FILESYSTEMS

This assignment is about filesystems and its implementations.

In fs.h we have 5 datastructures given

- Inode -> Gives the structure of inode
- FileTable -> Gives the structure of filetable to store file details
- Dirent ->Structure to store directory entry
- Directory->Structure to store directory details
- fsystem->Structure to file systems details

and the file and directory functions

- fs_open
    - This function takes the filename and flags as argument. It iterates through the directory entries to find the details about the filename and returns the file descriptor fd given.

- fs_close
    - This function takes the file descriptor as argument and changes the state of the file to close.

- fs_create
    - This function takes the filename and mode as argument and creates the file with the given name. Creating the file involves changing the systems metadata, creating an inode for the created file and assigning a file descriptor to it. If a file is created with same name or the name of the file crosses 32 characters, error is thrown.

- fs_seek
    - This function takes the filedescriptor and offset as arguments. It updates the offset based on the new filepointer value

- fs_read
    - This function takes the filedescriptor , a buffer that holds the data and number of bytes to read as arguments. Reading primarily is getting the inode for the file descriptor, finding the number of blocks associated with the data to the required no of files to the output buffer.

- fs_write
    - This function takes the the filedescriptor , a buffer that holds the data and number of bytes to read as arguments.Writing gets the inode of the filedescriptor and writes the data into direct blocks that the inode is pointing

Lessons learned

- Learnt the importance of inode in a filesystem
- Learnt how to manage the blocks of data and how to alocate memory to them