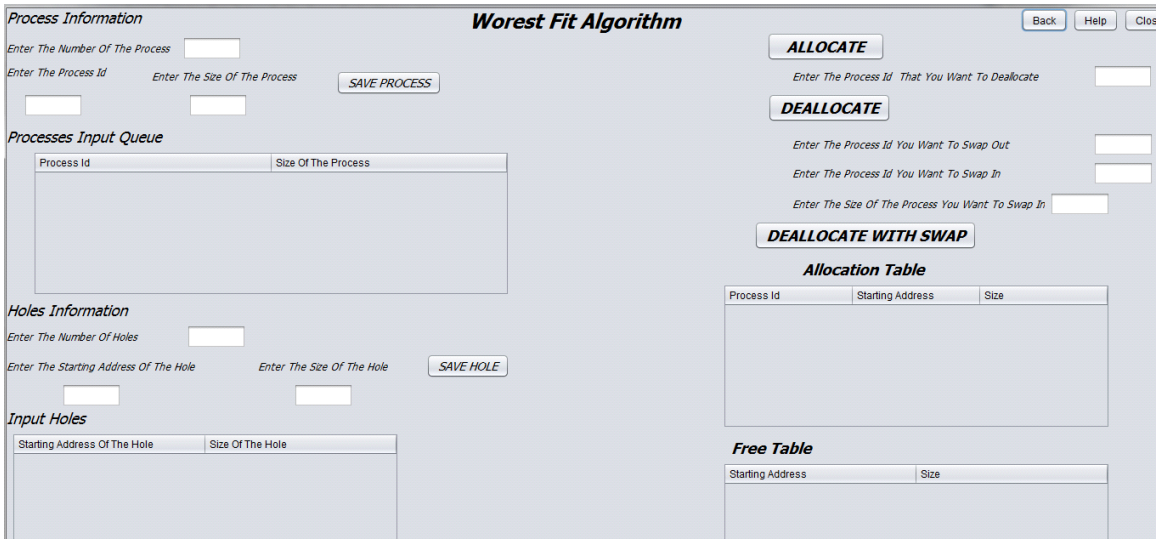
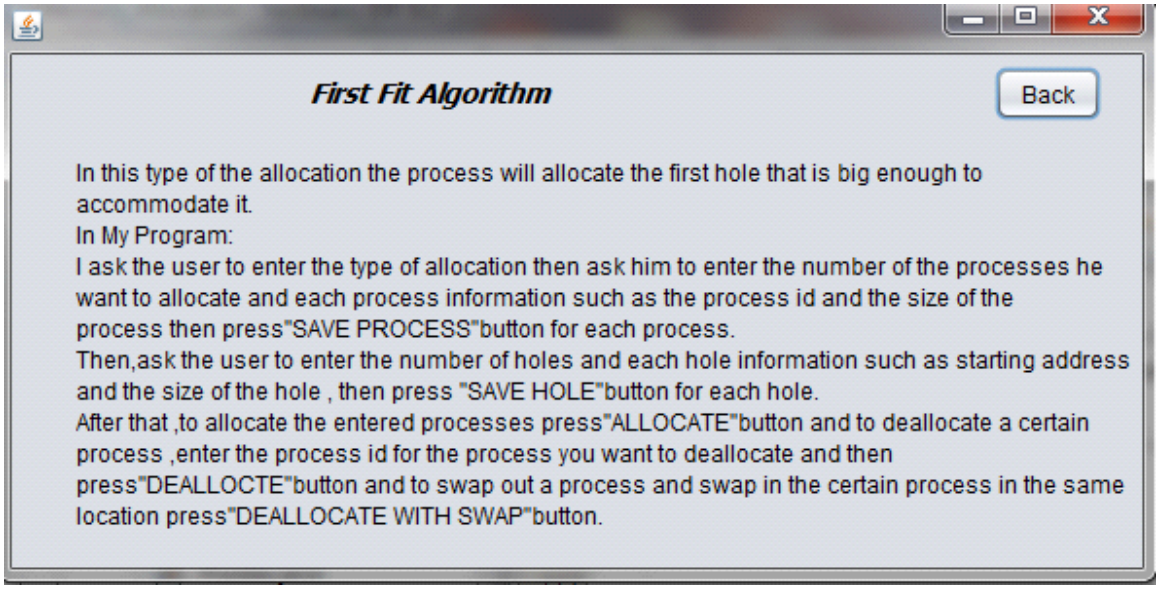
Memory Allocation Project

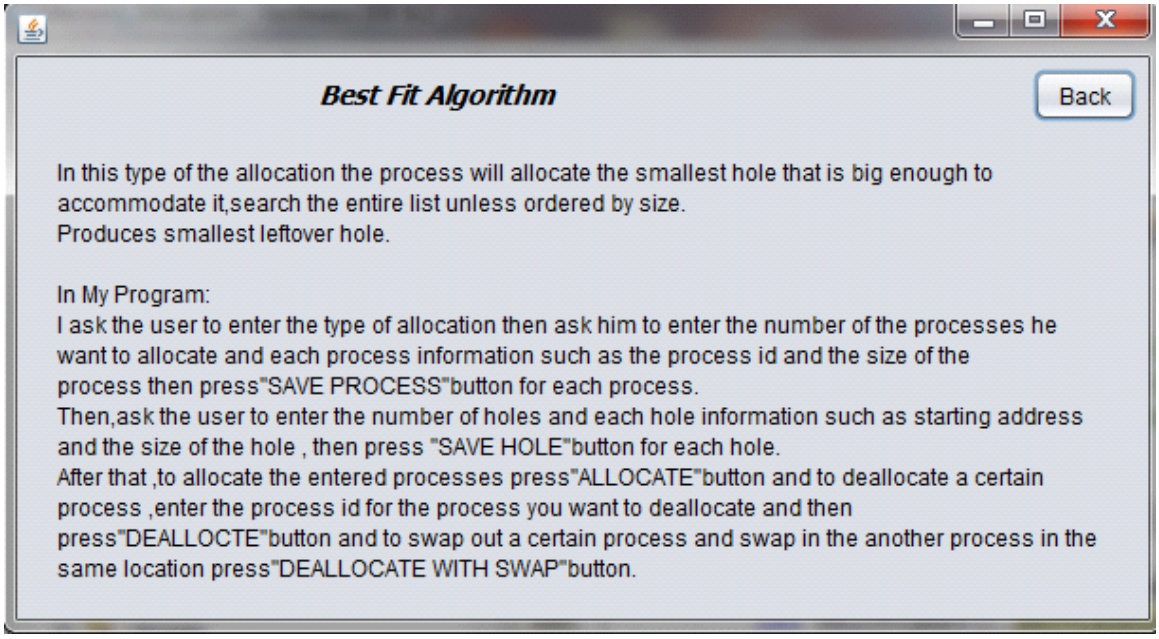





Process Information
Best Fit Allocation Algorithm
Back
Help
Close
Enter Number Of Processes
Enter The Process Id
Enter The Size Of The Process
SAVE PROCESS
ALLOCATE
Enter The Process_Id You Want To Deallocate
Processes Input Queue
Process_Id
Size Of The Process
DEALLOCATE
Enter The Process Id You WANT to Deallocate
Enter The Process Id You Want To Swap Out
Enter The Process Size You Want To Swap In
DEALLOCATE WITH SWAP
Allocation Table
Process_Id
Starting Address
Size
Holes Information
Enter The Number Of Holes
Enter The Starting Address Of The Hole
Enter The Hole Size
SAVE HOLE
Input Holes
Starting Address Of The Hole
Size Of The Hole
Free Table
Starting Address
Size


