Operating Systems 2016/17
Tutorial-Assignment 9

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Question 9.1: Memory Management Basics

a. Discuss the difference between a virtual and a physical address.

b. Explain the difference between external and internal fragmentation.

c. When is compaction a viable option to reduce external fragmentation?

Question 9.2: Segmentation

a. How does segmentation work?

b. Assume a system with 16-bit virtual addresses that supports four different segments, which uses the following segment table:

Segment Number	Base	Limit
0	0xdead	0x00ef
1	0xf154	0x013a
2	0x0000	0x0000
3	0x0000	0x3fff

Complete the following table and explain briefly how you derived your solution for each row in the table.

Virtual Address	Segment Number	Offset	Valid?	Physical Address
	3	0x3999		
0x2020				
		0x0204	yes	
			yes	0xf15f