

## Homework Assignment #8

Due: Sunday, November 14, 2021

1. Consider a logical address space of 64 pages of 1,024 words each, mapped onto a physical memory of 32 frames.
  - a. How many bits are there in the logical address?
  - b. How many bits are there in the physical address?
2. Explain the difference between internal and external fragmentation.
3. Given six memory partitions of 300 KB, 600 KB, 350 KB, 200 KB, 750 KB, and 125 KB (in order), how would the first-fit, best-fit, and worst-fit algorithms place processes of size 115 KB, 500 KB, 358 KB, 200 KB, and 375 KB (in order)? Rank the algorithms in terms of how efficiently they use memory.
4. Assuming a 1-KB page size, what are the page numbers and offsets for the following address references (provided as decimal numbers):
  - a. 3085
  - b. 42095
  - c. 215201
  - d. 2000001
5. Consider the following segment table:

<u>Segment</u>	<u>Base</u>	<u>Length</u>
0	219	600
1	2300	14
2	90	100
3	1327	580
4	1952	96

What are the physical addresses for the following logical addresses?

a. 0,430

b. 1,10

c. 2,500

d. 3,400

e. 4,112