Operating Systems
“Mini Project 😊”

Memory Allocation

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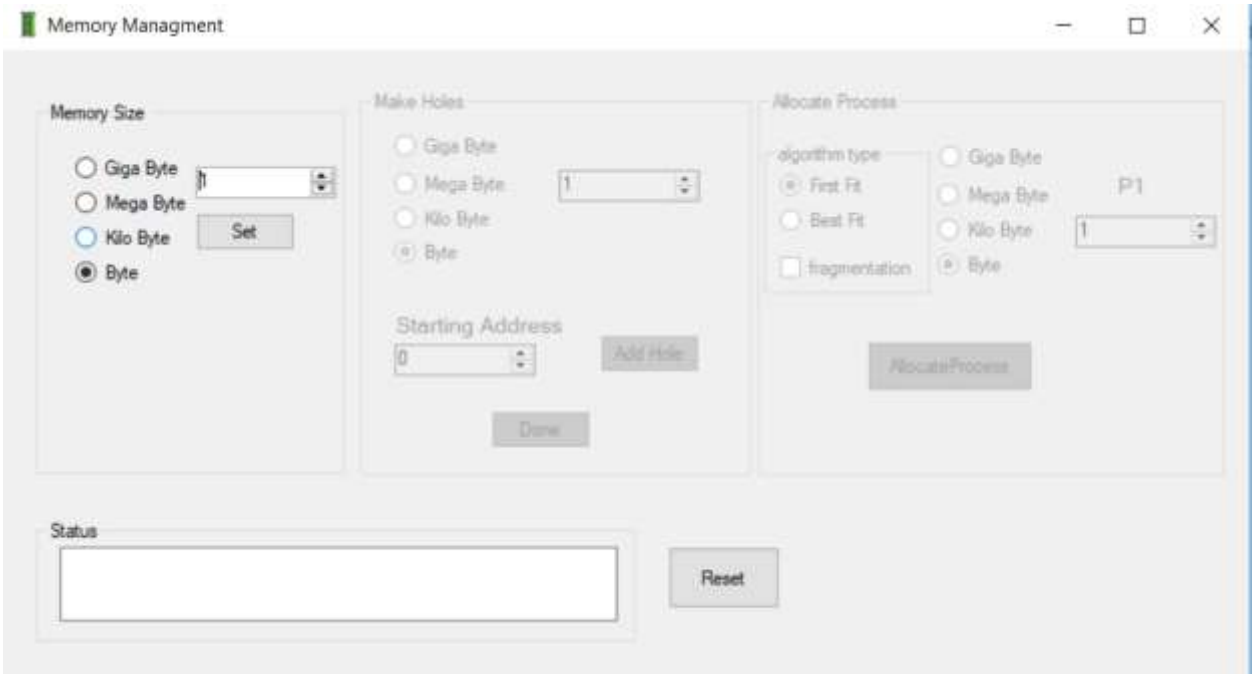
Section : 1

How the program works:

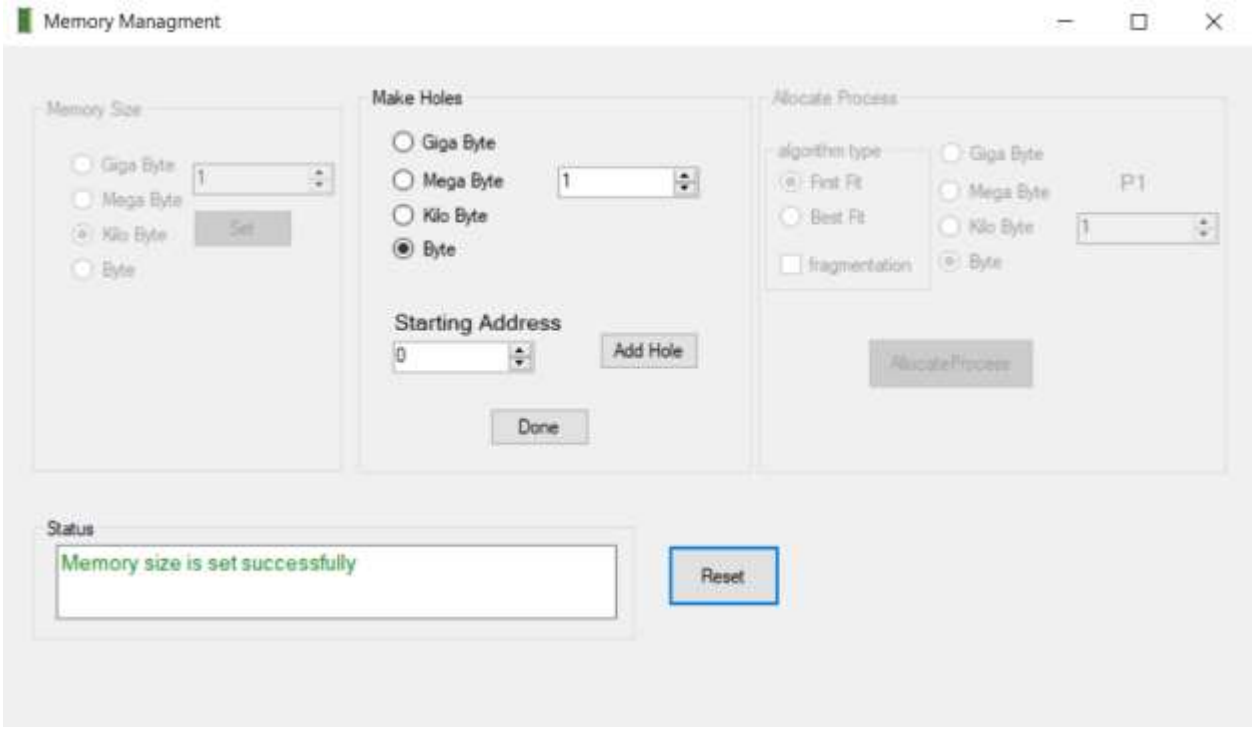
1) Choose the size of Memory.
2) State the size of a hole and its starting address then hit “add hole”.
3) Repeat step 2 as desired.
4) After finishing adding the holes click “done”.
5) You can now allocate or deallocate any process you want.
6) To deallocate any process just double click on its row -as simple as that 😉-.
7) To allocate a process choose the desired Methodology.
8) Then choose the size of the process and click ”allocate process”.
9) Any status will appear into a status box

Here is a test case for demonstration :