Process Information
Worest Fit Algorithm
Back
Help
Clos
Enter The Number Of The Process
Enter The Process Id
Enter The Size Of The Process
SAVE PROCESS
ALLOCATE
Enter The Process Id That You Want To Deallocate
DEALLOCATE
Processes Input Queue
Process Id
Size Of The Process
Enter The Process Id You Want To Swap Out
Enter The Process Id You Want To Swap In
Enter The Size Of The Process You Want To Swap In
DEALLOCATE WITH SWAP
Allocation Table
Process Id
Starting Address
Size
Holes Information
Enter The Number Of Holes
Enter The Starting Address Of The Hole
Enter The Size Of The Hole
SAVE HOLE
Input Holes
Starting Address Of The Hole
Size Of The Hole
Free Table
Starting Address
Size


First Fit Algorithm
Back
In this type of the allocation the process will allocate the first hole that is big enough to accommodate it.
In My Program:
I ask the user to enter the type of allocation then ask him to enter the number of the processes he want to allocate and each process information such as the process id and the size of the process then press"SAVE PROCESS"button for each process.
Then,ask the user to enter the number of holes and each hole information such as starting address and the size of the hole , then press "SAVE HOLE"button for each hole.
After that ,to allocate the entered processes press"ALLOCATE"button and to deallocate a certain process ,enter the process id for the process you want to deallocate and then press"DEALLOCTE"button and to swap out a process and swap in the certain process in the same location press"DEALLOCATE WITH SWAP"button.


Best Fit Algorithm
Back
In this type of the allocation the process will allocate the smallest hole that is big enough to accommodate it,search the entire list unless ordered by size.
Produces smallest leftover hole.
In My Program:
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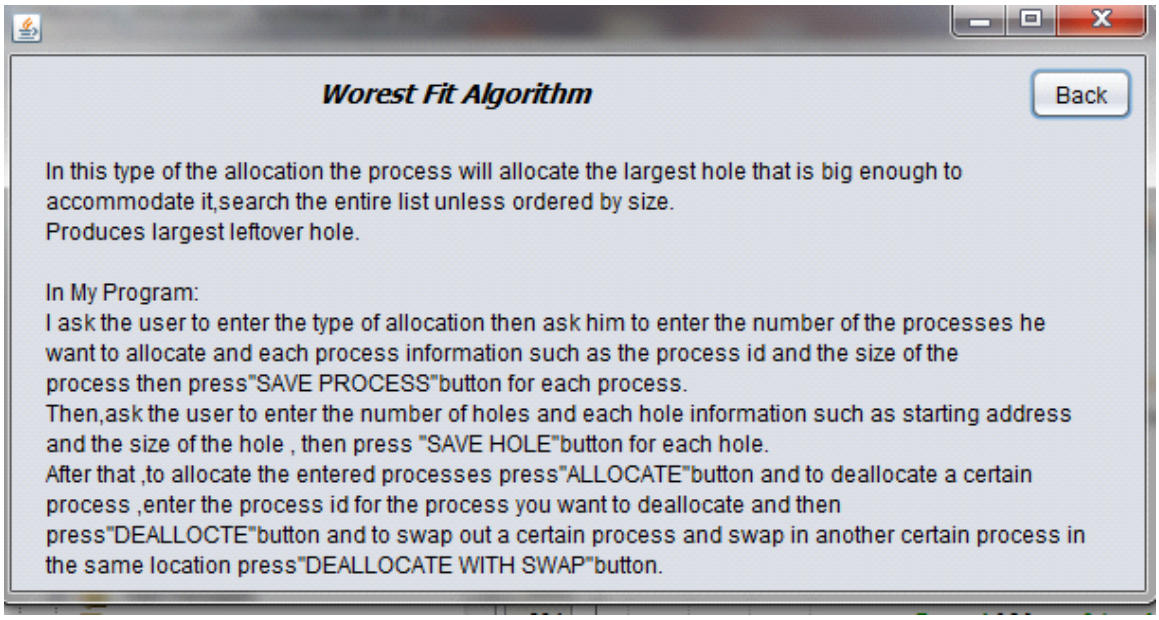
Worest Fit Algorithm
Back
In this type of the allocation the process will allocate the largest hole that is big enough to accommodate it,search the entire list unless ordered by size.
Produces largest leftover hole.
In My Program:
I ask the user to enter the type of allocation then ask him to enter the number of the processes he want to allocate and each process information such as the process id and the size of the process then press"SAVE PROCESS"button for each process.
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First Fit Allocation :

In this type of the allocation the process will allocate the first hole that is big enough to accommodate it.

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Test Case:

Partitions -> 100,500,200,300,600 (KB)

Starting Address: 0,100,600,800,1100

Processes Size-> p1 size->212

p2 size->417

p3 size-> 112

p4 size->426

Solution:

p1 allocates at hole size (500KB) with starting address (100)and the new size for this block is(288KB) with starting address (312).

p2 allocates at hole size (600KB) with starting address (1100)and the new size for this block is(183KB) with starting address (1517).

