

Dropbox like Storage

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What is dropbox and its cons&pros

Dropbox is the most popular cloud storage system on the market and it continues to improve its features. Dropbox allows users to move files, such as images and video, off their computers and onto a database in the cloud. Furthermore, it lets users save space and share files quickly

Pro: Automatic file backup, Advanced software integration, Offline working capabilities

Con: Lack of elite level security, limited search function

Project Objectives

In this project, we are going to create a dropbox-like data storage system which could result in less storage capacity and increased productivity.

Dropbox-like storage in this project should accept the following functions:

- Creating a local file system
- Loading and encoding of text files
- Retrieving back and decoding of text files
- Listing of loaded files
- Deleting of text files

Programming language:c++

Data Structure we may use

B-Trees :

1. Reduces the number of reads made on the disk
2. B Trees can be easily optimized to adjust its size (that is the number of child nodes) according to the disk size
3. It is a specially designed technique for handling a bulky amount of data.

Long structured merge tree

1. Better performance with fast-growing data and sequential writes
2. No fragment penalty

```
BtreeSearch(x, k)
    i = 1

    // n[x] means number of keys in x node
    while i ≤ n[x] and k ≥ keyi[x]
        do i = i + 1
    if i ≤ n[x] and k = keyi[x]
        then return (x, i)
    if leaf [x]
        then return NIL
    else
        return BtreeSearch(ci[x], k)
```

Local Storage VS Cloud Storage

reference

<https://www.guru99.com/b-tree-example.html>

https://www.speedb.io/blog-posts/02-lsm-vs-b-tree-v2?utm_term=log%20structured%20merge%20tree&utm_campaign=Search++Blog+Post+Keywords&utm_source=adwords&utm_medium=ppc&hsa_acc=2467911778&hsa_cam=18709606441&hsa_grp=144503888044&hsa_ad=630792107498&hsa_src=g&hsa_tgt=kwd-341839572471&hsa_kw=log%20structured%20merge%20tree&hsa_mt=p&hsa_net=adwords&hsa_ver=3&gclid=Cj0KCQiAg_KbBhDLARIsANx7wAzJ-yQEz0LgZr74o4eKiEx277BWmMgfUZ3vUIHJAB_ezSBkZwGlv30aAnNrEALw_wcB