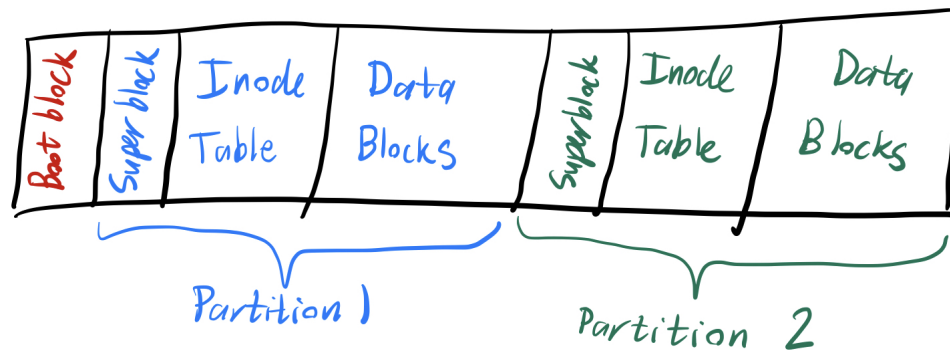


Operating Systems Supervision 3

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1 Example Sheet 4

1. The basic access control scheme is to have read, write, and execute access to each file. More advanced access control policies are implemented by allowing these permissions to be set by user, group, and world.
2. (a) As seen in the diagram below, the filesystem contains a boot block and one or more partitions. Each partition has a superblock, an inode table, and data blocks. The boot block contains the location of each filesystem (partition). The superblock contains the number of blocks and free blocks in the filesystem and other book-keeping information. Free inodes and blocks are located together with allocated ones, and a list is kept of the free ones.



- (b) An inode contains various things
- Bookkeeping information such as type, size, etc. It is important to note that the inode does NOT contain the file name or permissions, as these are stored in the directory rather than in the inode.
 - 12 direct blocks which point directly to data.
 - A single indirect block which points to 512 direct blocks, each of which point to data.
 - A double indirect block which points to 512 single indirect blocks.
 - A triple indirect block which points to 512 double indirect blocks.

