

CS 411

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## File Systems

Metadata, Data placement on disk

Fragmentation

Locating a file's Blocks

Fragmentation occurs when a file's block aren't "close together"

This is impacted by block allocation strategies

DOS - when a block is requested, return the first free block.

The "distance" between the inode and the blocks also matters

The Fast File System spreads out inodes and associated data blocks into cylinder groups

This helps to keep a file's blocks "close together"

### Locating a File's blocks (Allocation)

Types of access: Sequential  
Random

1) Contiguous Allocation

2) Linked Allocation

Pointer bytes in each block

3) Indexed Allocation

- index (pointer) block in inode

- multi level index