1) This is the initial shape of the program

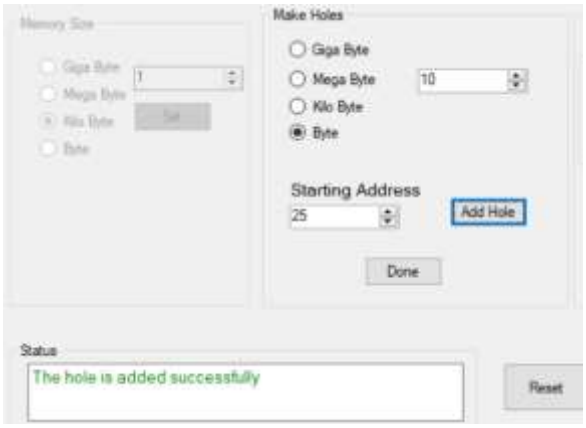


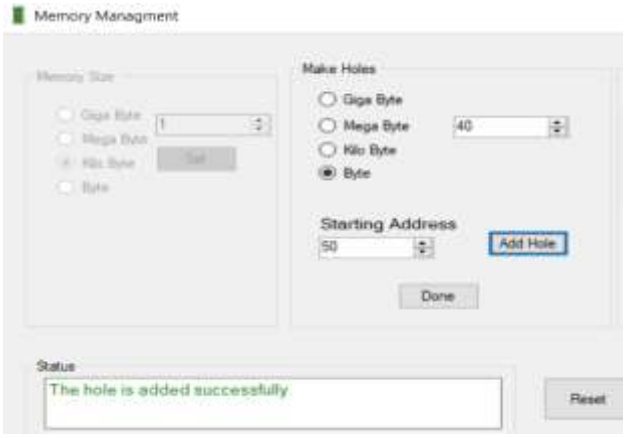
2) Set the size of memory to 1 kilobyte

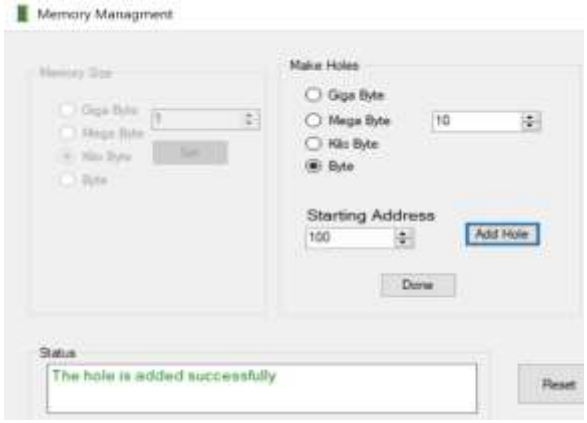


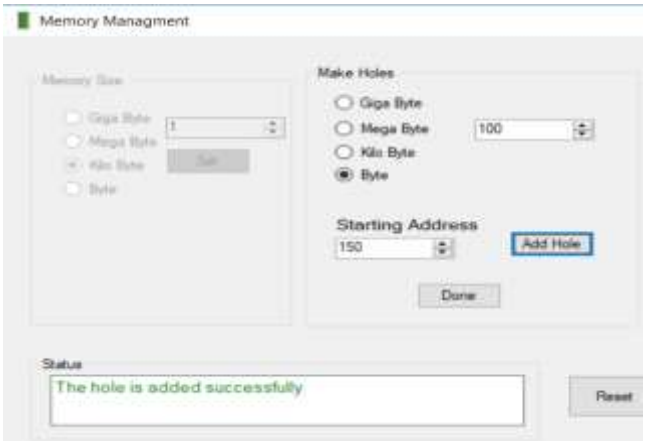
3) Adding holes

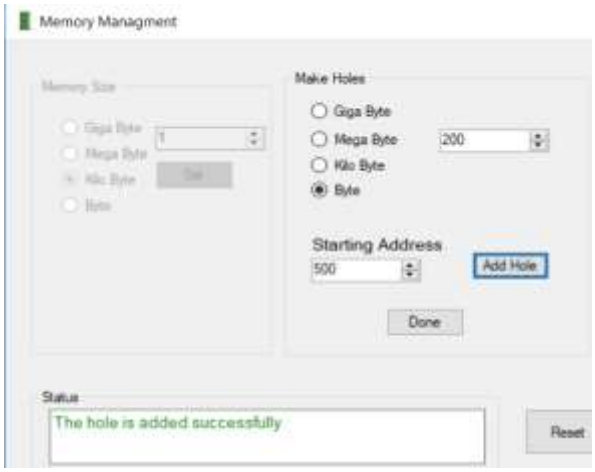
	Size	starting address	
1.	10	25	
2.	40	50	
3.	10	100	
4.	100	150	
5.	200	500	
6.	15	5	
7.	200	1000	out of memory:ex check error

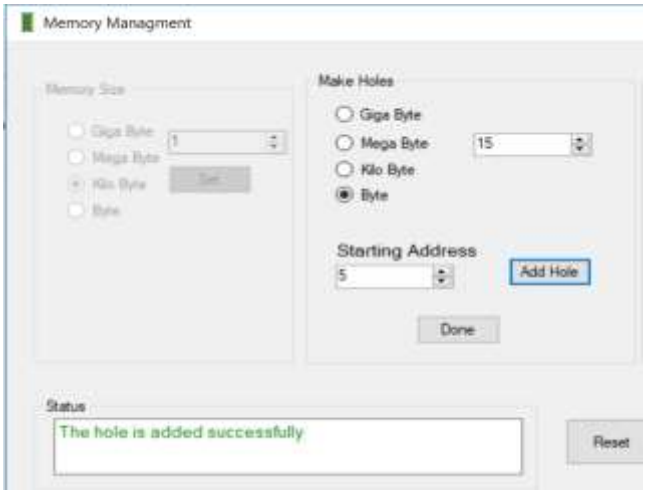

Make Holes
Giga Byte
Mega Byte
10
Kilo Byte
Byte
Starting Address
25
Add Hole
Done
Status
The hole is added successfully
Reset

