ITBU 373, Operating Systems Homework 32

Chapter 40, *Operating Systems, Three Easy Pieces*

Readings

Read chapter 40 in the *Operating Systems, Three Easy Pieces* book.

Discussion Questions

Answer the discussion questions in writing.

1. Why is the topic of *data structures* important when thinking about file system implementation?

2. Why is the topic of *access methods* important when thinking about file system implementation?

3. When we begin to implement a file system, we divide the storage medium (the disk) into *blocks*. What is a block? Why do we first divide our disk into blocks?

4. What kind of information does an *inode* contain?

5. Why are *allocation structures* a required element in a file system?

6. What is a *bitmap*, and how does it assist in keeping track of the used/unused blocks in a file system?

7. What is the *superblock*, and what does it do?

8. How does an *indirect pointer* keep track of the location of data blocks? Why are indirect pointers "better" than direct pointers?

9. What factors make the use of a *multi-level-index* useful for file systems. The book lists six of them.

10. What does a *directory* contain?

11. (not specifically in the book) What is the similarity between a file and a directory? What is the difference between a file and a directory?

12. What is *free space management*, and why is it important?