Project 2.2

Revision 0

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Chapter 1

Class Index

1.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 2

Class Documentation

2.1 Block Struct Reference

Public Attributes

- bool **occupied**
- int * **arr**
- int **arrSize**

The documentation for this struct was generated from the following file:

- FileAllocManager.hpp

2.2 File Struct Reference

Public Attributes

- std::string **name**
- int **size**
- Block * **indexBlock**

The documentation for this struct was generated from the following file:

- FileAllocManager.hpp

2.3 FileAllocManager Class Reference

Public Member Functions

- FileAllocManager ()
- ~FileAllocManager ()
- void clear ()
- std::vector< unsigned int > addFile (std::string filename, int filesize)
- bool deleteFile (std::string filename)
- int seekFile (std::string filename, int blocknumber) const
- std::vector< std::string > listFiles () const
- std::vector< unsigned int > printDisk () const
- unsigned int numOccupiedBlocks () const
- const LinkedList< File > & getDirectory () const

2.3.1 Constructor & Destructor Documentation

2.3.1.1 FileAllocManager()

```
FileAllocManager::FileAllocManager ( )
```

Seed the random number generator and set default values

2.3.1.2 ~FileAllocManager()

```
FileAllocManager::~FileAllocManager ( )
```

Clear all files from the directory and deallocate the resources belong to the files

2.3.2 Member Function Documentation

2.3.2.1 addFile()

```
std::vector<unsigned int> FileAllocManager::addFile (
            std::string filename,
            int filesize )
```

Add a new file to the directory and allocate the required number of blocks to the file if the disk has enough unoccupied blocks.

Parameters

filename	- a filename to add to the directory
filesize	- the size of the file in KiB

Returns

indices of the blocks allocated to the file, starting with the index block, empty vector if unable to add the file

2.3.2.2 clear()

```
void FileAllocManager::clear ( )
```

Clear all files from the directory and deallocate the resources belong to the files

2.3.2.3 deleteFile()

```
bool FileAllocManager::deleteFile (
            std::string filename )
```

Delete a file from the directory and deallocate all the blocks belong to this file

Parameters

filename	- a file of filename to delete from the directory

Returns

whether the file could be deleted or not

2.3.2.4 getDirectory()

```
const LinkedList<File>& FileAllocManager::getDirectory ( ) const  [inline]
```

get method to access to the directory

Returns

- the directory of fiels

2.3.2.5 listFiles()

```
std::vector<std::string> FileAllocManager::listFiles ( ) const
```

List all the file names in the directory

Returns

list of filenames in the directory, in reverse order of when they were added

2.3.2.6 numOccupiedBlocks()

```
unsigned int FileAllocManager::numOccupiedBlocks ( ) const  [inline]
```

Return the total number of occupied blocks on disk

Returns

occupiedBlocks - total number of occupied blocks on dis

2.3.2.7 printDisk()

```
std::vector<unsigned int> FileAllocManager::printDisk ( ) const
```

Retruns the list of all occupied blocks on disk

Returns

indices of allocated blocks, in ascending order

2.3.2.8 seekFile()

```
int FileAllocManager::seekFile (
            std::string filename,
            int blocknumber ) const
```

Read file name and the index to storage block to seek and print out which block number that corresponds to on the disk

Parameters

filename	- a filename to seek on disk
blocknumber	- a block index of the file to seek its position on disk

Returns

index of the storage block on the disk corresponding to block number for the given file, -1 if invalid input

The documentation for this class was generated from the following file:

- FileAllocManager.hpp

Index