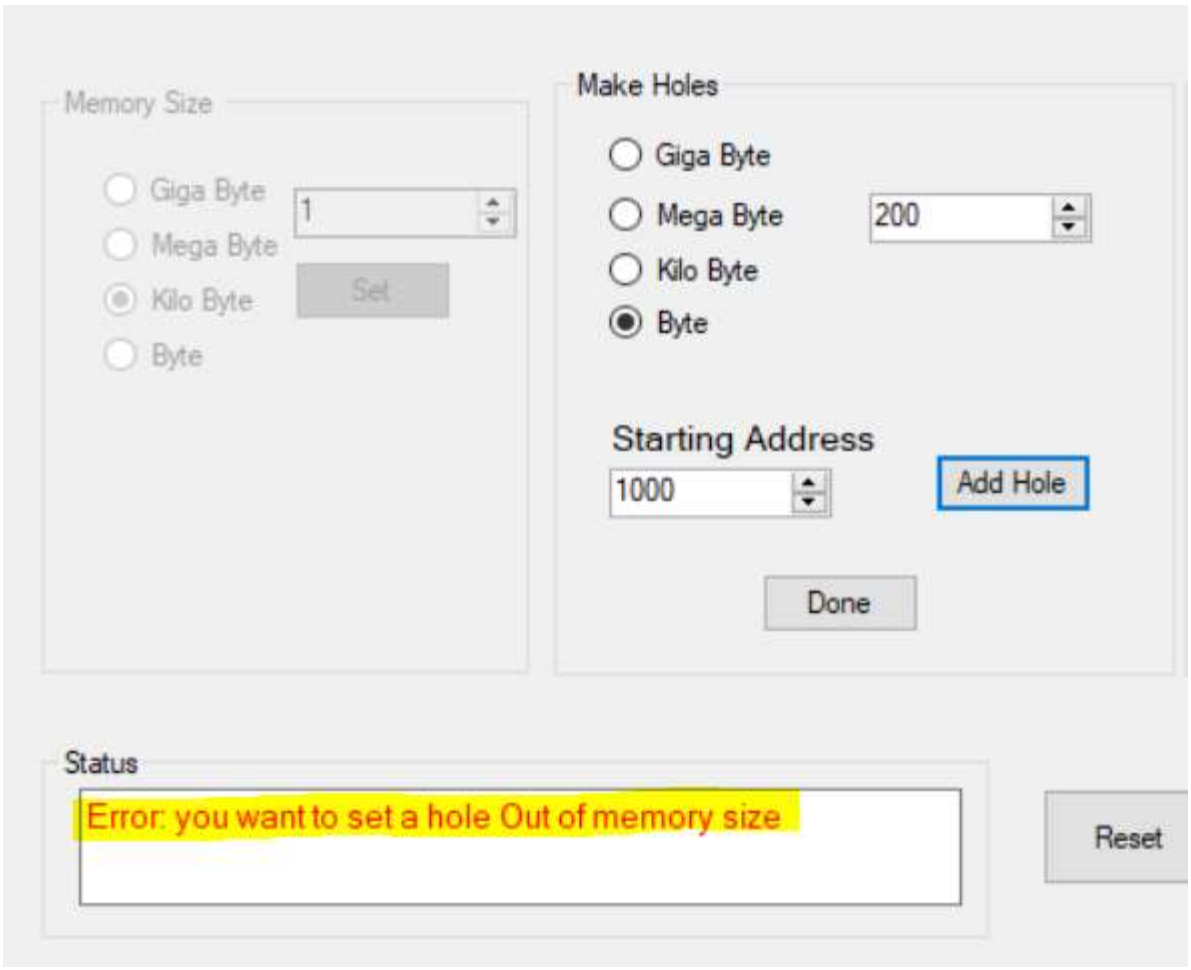

Memory Managment
Make Holes
Giga Byte
Mega Byte
40
Kilo Byte
Byte
Starting Address
50
Add Hole
Done
Status
The hole is added successfully
Reset


Memory Managment
Make Holes
Giga Byte
Mega Byte
10
Kilo Byte
Byte
Starting Address
100
Add Hole
Done
Status
The hole is added successfully
Reset

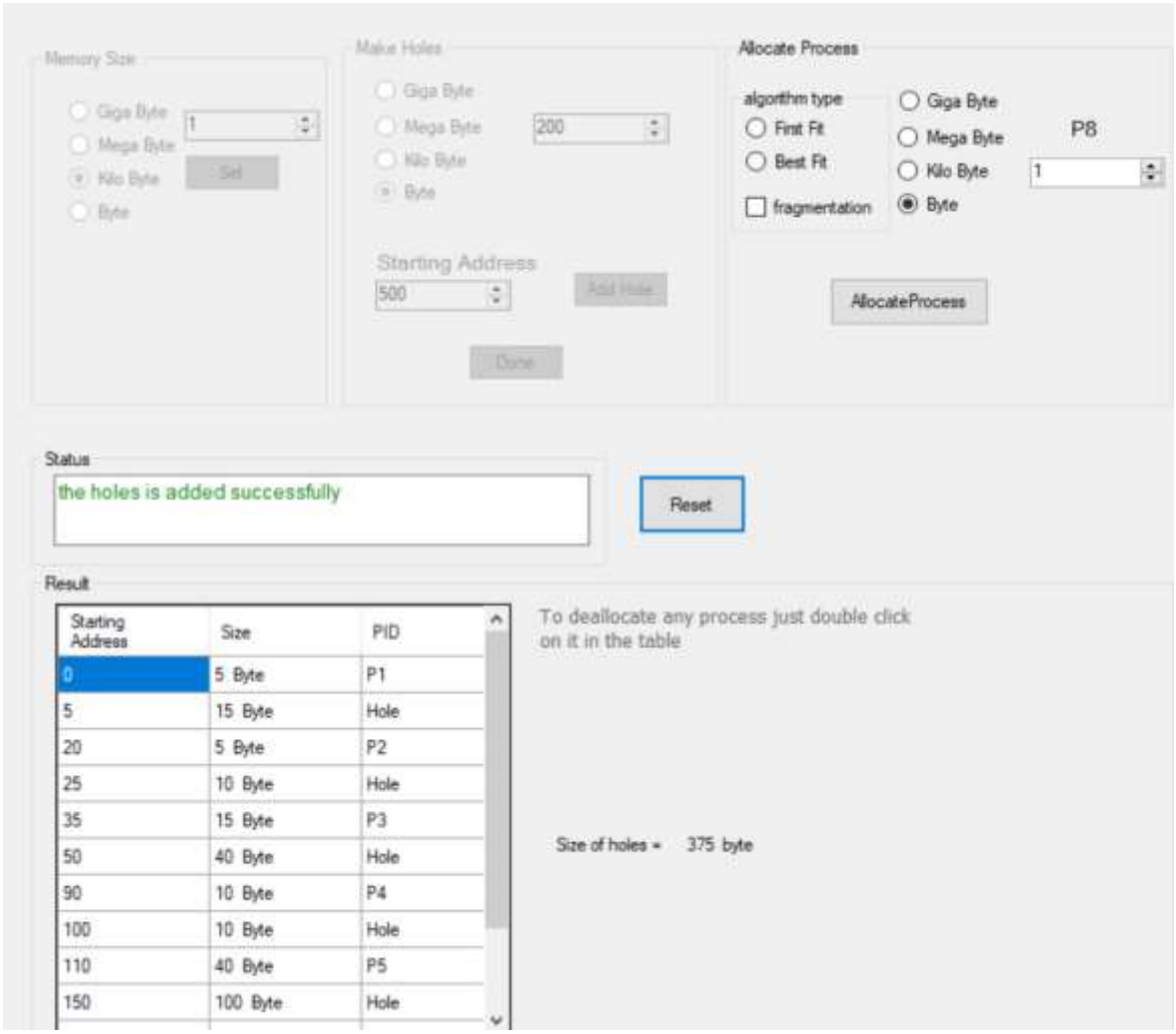

Memory Managment
Make Holes
Giga Byte
Mega Byte
100
Kilo Byte
Byte
Starting Address
150
Add Hole
Done
Status
The hole is added successfully
Reset

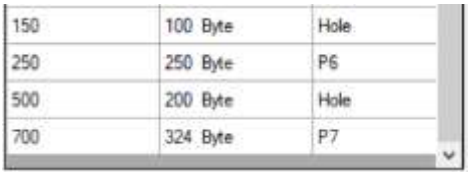

Memory Managment
Make Holes
Giga Byte
Mega Byte
200
Kilo Byte
Byte
Starting Address
500
Add Hole
Done
Status
The hole is added successfully
Reset


Memory Managment
Make Holes
Giga Byte
Mega Byte
15
Kilo Byte
Byte
Starting Address
5
Add Hole
Done
Status
The hole is added successfully
Reset