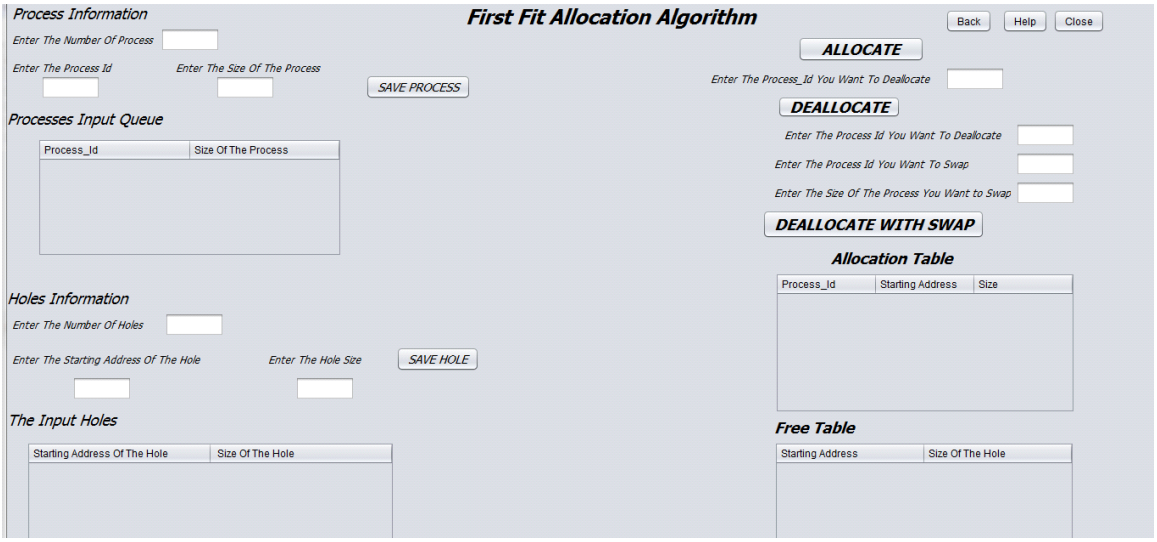
p3 allocates at hole size (288KB) with starting address (312)and the new size for this block is(176KB) with starting address (424).

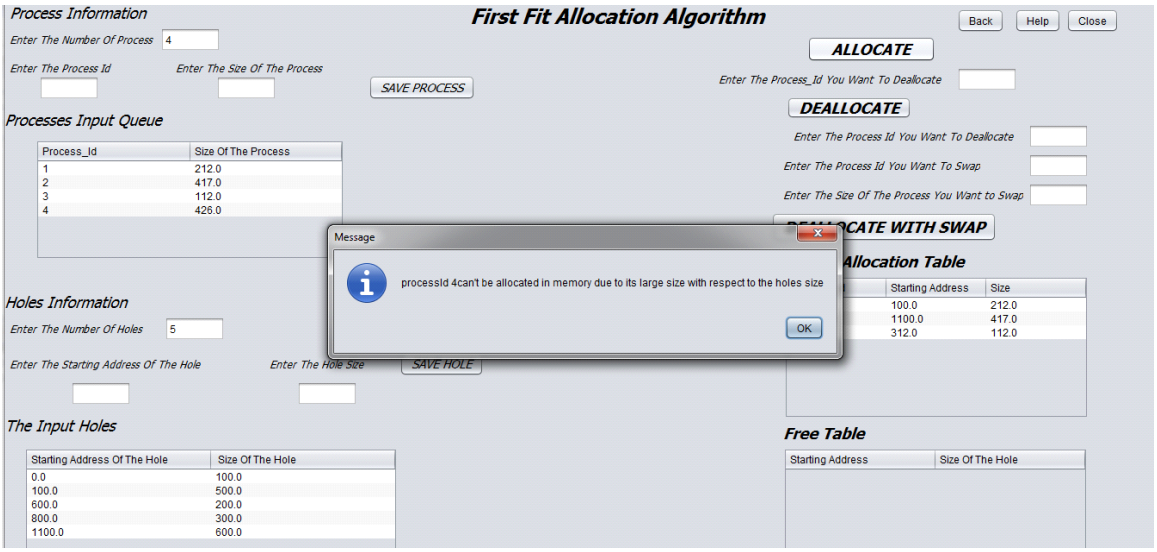
p4 can't be allocated due to its large size w.r.t the holes sizes.

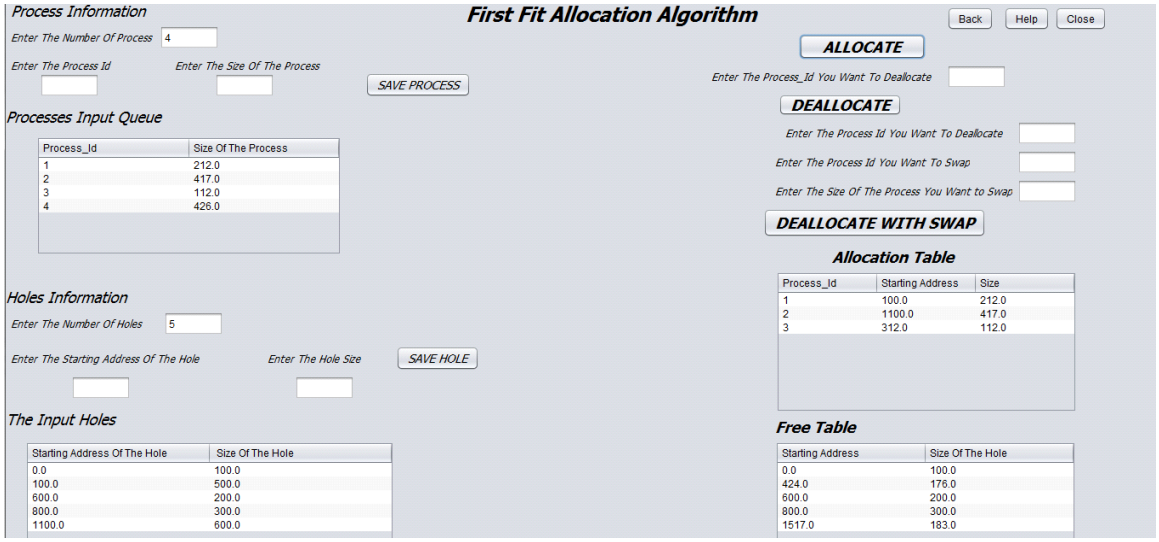
If P1 is deallocated then will be a new hole with starting address(100)and size(212KB).

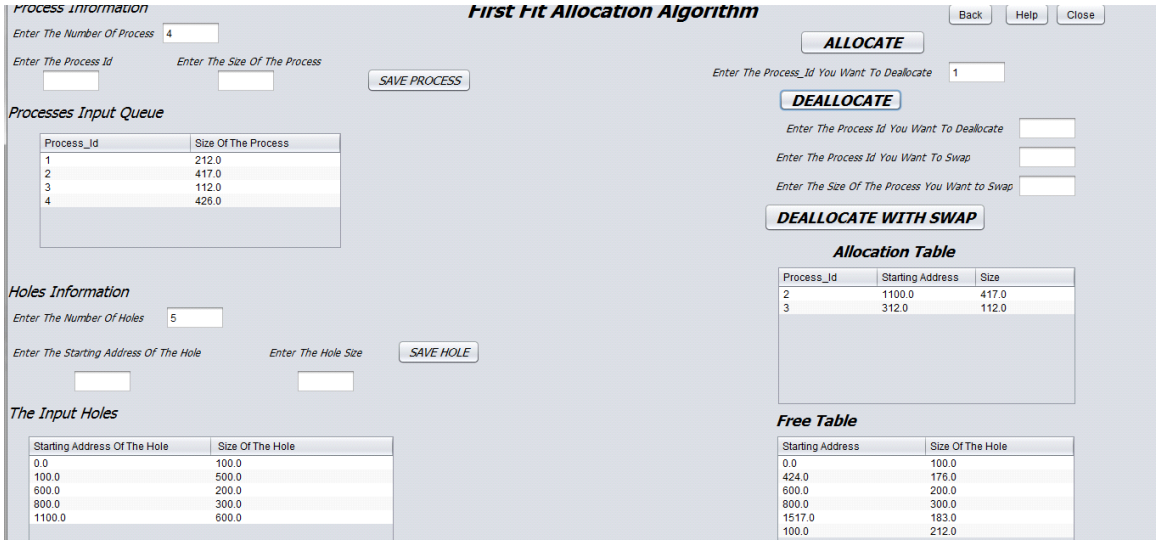
If we want to swap out process p1 and swap in process p5 with size =200

