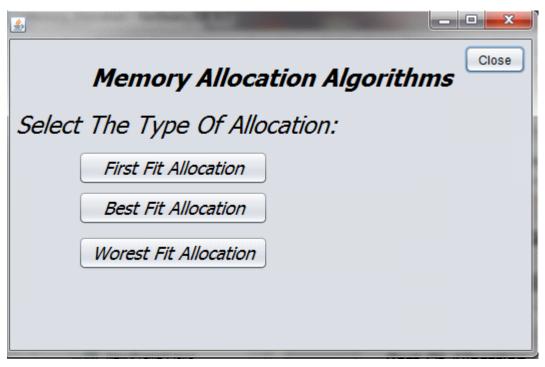
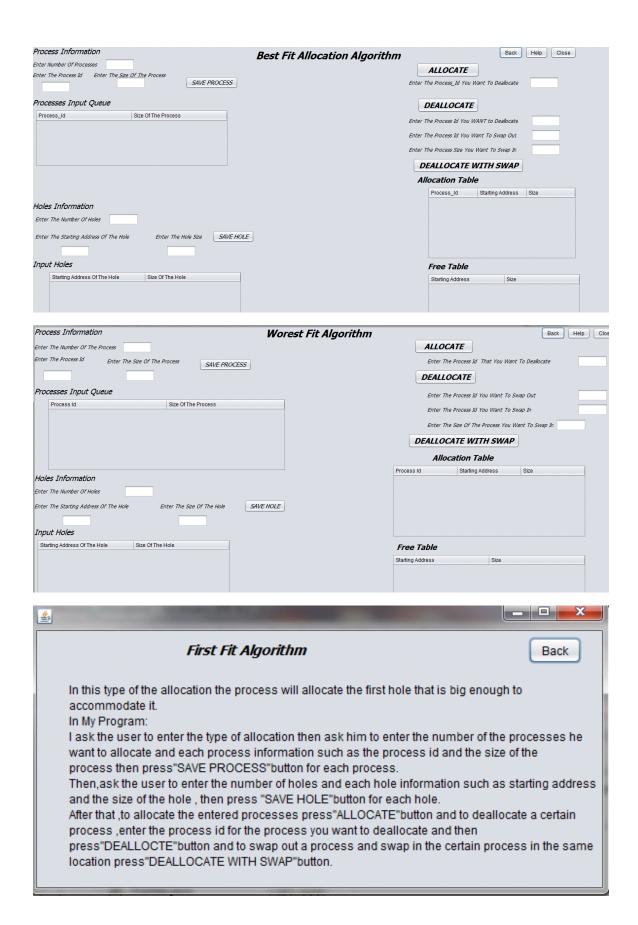
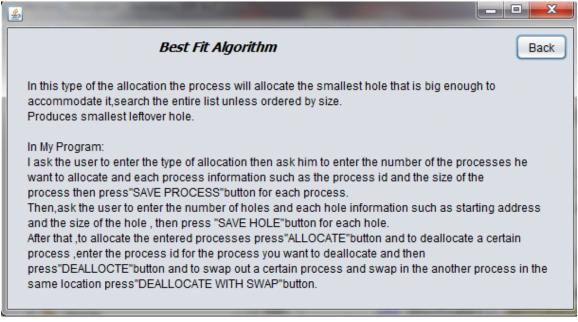
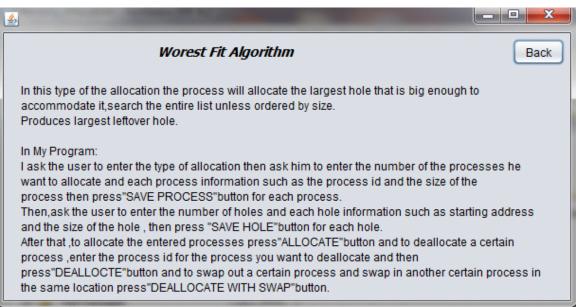
# **Memory Allocation Project**











## First Fit Allocation:

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.