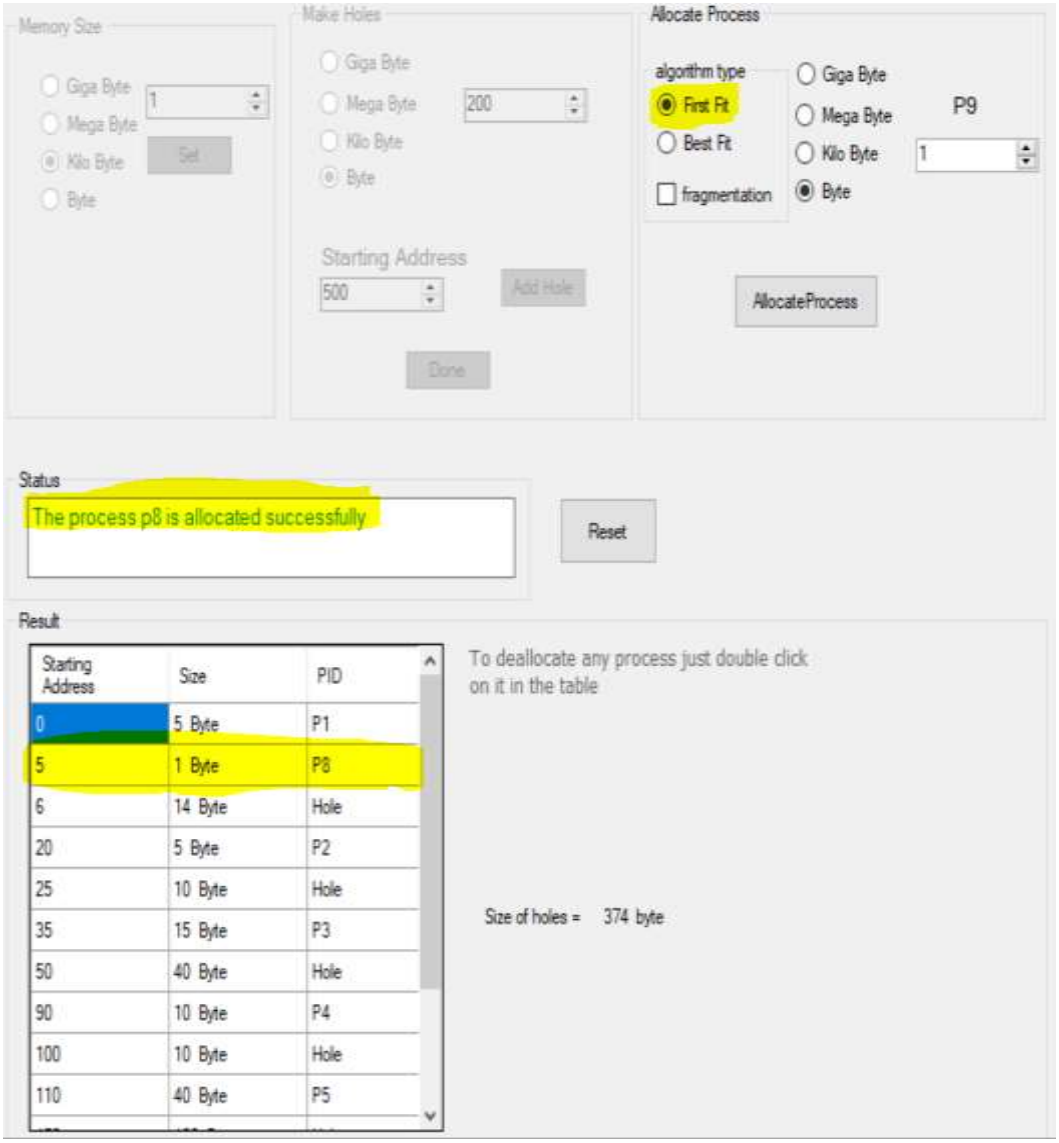

Memory Size
Giga Byte
Mega Byte
Kilo Byte
Byte
1
Set
Make Holes
Giga Byte
Mega Byte
Kilo Byte
Byte
200
Starting Address
1000
Add Hole
Done
Status
Error: you want to set a hole Out of memory size
Reset

4) After Clicking Done the shape of the memory will be





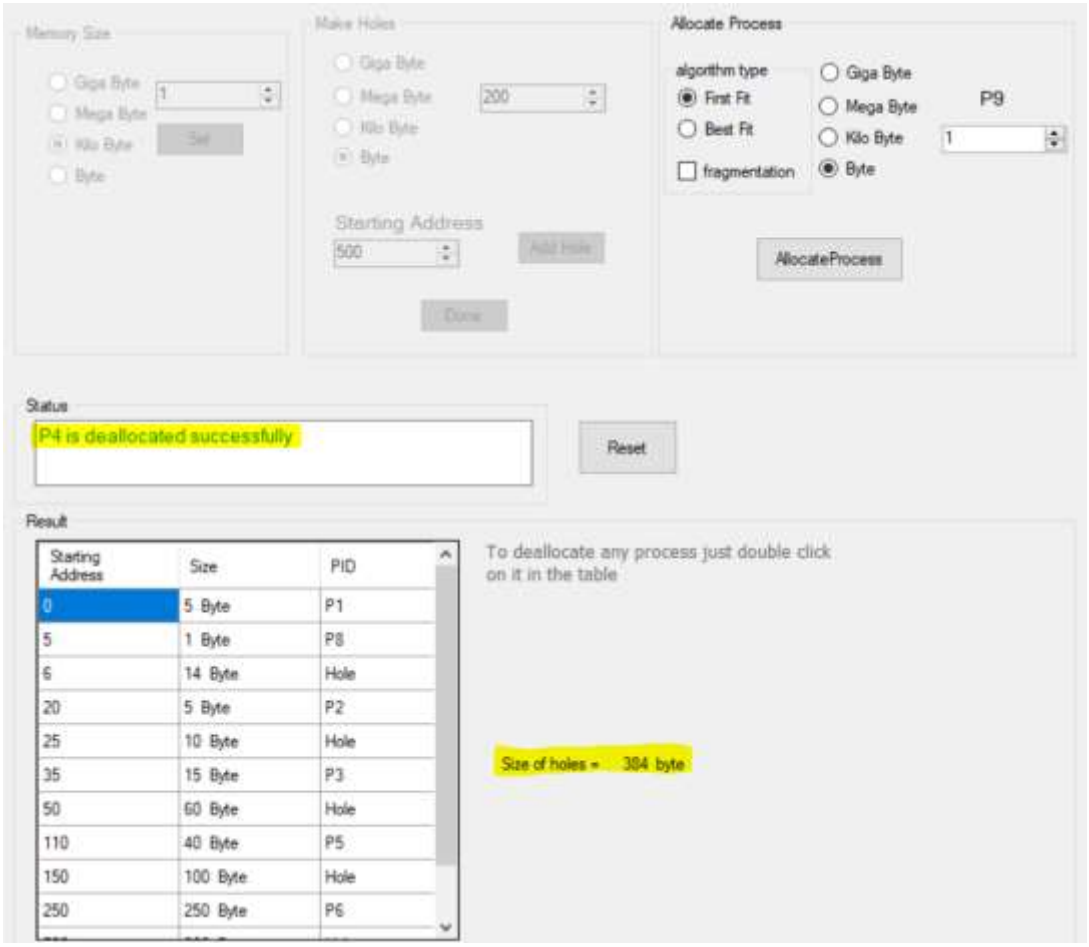
5) Allocate process P8 with size 1byte and first fit algorithm

