ITBU 373, Operating Systems Homework 12

Chapter 16, *Operating Systems, Three Easy Pieces*

Readings

Read chapter 16 in the *Operating Systems, Three Easy Pieces* book.

Discussion Questions

Answer the discussion questions in writing.

1. The book notes that *segmentation* is a simple idea. Give a simple explanation of segmentation.

2. In our canonical address space we have three segments. What are they?

3. What is a *sparse address space*?

4. In the first paragraph on page 158 of the book, the book gives a verbal explanation of calculating the address of a heap segment. Give an arithmetic explanation of the calculation.

5. Describe the *explicit* approach to address segmentation.

6. Describe the *implicit* approach to address segmentation.

7. Describe in detail the manner in which address translation for the stack works. Why is this a little more complex than address translation for the code and heap segments?

8. What are *protection bits* and why are they important for code sharing?

9. What is a *segment table*?

10. What is *external fragmentation* and why does it occur?

11. (review) What is *internal fragmentation*?