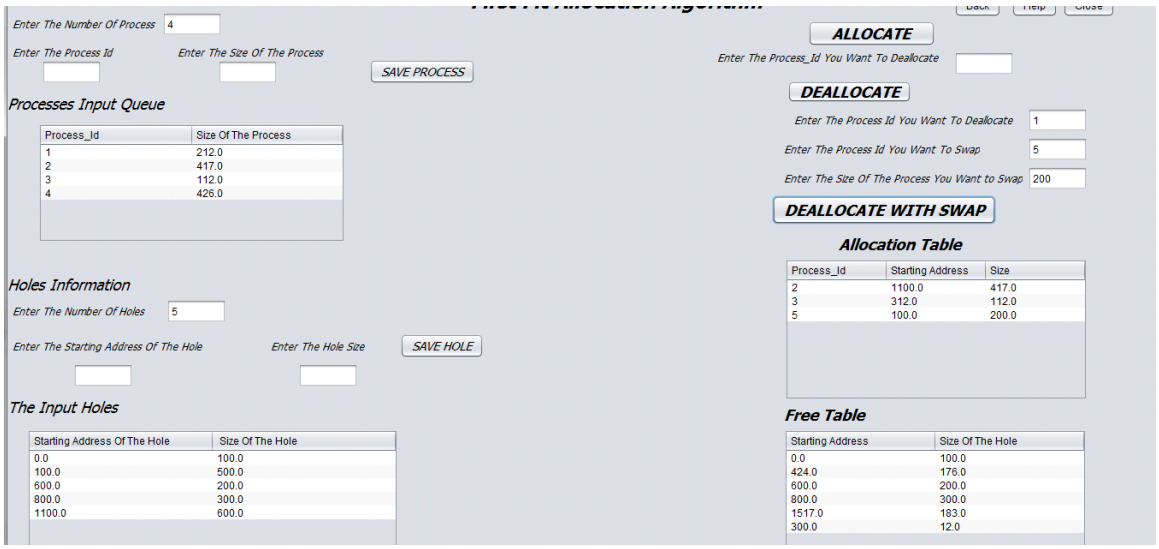
then p5 will be allocated at starting address 100 and size 200 and then will be a new hole at starting address 300 with size 12KB.






Process Information
First Fit Allocation Algorithm
Back
Help
Close
Enter The Number Of Process
4
ALLOCATE
Enter The Process Id
Enter The Size Of The Process
SAVE PROCESS
Enter The Process_Id You Want To Deallocate
DEALLOCATE
Processes Input Queue
Process_Id
Size Of The Process
1
212.0
2
417.0
3
112.0
4
426.0
Enter The Process Id You Want To Deallocate
Enter The Process Id You Want To Swap
Enter The Size Of The Process You Want to Swap
DEALLOCATE WITH SWAP
Allocation Table
Process_Id
Starting Address
Size
1
100.0
212.0
2
1100.0
417.0
3
312.0
112.0
Holes Information
Enter The Number Of Holes
5
Enter The Starting Address Of The Hole
Enter The Hole Size
SAVE HOLE
The Input Holes
Starting Address Of The Hole
Size Of The Hole
0.0
100.0
100.0
500.0
600.0
200.0
800.0
300.0
1100.0
600.0
Free Table
Starting Address
Size Of The Hole
0.0
100.0
424.0
176.0
600.0
200.0
800.0
300.0
1517.0
183.0


First Fit Allocation Algorithm
Back
Help
Close
Enter The Number Of Process
4
ALLOCATE
Enter The Process Id
Enter The Size Of The Process
SAVE PROCESS
Enter The Process_Id You Want To Deallocate
1
DEALLOCATE
Processes Input Queue
Process_Id
Size Of The Process
1
212.0
2
417.0
3
112.0
4
426.0
Enter The Process Id You Want To Deallocate
Enter The Process Id You Want To Swap
Enter The Size Of The Process You Want to Swap
DEALLOCATE WITH SWAP
Allocation Table
Process_Id
Starting Address
Size
2
1100.0
417.0
3
312.0
112.0
Holes Information
Enter The Number Of Holes
5
Enter The Starting Address Of The Hole
Enter The Hole Size
SAVE HOLE
The Input Holes
Starting Address Of The Hole
Size Of The Hole
0.0
100.0
100.0
500.0
600.0
200.0
800.0
300.0
1100.0
600.0
Free Table
Starting Address
Size Of The Hole
0.0
100.0
424.0
176.0
600.0
200.0
800.0
300.0
1517.0
183.0
100.0
212.0


Enter The Number Of Process
4
ALLOCATE
Enter The Process Id
Enter The Size Of The Process
SAVE PROCESS
Enter The Process_Id You Want To Deallocate
DEALLOCATE
Processes Input Queue
Process_Id
Size Of The Process
1
212.0
2
417.0
3
112.0
4
426.0
Enter The Process Id You Want To Deallocate
1
Enter The Process Id You Want To Swap
5
Enter The Size Of The Process You Want to Swap
200
DEALLOCATE WITH SWAP
Allocation Table
Process_Id
Starting Address
Size
2
1100.0
417.0
3
312.0
112.0
5
100.0
200.0
Holes Information
Enter The Number Of Holes
5
Enter The Starting Address Of The Hole
Enter The Hole Size
SAVE HOLE
The Input Holes
Starting Address Of The Hole
Size Of The Hole
0.0
100.0
100.0
500.0
600.0
200.0
800.0
300.0
1100.0
600.0
Free Table
Starting Address
Size Of The Hole
0.0
100.0
424.0
176.0
600.0
200.0
800.0
300.0
1517.0
183.0
300.0
12.0

Best Fit Allocation:

In this type of the allocation the process will allocate the smallest hole that is big enough to accommodate it,search the entire list unless ordered by size.

Produces smallest leftover hole.