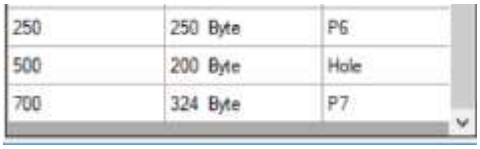


Starting Address	Size	PID
0	5 Byte	P1
5	1 Byte	P8
6	14 Byte	Hole
20	5 Byte	P2
25	10 Byte	Hole
35	15 Byte	P3
50	40 Byte	Hole
90	10 Byte	P4
100	10 Byte	Hole
110	40 Byte	P5

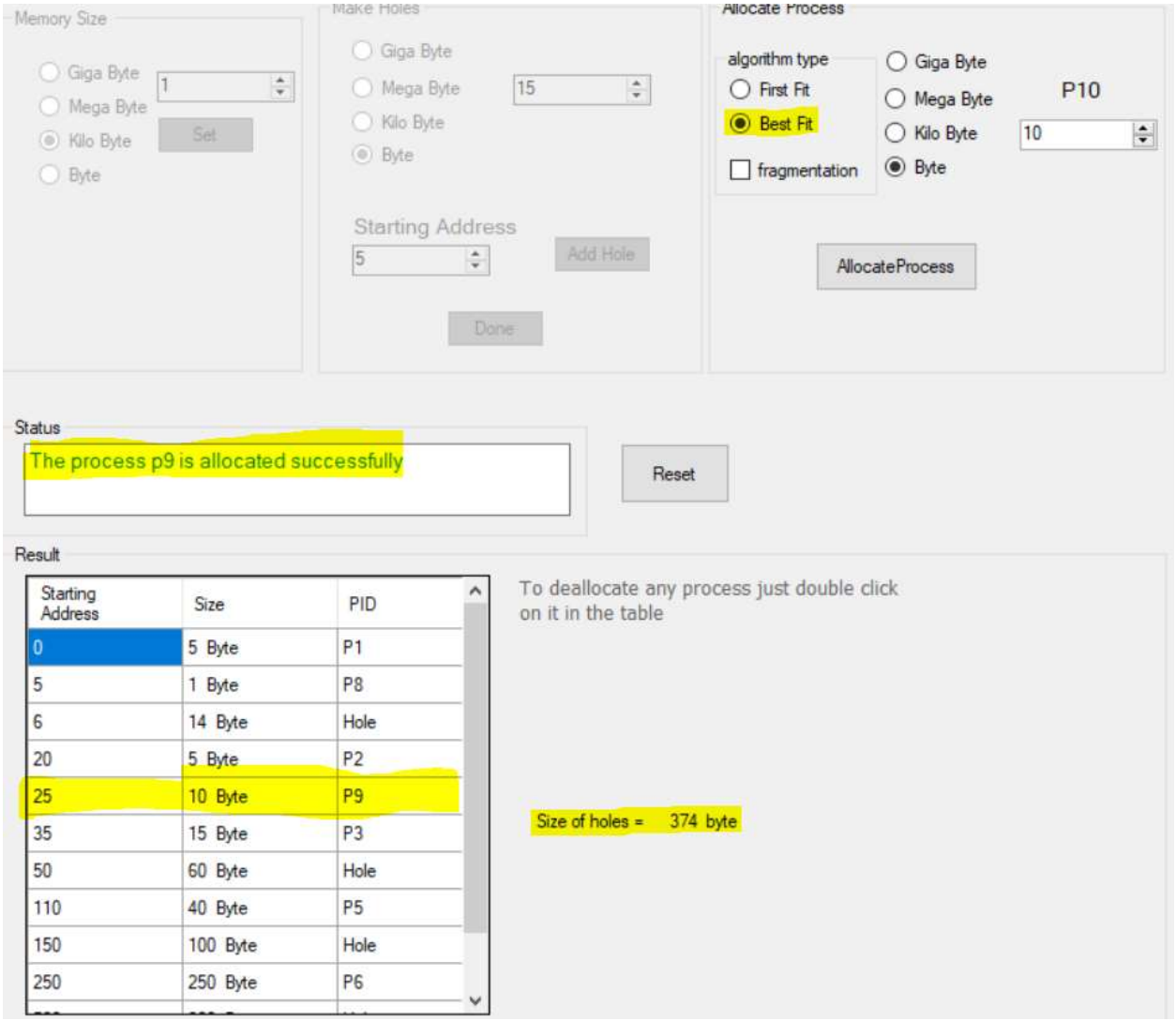
110	40 Byte	P5
150	100 Byte	Hole
250	250 Byte	P6
500	200 Byte	Hole
700	324 Byte	P7

