IF.06.01 TINF Operating Systems - Free Blocks, Quotas - Exercises.

- 1. (10 %) Free Blocks Management Using a Linked List Consider a file system managing free blocks by using linked lists. The table below shows the final two blocks storing free blocks. Fill the empty tables below to show the changes which occur in the tables after the following scenarios. Highlight the changes using a color pencil.
 - (a) Five new blocks are allocated
 - (b) The block 22 is freed
 - (c) Another 5 blocks are allocated
 - (d) Another block is allocated
 - (e) Another three blocks are allocated
 - (f) Four blocks (23456, 8345345, 56, and 634534) are freed

Block #	17	18		
Next Block	18	0		
	4589	24353 98745 76345 9877 7345 34535		
	43546			
	718			
	345			
	23456			
	8345345			
	634534	154698		
	3478	967		
	56	8657		

Block #	17	18	Block #	17	18	Block #	17	18
Next Block	18	0	Next Block	18	0	Next Block	18	0
4589 43546 718 345	4589	24353		4589	24353			24353
	43546	98745		43546	98745			98745
	718	76345		718	76345			76345
	345	9877		345	9877			9877
	7345		22	7345			7345	
	34535			34535			34535	
		154698			154698			154698
		967			967	1		967
		8657			8657		415	8657
Block #	17	18	Block #		18	Block #	634534	18
Next Block		0	Next Block	×-	0	Next Block	18	0
		24353			24353			24353
		98745			98745			98745
		76345			76345	1		76345
		9877			9877			9877
		7345			7345	1 1		7345
		34535	İ		34535	Ì		34535
		154698				ĺ		23456
		967	1		1 .			834534
		17					-	56

2. Free Blocks Management — Comparision Given the two memory footprint scenarios for Free Blocks Management as presented in class. State the condition under which the linked list approach uses less space than the bitmap approach.

Wenn alle Blöcke benutzt werden, werden bei der bitmap variante die blöcke in der die freien blöcke gesperichert sind nicht effektiv genutzt.