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Sheet #6

6.1) Best -fit Algorithm

	12	**5**	**19**	**13**	**7**	**8**	**16**
14	12	5	19	13	7	8	2
9	3	5	19	13	7	8	2
7	3	5	19	13	0	8	2
10	3	5	19	3	0	8	2

Worst -fit Algorithm

	12	**5**	**19**	**13**	**7**	**8**	**16**
14	12	5	5	13	7	8	16
9	12	5	5	13	7	8	7
7	12	5	5	6	7	8	7
10	2	5	5	6	7	8	7

First -fit Algorithm

	12	**5**	**19**	**13**	**7**	**8**	**16**
14	12	5	5	13	7	8	16
9	3	5	5	13	7	8	16
7	3	5	5	6	7	8	16
10	3	5	5	6	7	8	6

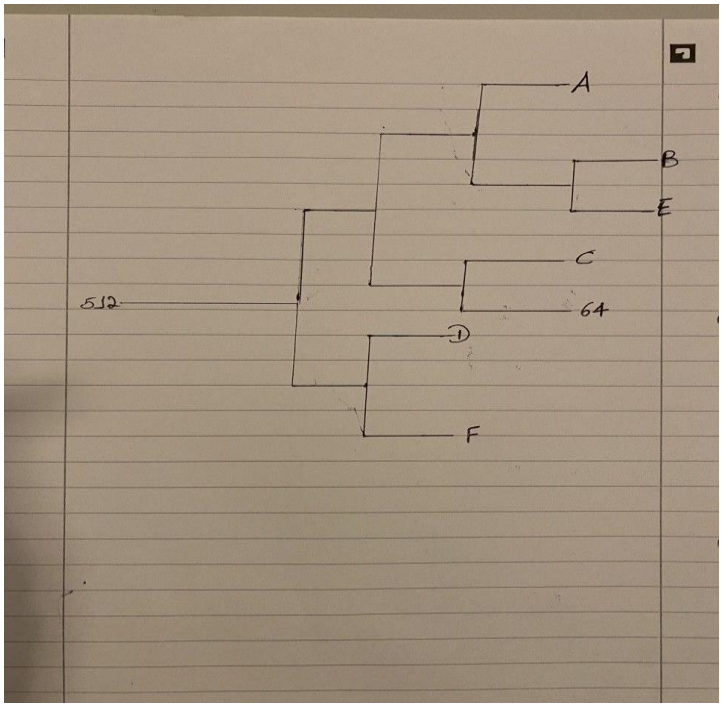
Next -fit Algorithm

	12	**5**	**19**	**13**	**7**	**8**	**16**
14	12	5	5	13	7	8	16
9	12	5	5	4	7	8	16
7	12	5	5	4	0	8	16
10	12	5	5	4	0	8	6

6.2)

A)

512						
A	**64**		**128**		**256**	
A	**B**	**32**	**128**		**256**	
A	**B**	**32**	**C**	**64**	**256**	
A	**B**	**32**	**C**	**64**	**D**	**128**
A	**B**	**E**	**C**	**64**	**D**	**128**
A	**B**	**E**	**C**	**64**	**D**	**F**



B)

A -> 64-59 =5 KiB

B->32-27=5 KiB

C->64-44=20 KiB

D->128-115=13 KiB

E->32-28=4 KiB

F->128-98=30 KiB

* Total internal fragmentation=5+5+20+13+4+30 =**77 KiB**

C) G will not be allocated because as you can see from the figure, the memory space left from D can only be merged with the space occupied by F due to the structure we have.

-And the 64 KiB space can only be merged with the space occupied by C

** Therefore, we can see that G will not be allocated

6.3) FIFO

Reference string	**1**	**2**	**3**	**4**	**1**	**1**	**4**	**2**	**1**	**2**	
Frame 0	1	1	3	3	1	1	1	1	1	1	
Frame 1	-	2	2	4	4	4	4	2	2	2	
Page Faults	*	*	*	*	*			*			**6**

Reference string	**1**	**2**	**3**	**4**	**1**	**1**	**4**	**2**	**1**	**2**	
Frame 0	1	1	1	4	4	4	4	4	4	4	
Frame 1	-	2	2	2	1	1	1	1	1	1	
Frame 2	-	-	3	3	3	3	3	2	2	2	
Page Faults	*	*	*	*	*			*			**6**

BO

Reference string	**1**	**2**	**3**	**4**	**1**	**1**	**4**	**2**	**1**	**2**	
Frame 0	1	1	1	1	1	1	1	1	1	1	
Frame 1	-	2	3	4	4	4	4	2	2	2	
Page Faults	*	*	*	*				*			**5**

Reference string	**1**	**2**	**3**	**4**	**1**	**1**	**4**	**2**	**1**	**2**	
Frame 0	1	1	1	1	1	1	1	1	1	1	
Frame 1	-	2	2	2	2	2	2	2	2	2	
Frame 2	-	-	3	4	4	4	4	4	4	4	
Page Faults	*	*	*	*							**4**

LRU

Reference string	**1**	**2**	**3**	**4**	**1**	**1**	**4**	**2**	**1**	**2**	
Frame 0	1	1	3	3	1	1	1	2	2	2	
Frame 1	-	2	2	4	4	4	4	4	1	1	
Page Faults	*	*	*	*	*			*	*		**7**

Reference string	**1**	**2**	**3**	**4**	**1**	**1**	**4**	**2**	**1**	**2**	
Frame 0	1	1	1	4	4	4	4	4	4	4	
Frame 1	-	2	2	2	1	1	1	1	1	1	
Frame 2	-	-	3	3	3	3	3	2	2	2	
Page Faults	*	*	*	*	*			*			**6**