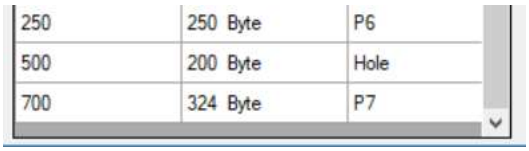
6) Deallocate P4



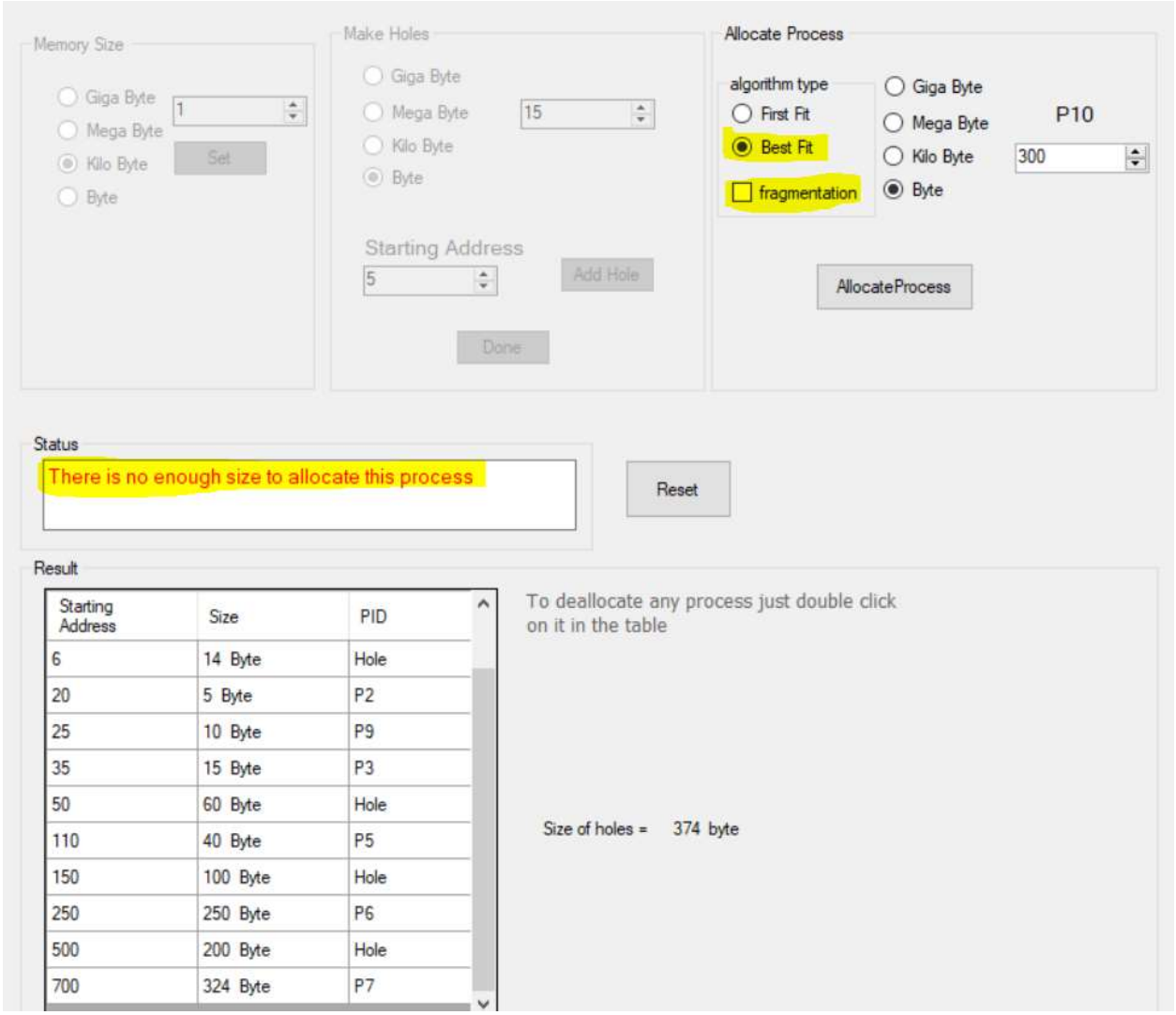


7) Allocate process P9 with size 10 byte and Best fit algorithm

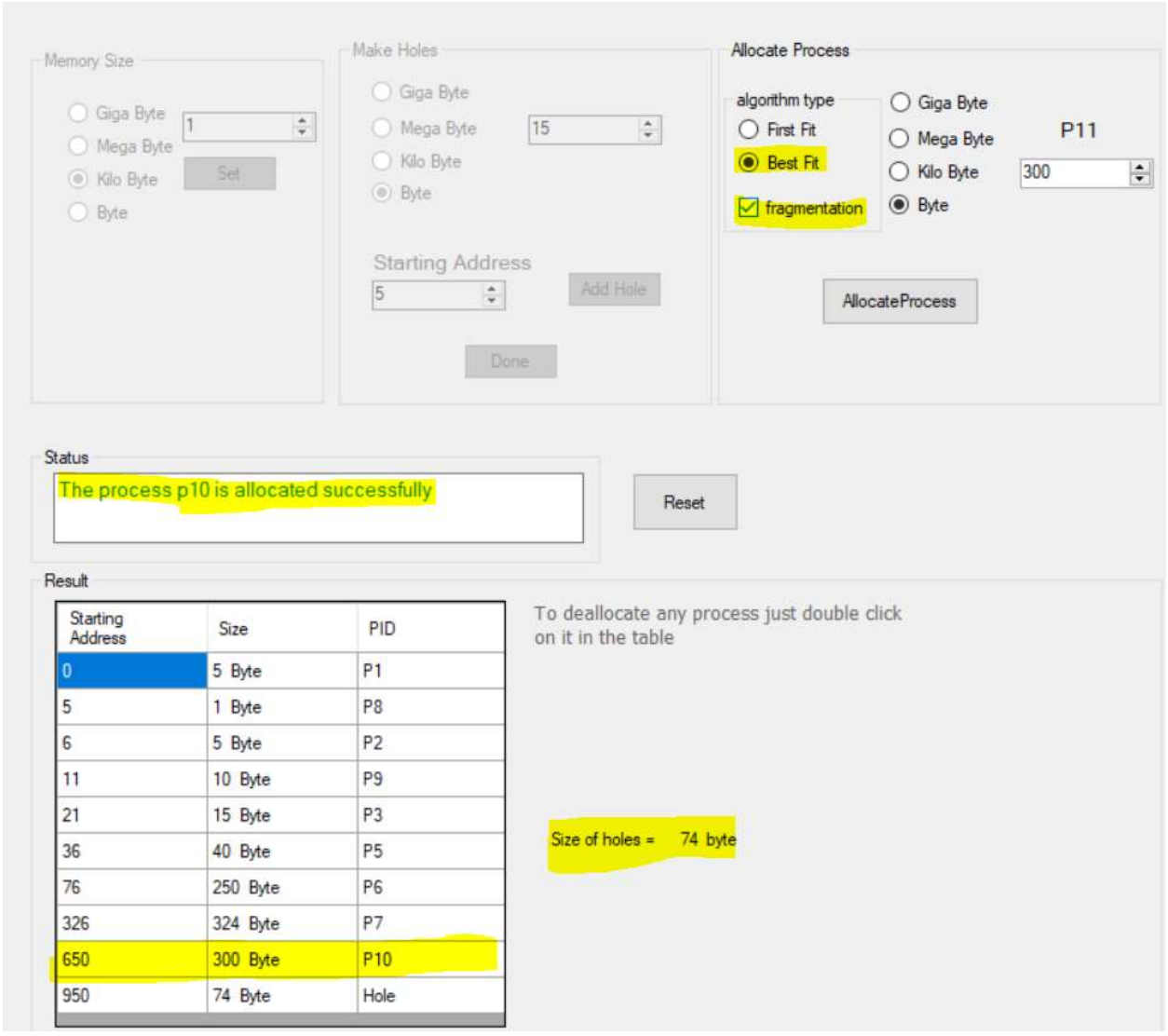




8) Allocate process P10 with size 300 byte and Best fit algorithm without fragmentation “ allocated is failed ”