In My Program:

I ask the user to enter the type of allocation then ask him to enter the number of the processes he want to allocate and each process information such as the process id and the size of the process then press"SAVE PROCESS"button for each process.

Then,ask the user to enter the number of holes and each hole information such as starting address and the size of the hole , then press "SAVE HOLE"button for each hole.

After that ,to allocate the entered processes press"ALLOCATE"button and to deallocate a certain process ,enter the process id for the process you want to deallocate and then press"DEALLOCTE"button and to swap out a certain process and swap in the another process in the same location press"DEALLOCATE WITH SWAP"button.

Test Case:

Partitions -> 100,500,200,300,600 (KB)

Starting Address: 0,100,600,800,1100

Processes Size-> p1 size->212

p2 size->417

p3 size-> 112

p4 size->426

Solution:

p1 allocates at hole size (300KB) with starting address (800)and the new size for this block is(88KB) with starting address (1012).

p2 allocates at hole size (500KB) with starting address (100)and the new size for this block is(83KB) with starting address (517).

p3 allocates at hole size (200KB) with starting address (600)and the new size for this block

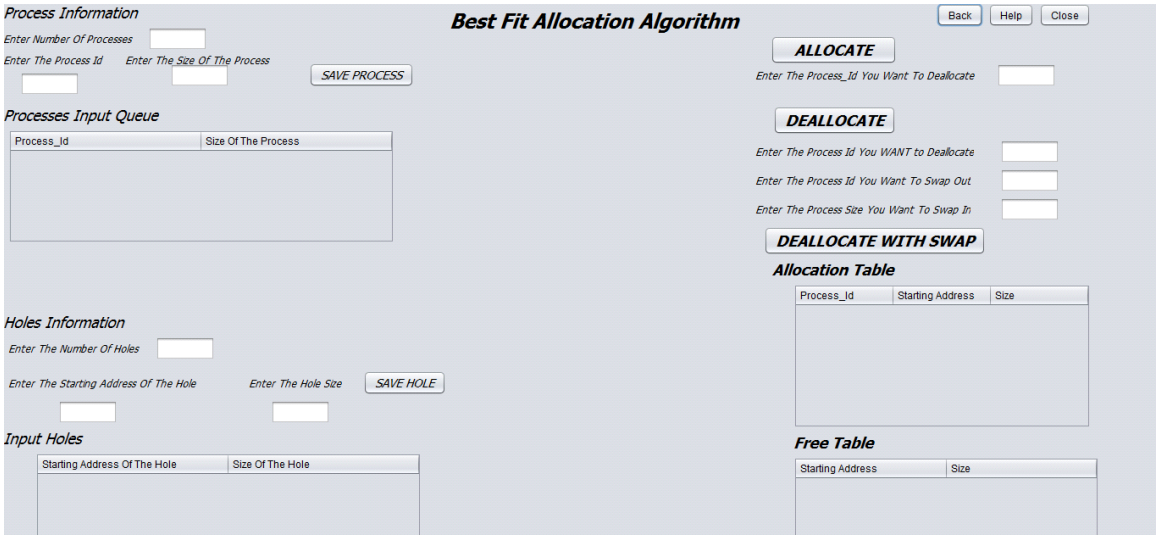
is(88KB) with starting address (712).

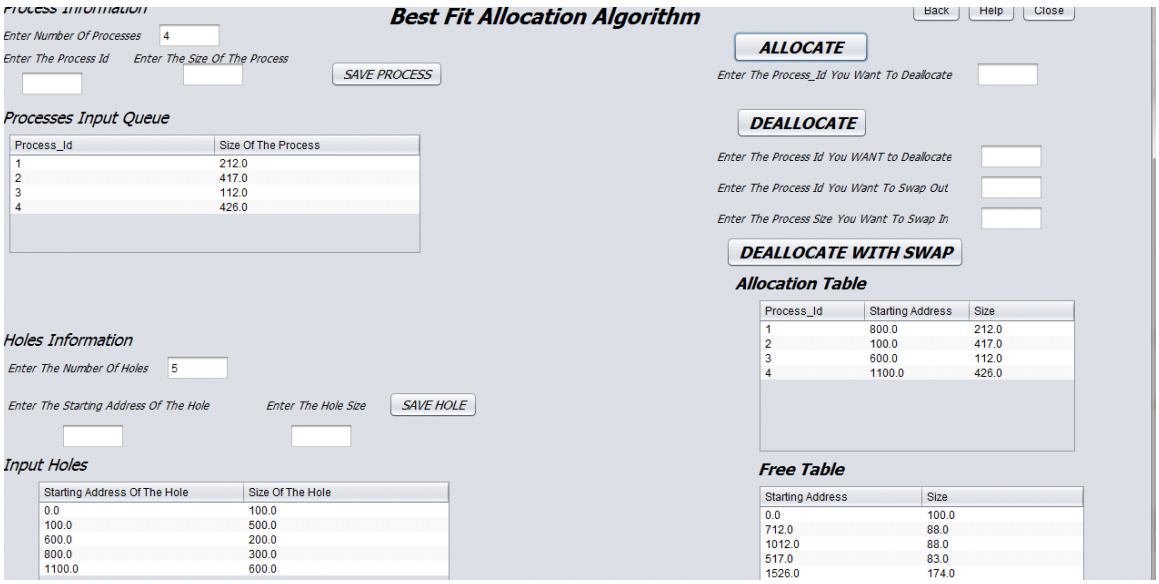
p4 allocates at hole size (600KB) with starting address (1100)and the new size for this block is(174KB) with starting address (1526).

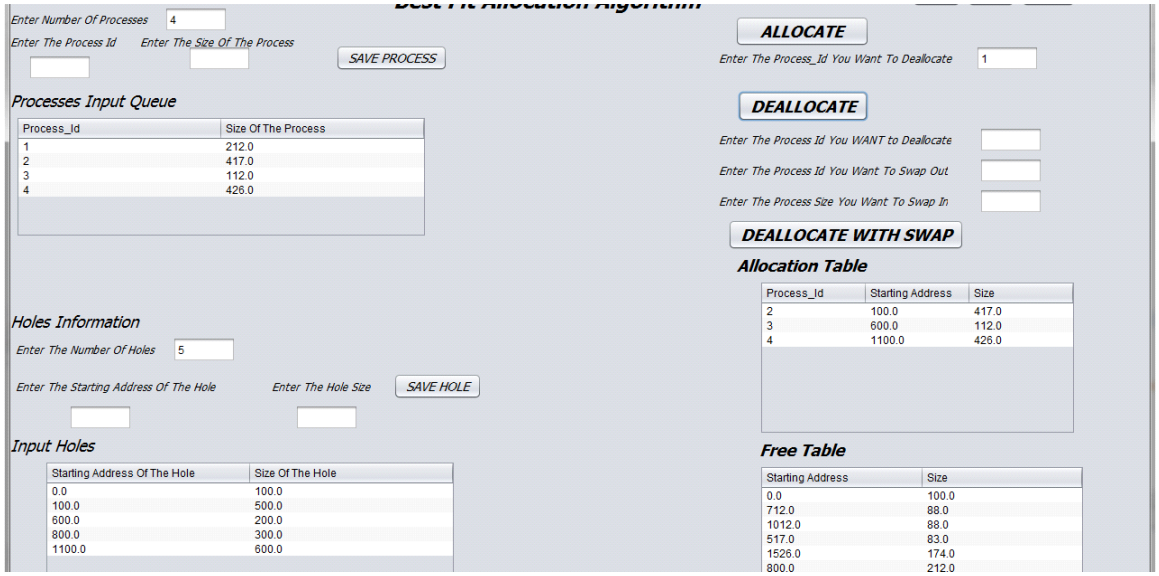
If P1 is deallocated then will be a new hole with starting address(800)and size(212KB).

