**Operating System**

**Lab Report 12**

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**Section-6A2**

File Organization Techniques

**INTRODUCTION:**

The directory structure is the organization of files into a hierarchy of folders. In a single-level directory system, all the files are placed in one directory. There is a root directory which has all files. It has a simple architecture and there are no sub directories. Advantage of single level directory system is that it is easy to find a file in the directory. In the two-level directory system, each user has own user file directory (UFD). The system maintains a master block that has one entry for each user. This master block contains the addresses of the directory of the users. When a user job starts or a user logs in, the system's master file directory (MFD) is searched. When a user refers to a particular file, only his own UFD is searched. This effectively solves the name collision problem and isolates users from one another. Hierarchical directory structure allows users to create their own subdirectories and to organize their files accordingly. A tree is the most common directory structure. The tree has a root directory, and every file in the system has a unique path name. A directory (or subdirectory) contains a set of files or subdirectories.

**OBJECTIVES:**

• Learn to simulate the following file organization techniques

a) Single level directory

b) Two level directory

c) Hierarchical

**Application:**

File organization refers to the way data is stored in a file. File organization is very important because it determines the methods of access, efficiency, flexibility and storage devices to use. There are four methods of organizing files on a storage media. As mentioned previously, the three most common methods of file organization include sequential, indexed and relative organization. Sequential organization describes a method in which specific data records are organized in the exact order in which they have been added to the computer.

Advantage of File-oriented system:

* Backup: It is possible to take faster and automatic back-up of database stored in files of computer-based systems. ...
* Compactness: It is possible to store data compactly.
* Data Retrieval: ...
* Editing: ...
* Remote Access: ...
* Sharing:

**Issues:**

No issue found regarding this lab.

**Conclusion:**

In this lab we learn file organization techniques. Factors to be consider in FO: In choosing a file organization for a particular file in a database, we should consider seven important factors:

* Fast data retrieval.
* High amount of work for processing data input & maintenance transaction.
* Efficient use of storage space.
* Protection from failures or data loss.