

How to Track File's Data

Disk management

- Need to keep track of where file contents are on disk
- Must be able to use this to map byte offset to disk block
- Structure tracking a file's blocks is called an index node or **inode**
- inodes must be stored on disk, too

Things to keep in mind while designing file structure

- Most files are small
- Much of the disk is allocated to large files
- Many of the I/O operations are made to large files
- Want good sequential and good random access (what do these require?)

Straw Man : Contiguous Allocation

"Extent-based" - allocate files like segmented memory

- When creating a file, make the user pre-specify its length and allocate all space at once
- Inode contents : location and size



- ✓ Simple, fast access, both sequential and random
- External fragmentation (similar to VM)