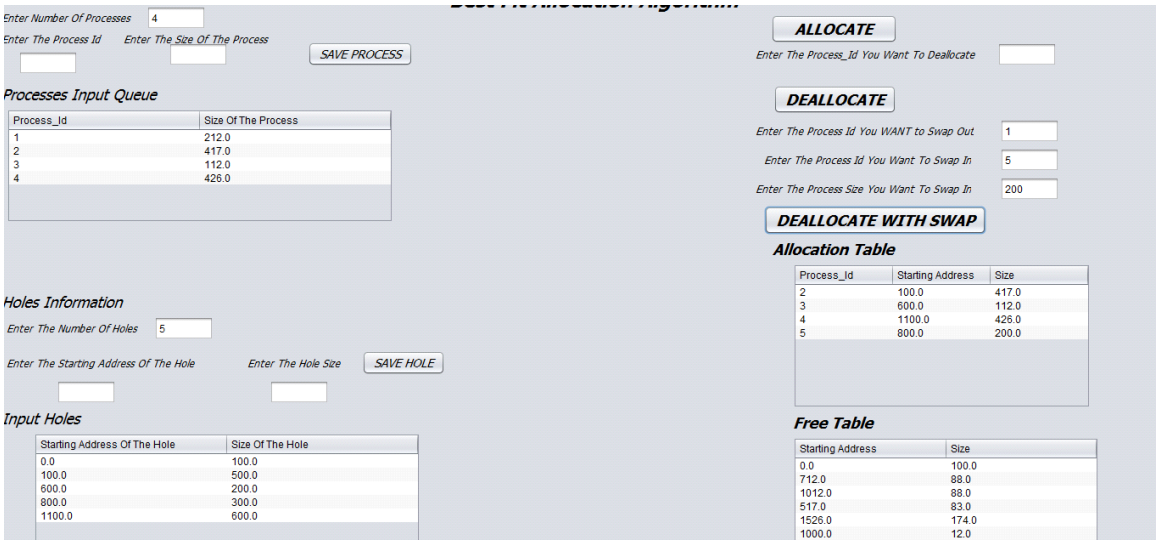
If we want to swap out process p1 and swap in process p5 with size =200

then p5 will be allocated at starting address 800 and size 200 and then will be a new hole at starting address 1000 with size 12KB.









Worest Fit Allocation:

In this type of the allocation the process will allocate the largest hole that is big enough to accommodate it,search the entire list unless ordered by size.

Produces largest leftover hole.

In My Program:

I ask the user to enter the type of allocation then ask him to enter the number of the processes he want to allocate and each process information such as the process id and the size of the

process then press"SAVE PROCESS"button for each process.

Then,ask the user to enter the number of holes and each hole information such as starting address and the size of the hole , then press "SAVE HOLE"button for each hole.

After that ,to allocate the entered processes press"ALLOCATE"button and to deallocate a certain process ,enter the process id for the process you want to deallocate and then press"DEALLOCTE"button and to swap out a certain process and swap in another certain process in the same location press"DEALLOCATE WITH SWAP"button.

Test Case:

Partitions -> 100,500,200,300,600 (KB)

Starting Address: 0,100,600,800,1100

Processes Size-> p1 size->212

p2 size->417

p3 size-> 112

p4 size->426

Solution:

p1 allocates at hole size (600KB) with starting address (1100)and the new size for this block is(388KB) with starting address (1312).

p2 allocates at hole size (500KB) with starting address (100)and the new size for this block is(83KB) with starting address (517).

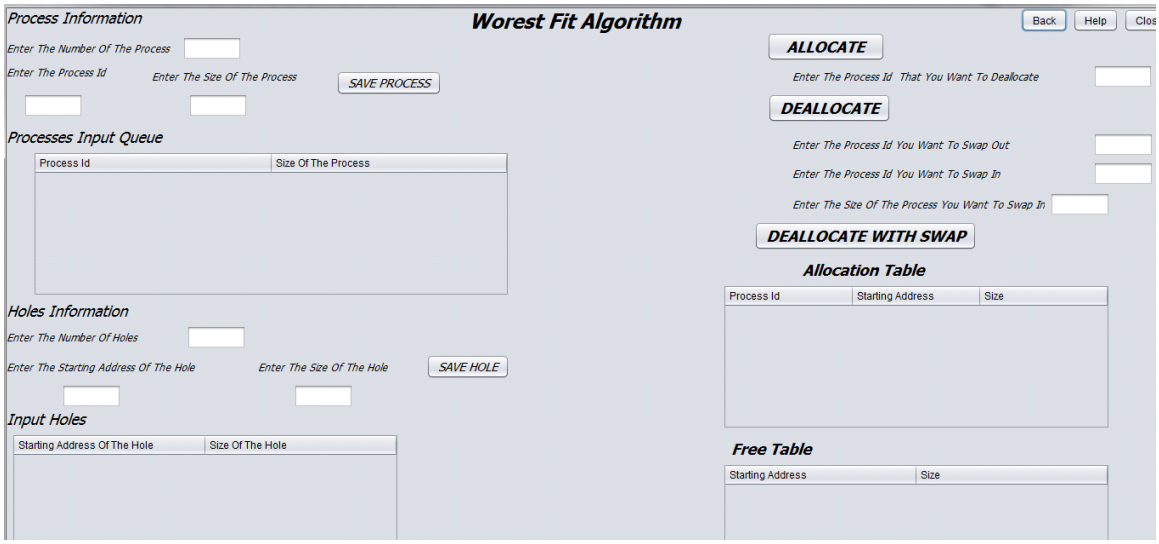
p3 allocates at hole size (388KB) with starting address (1312)and the new size for this block is(88KB) with starting address (276).