#### **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.

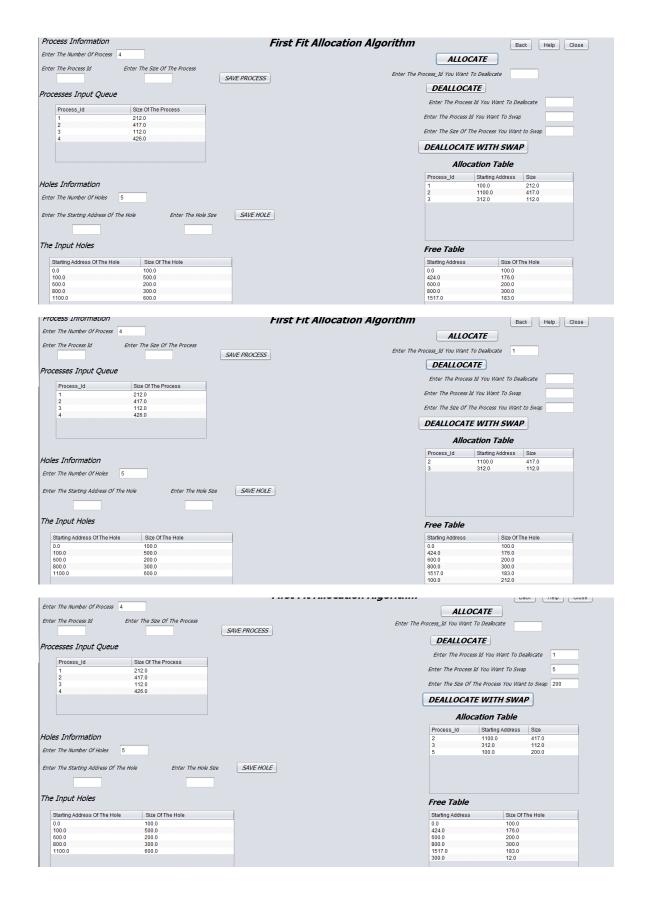
If P1 is deallocated then will be a new hole with starting address(100)and size(212KB).

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		ALLOC	4 <i>TE</i>
Enter The Process Id Enter The Size Of The Process	SAVE PROCESS Enter The	Process_Id You Want To	o Deallocate
Processes Input Queue		DEALLOCA	
Process_Id Size Of The Process		Enter The Process Id	Id You Want To Deallocate
			e Process You Want to Swap
		DEALLOCATE	WITH SWAP
		Alloca	tion Table
Holes Information		Process_Id	Starting Address Size
Enter The Number Of Holes			
Enter The Starting Address Of The Hole	SAVE HOLE		
The Input Holes		Free Table	
Starting Address Of The Hole Size Of The Hole		Starting Address	Size Of The Hole





#### **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).

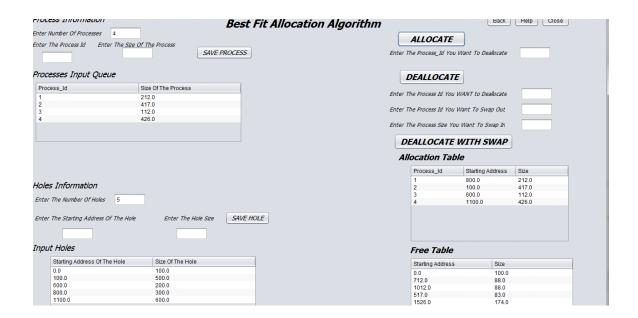
p4 allocates at hole size (600KB) with starting address (1100) and the new size for this block is(174KB) with starting address (1526).