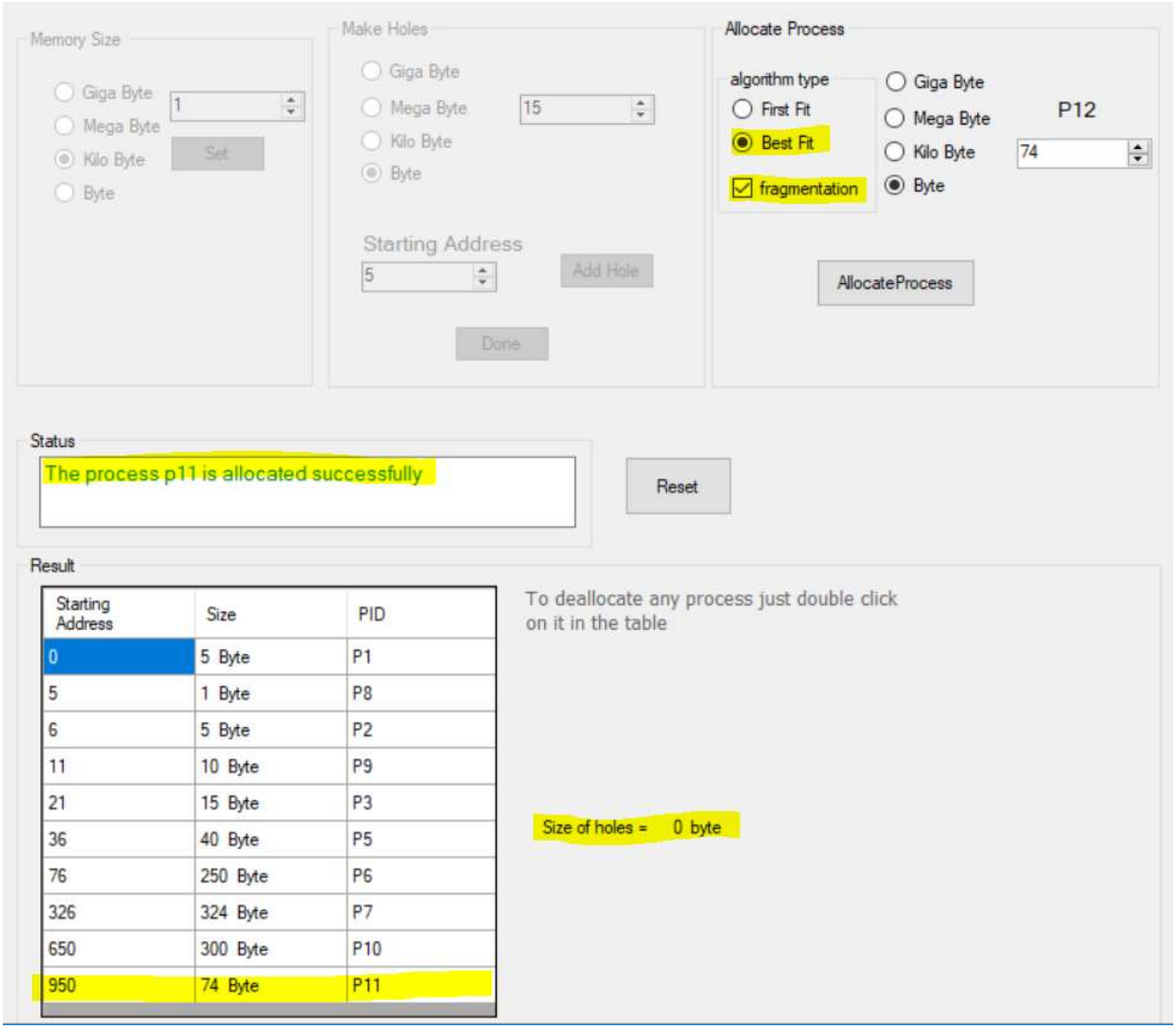


9) Allocate process P10 with size 300 byte and Best fit algorithm with fragmentation

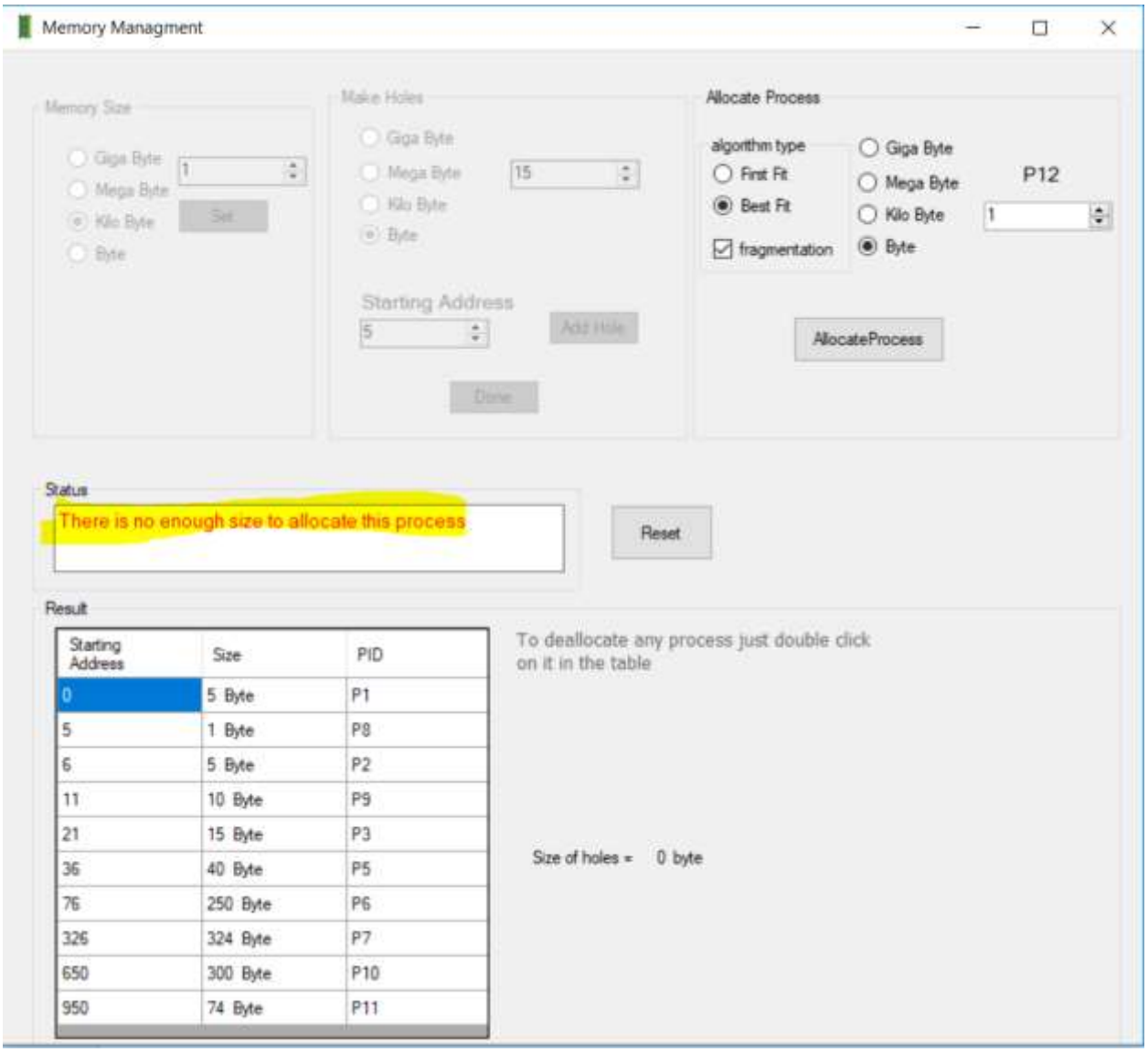


Starting Address	Size	PID
0	5 Byte	P1
5	1 Byte	P8
6	5 Byte	P2
11	10 Byte	P9
21	15 Byte	P3
36	40 Byte	P5
76	250 Byte	P6
326	324 Byte	P7
650	300 Byte	P10
950	74 Byte	Hole