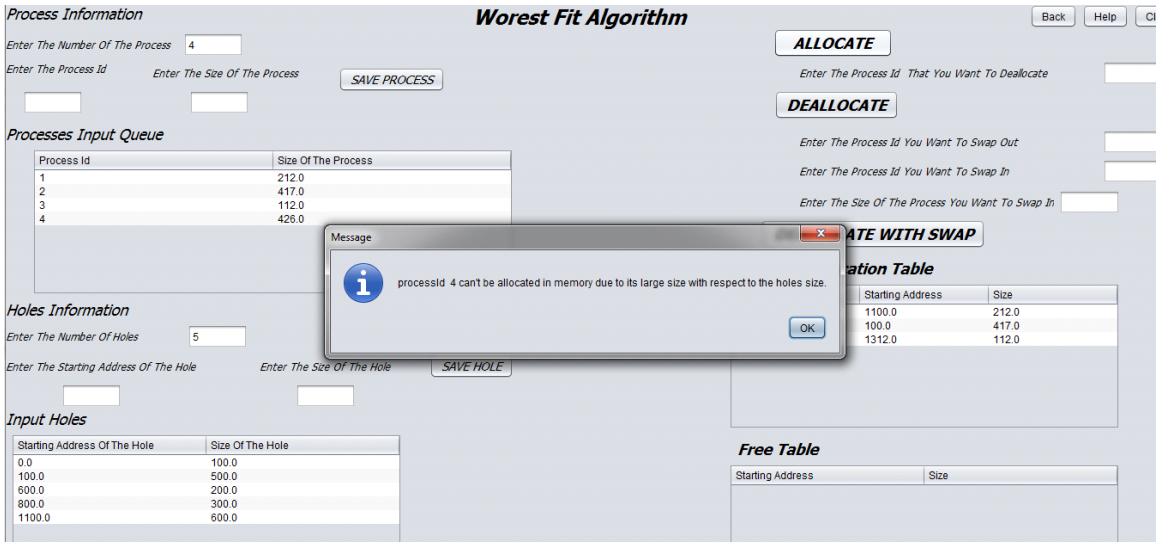
p4 can't be allocated due to its large size w.r.t the holes sizes.

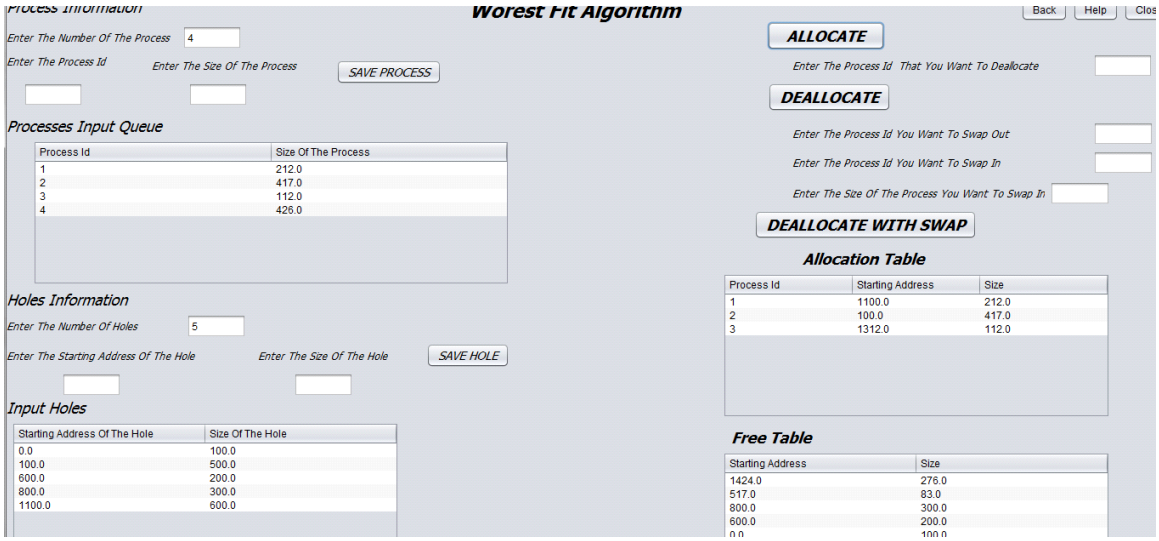
If P1 is deallocated then will be a new hole with starting address(1100)and size(212KB).

If we want to swap out process p1 and swap in process p5 with size =200

then p5 will be allocated at starting address 1100 and size 200 and then will be a new hole at starting address 1300 with size 12KB.


Process Information
Worest Fit Algorithm
Back
Help
Clos
Enter The Number Of The Process
ALLOCATE
Enter The Process Id
Enter The Size Of The Process
SAVE PROCESS
Enter The Process Id That You Want To Deallocate
DEALLOCATE
Processes Input Queue
Process Id
Size Of The Process
Enter The Process Id You Want To Swap Out
Enter The Process Id You Want To Swap In
Enter The Size Of The Process You Want To Swap In
DEALLOCATE WITH SWAP
Allocation Table
Process Id
Starting Address
Size
Holes Information
Enter The Number Of Holes
Enter The Starting Address Of The Hole
Enter The Size Of The Hole
SAVE HOLE
Input Holes
Starting Address Of The Hole
Size Of The Hole
Free Table
Starting Address
Size


Process Information
Worest Fit Algorithm
Back
Help
Enter The Number Of The Process
4
ALLOCATE
Enter The Process Id
Enter The Size Of The Process
SAVE PROCESS
Enter The Process Id That You Want To Deallocate
DEALLOCATE
Processes Input Queue
Process Id
Size Of The Process
1
212.0
2
417.0
3
112.0
4
426.0
Enter The Process Id You Want To Swap Out
Enter The Process Id You Want To Swap In
Enter The Size Of The Process You Want To Swap In
Message
processId 4 can't be allocated in memory due to its large size with respect to the holes size.
OK
Holes Information
Enter The Number Of Holes
5
Enter The Starting Address Of The Hole
Enter The Size Of The Hole
SAVE HOLE
Input Holes
Starting Address Of The Hole
Size Of The Hole
0.0
100.0
100.0
500.0
600.0
200.0
800.0
300.0
1100.0
600.0
Starting Address
Size
1100.0
212.0
100.0
417.0
1312.0
112.0
Free Table
Starting Address
Size