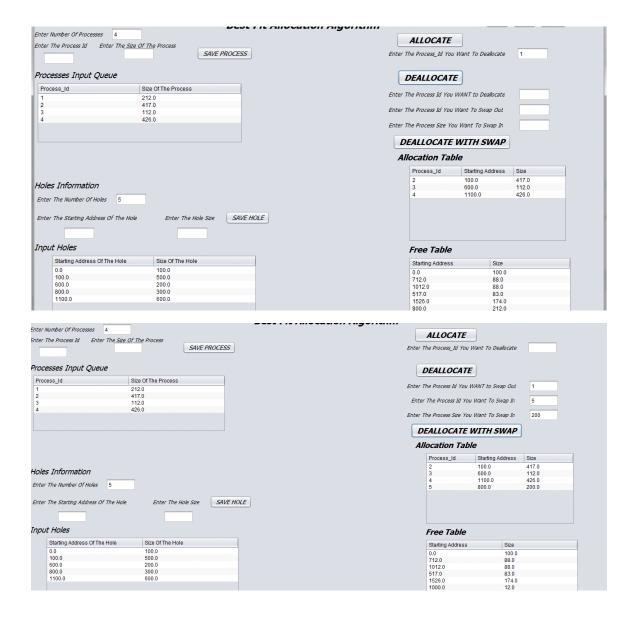
If P1 is deallocated then will be a new hole with starting address(800)and size(212KB).

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.

Process Information	st Fit Allocation Algorithm
Enter Number Of Processes	ALLOCATE
Enter The Process Id	Enter The Process_Id You Want To Deallocate
Processes Input Queue	DEALLOCATE
Process_Id Size Of The Process	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	Free Table
Starting Address Of The Hole Size Of The Hole	Starting Address Size





# **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).

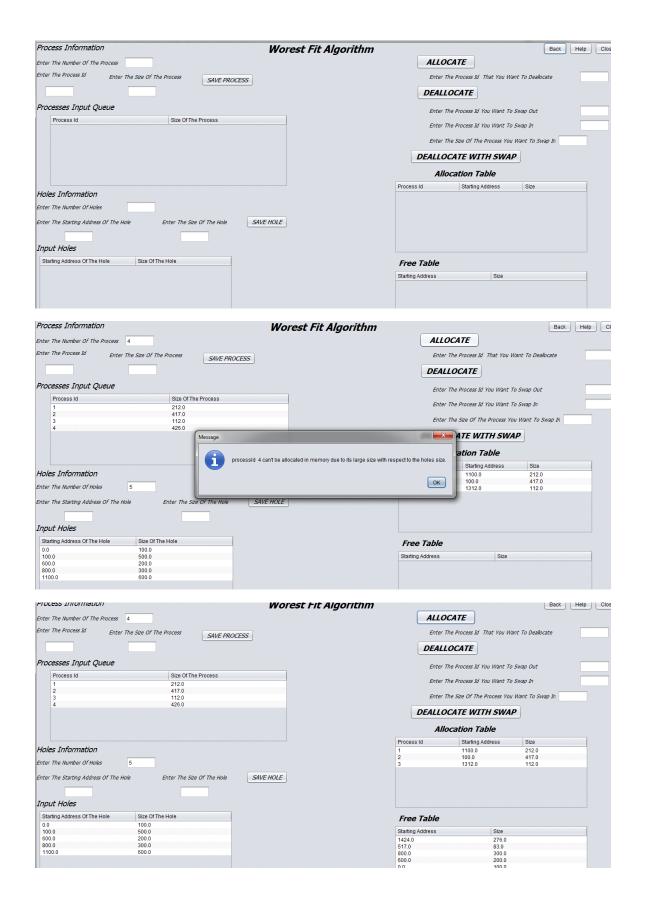
p3 allocates at hole size (388KB) with starting address (1312) and the new size for this block is (88KB) with starting address (276).

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.



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Process Id	Size Of The Process		Enter	The Process Id You Want To	Swan In
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3	112.0		Enter 7	The Size Of The Process You	Want To Swap In
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Starting Address Of The Hole	Size Of The Hole				
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600.0	200.0		1424.0	276.0	
B00.0 1100.0	300.0 600.0		517.0 800.0	83.0	
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