**Abstract:**

-Operating system maintains a list of free disk space to keep track of all disk blocks which are not being used by any file. Whenever a file has to be created, the list of free disk space is searched for and then allocated to the new file. The amount of space allocated to this file is then removed from the free space list. When a file is deleted, its disk space is added to the free space list.

-But the problem is how to allocate space to files for effective disk space utilization and quick access.

-In this paper we have to consider major methods to manage free disk space/blocks.

**I. Introduction**

- An important function of the file system is to manage space on the secondary storage, which includes keeping track of both disk blocks allocated to files and the free block available for allocation.

-The main problems in allocating space to files are:

-Effective utilization of disk space.

-Fast accesses of files

-Management of disk blocks is a familiar problem that we have encountered and discussed in relation to main memory management. But, secondary storage introduces two additional problems:

-Slow disk access time and

-Fast accesses of files

In spite of that many considerations are similar to both environments, particularly contiguous and non-contiguous allocation of the files. Each method has its advantages and disadvantages.

-Two widely used allocation techniques are contiguous and non-contiguous (Indexing and chaining).

**II. Disk Allocation Methods**

The direct-access of disks and keeping files in adjacent areas of the disk is highly desirable. But the problem is how to allocate space to files for effective disk space utilization and quick access. Also, as files are allocated and freed, the space on a disk becomes fragmented. The major methods of allocating disk space are:

1. Continuous Allocation

2. Linked Allocation

3 Index Allocation