Worest Fit Algorithm
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Help
Enter The Number Of The Process
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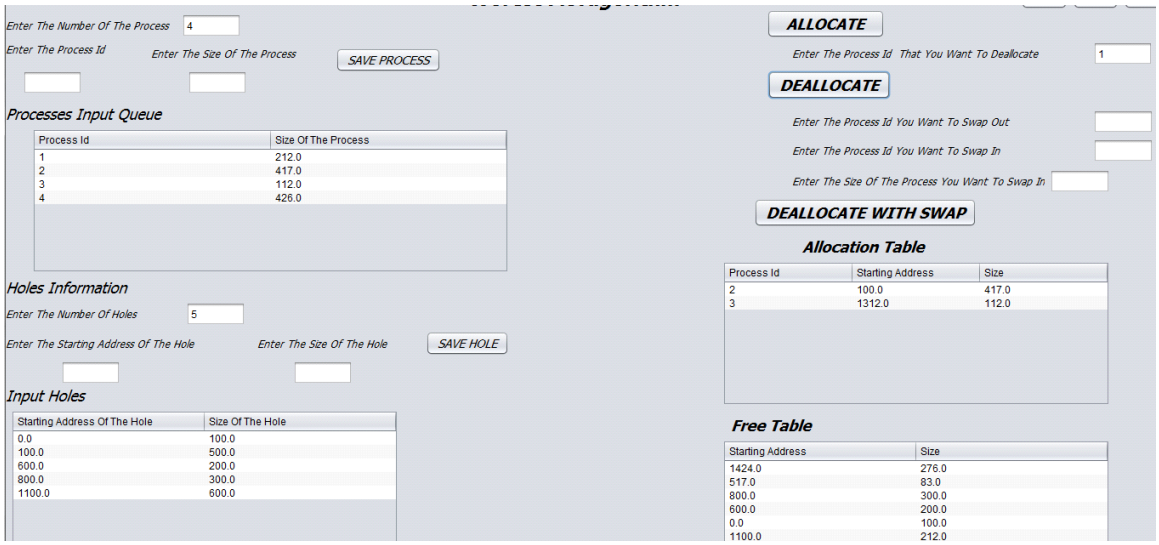
ALLOCATE
Enter The Process Id
Enter The Size Of The Process
SAVE PROCESS
Enter The Process Id That You Want To Deallocate
DEALLOCATE
Processes Input Queue
Process Id
Size Of The Process
1
212.0
2
417.0
3
112.0
4
426.0
Enter The Process Id You Want To Swap Out
Enter The Process Id You Want To Swap In
Enter The Size Of The Process You Want To Swap In
DEALLOCATE WITH SWAP
Allocation Table
Process Id
Starting Address
Size
1
1100.0
212.0
2
100.0
417.0
3
1312.0
112.0
Holes Information
Enter The Number Of Holes
5
Enter The Starting Address Of The Hole
Enter The Size Of The Hole
SAVE HOLE
Input Holes
Starting Address Of The Hole
Size Of The Hole
0.0
100.0
100.0
500.0
600.0
200.0
800.0
300.0
1100.0
600.0
Free Table
Starting Address
Size
1424.0
276.0
517.0
83.0
800.0
300.0
600.0
200.0


Enter The Number Of The Process
4
Enter The Process Id
Enter The Size Of The Process
SAVE PROCESS
Processes Input Queue
Process Id
Size Of The Process
1
212.0
2
417.0
3
112.0
4
426.0
Holes Information
Enter The Number Of Holes
5
Enter The Starting Address Of The Hole
Enter The Size Of The Hole
SAVE HOLE
Input Holes
Starting Address Of The Hole
Size Of The Hole
0.0
100.0
100.0
500.0
600.0
200.0
800.0
300.0
1100.0
600.0
ALLOCATE
Enter The Process Id That You Want To Deallocate
1
DEALLOCATE
Enter The Process Id You Want To Swap Out
Enter The Process Id You Want To Swap In
Enter The Size Of The Process You Want To Swap In
DEALLOCATE WITH SWAP
Allocation Table
Process Id
Starting Address
Size
2
100.0
417.0
3
1312.0
112.0
Free Table
Starting Address
Size
1424.0
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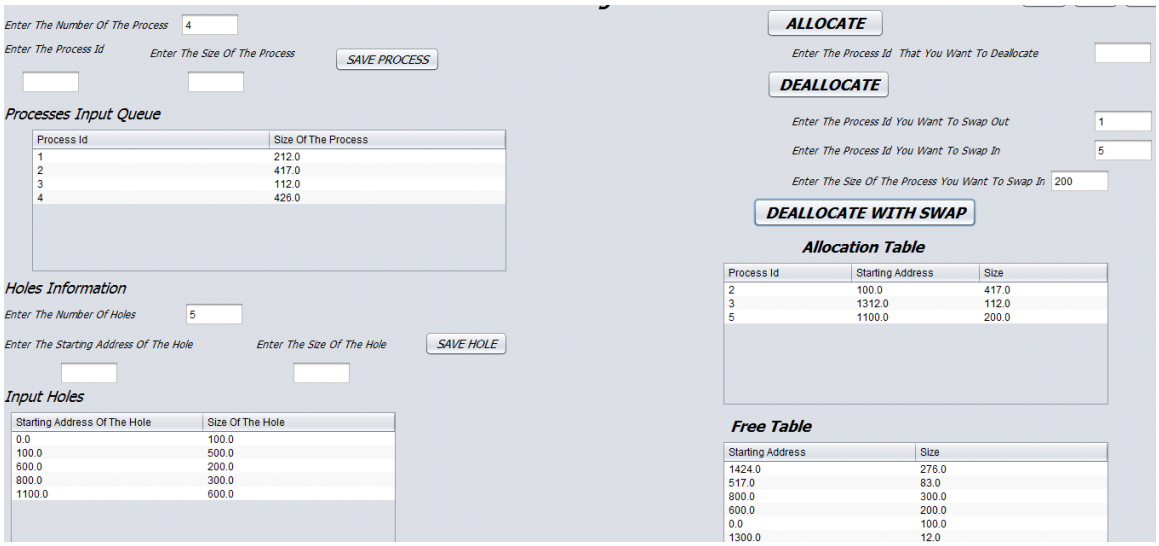
Enter The Number Of The Process
4
Enter The Process Id
Enter The Size Of The Process
SAVE PROCESS
Processes Input Queue
Process Id
Size Of The Process
1
212.0
2
417.0
3
112.0
4
426.0
Holes Information
Enter The Number Of Holes
5
Enter The Starting Address Of The Hole
Enter The Size Of The Hole
SAVE HOLE
Input Holes
Starting Address Of The Hole
Size Of The Hole
0.0
100.0
100.0
500.0
600.0
200.0
800.0
300.0
1100.0
600.0
ALLOCATE
Enter The Process Id That You Want To Deallocate
DEALLOCATE
Enter The Process Id You Want To Swap Out
1
Enter The Process Id You Want To Swap In
5
Enter The Size Of The Process You Want To Swap In
200
DEALLOCATE WITH SWAP
Allocation Table
Process Id
Starting Address
Size
2
100.0
417.0
3
1312.0
112.0
5
1100.0
200.0
Free Table
Starting Address
Size
1424.0
276.0
517.0
83.0
800.0
300.0
600.0
200.0
0.0
100.0
1300.0
12.0