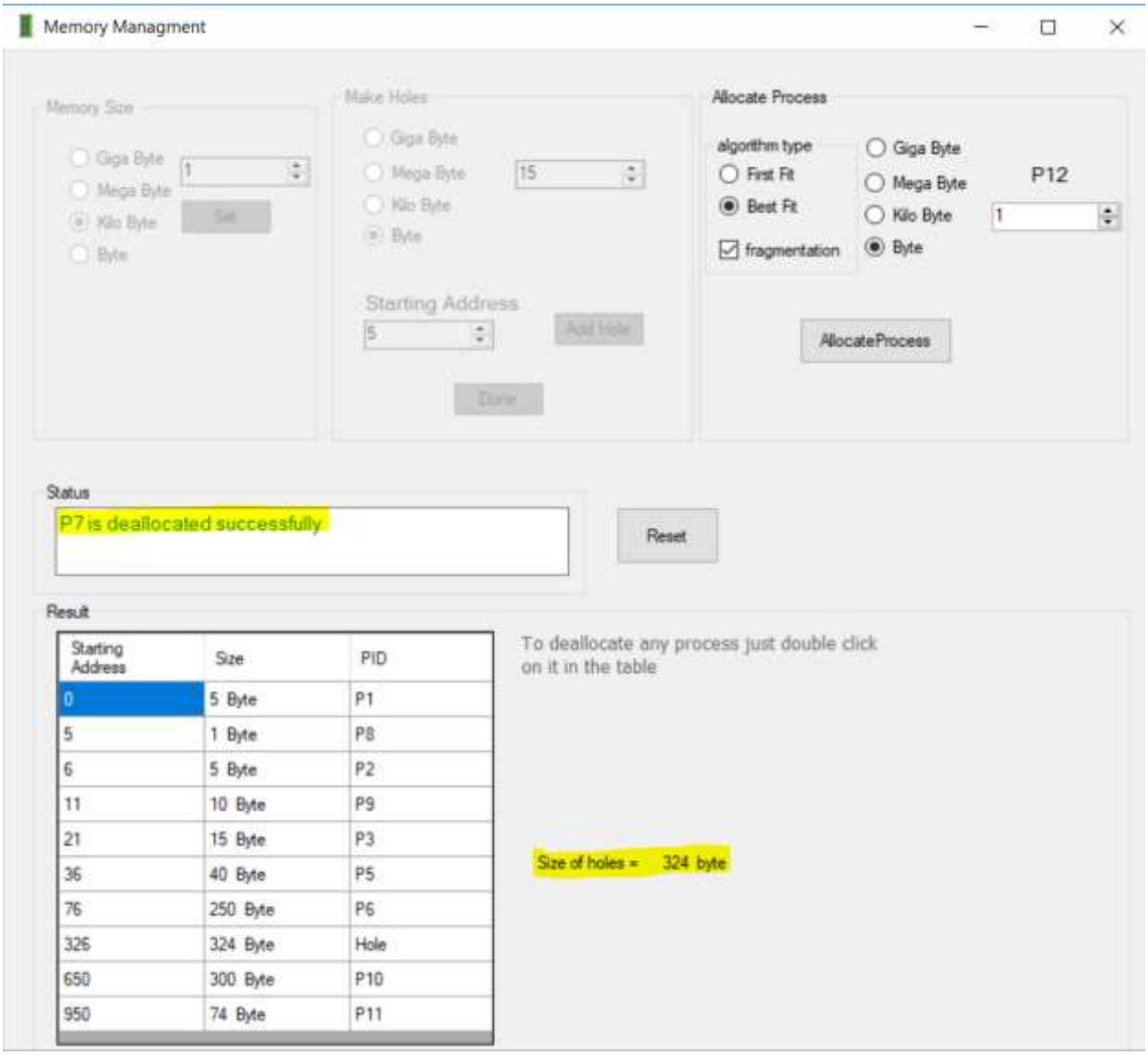
10) Allocate process P11 with size 74 byte and Best fit algorithm with fragmentation



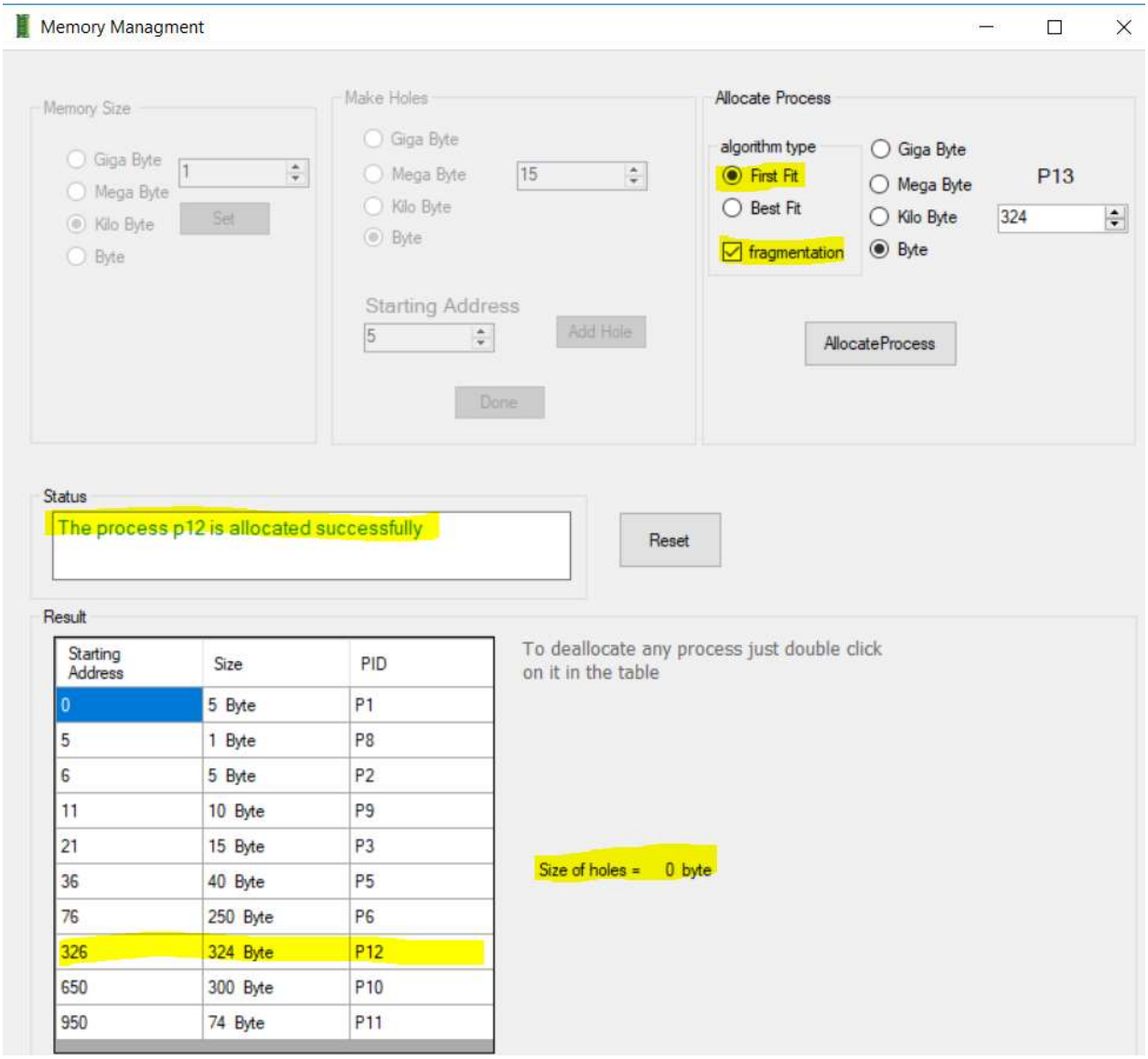
11) Allocate process P12 with size 1 byte and Best fit algorithm with fragmentation “allocated is failed”



12) Deallocate P7



13) Allocate process P12 with size 324 byte and first fit algorithm with fragmentation



14) Deallocate all processes