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الفرقة: الثالثة
سكشن:3

Commands in program

➔**Command: help**
This command helps us to know information about any command.

➔**Command: quit**
This command quits the program.

➔**Command: cls**
This command clears the console app.

➔**Command: cd**
This command changes the current directory to the desired path.

➔**Command: md**
This command creates a directory.

➔**Command: rd**
This command removes a directory.

➔**Command: dir**
This command shows all directories in the current directory.

➔**Command: rename**
This command changes the name of a file or a directory.

➔**Command: import**
This command imports a file from your pc to the virtual disk.

➔**Command: export**

This command exports a file from the virtual disk to your pc.

➔**Command: copy**

This command moves a file inside the virtual disk.

➔**Command: type**

This command displays the content of a text file.

The project consists of six classes

(1) class Virtual Disk.

We have a class called (Virtual_Disk) ,It represents the hard disk

This class has some methods: -

public static void initialize()

➔ Checks if the virtual disk already exists, or creates and initializes it if not

public static void mk_file()

➔It is responsible for creating the file if it does not exist with the size of 1 megabyte by filling this file with (1024) zeros, (4*1024) "*" and (1019*1024) '#'.

public static void write_block(byte[] data, int index)

➔ This method has two parameters, the first is the data to be written and the second is where the data is written. This function writes data to the file.

public static byte[] get_block(int index)

➔ This method has one parameter, and it returns the data written in the block with the specified index

(2) class FAT Table

It contains an array fat_table with size 1024 of type integer, which indicates free or busy blocks. (0 for free else busy)
We have a class called (Fat_Table)

This class has some methods: -

public static void initialize_fat)(
This method initializes the first five indices in the fat table with1

public static int[] get()
➔Reads the fat_table from the file and return it

public static void print()
➔Prints the fat_table in the console (usually used for testing)

public static void write()
➔ Writes the fat table in the virtual disk starting from the second block.

public static int available_block()
➔Returns the index of the first free block.

public static int get_next(int index)
➔ Returns the value in the specified index from the fat table.

public static void set_next(int index, int value)
➔ Sets a value in the specified index in the fat table.

public static int available_blocks()
➔Counts the number of free blocks and returns this number.

public static int get_free_space()
➔Returns the total free space (1024* the number of free blocks)

(3) class directory

We have a class called (directory)
It represents files and directories and it contains two variables, the first is a list which stores the files and directories of another directory and the second is parent represents the parent of this directory.

This class has some methods: -

public directory get_dirctory()

➔Returns the data of this directory

public void write_directory()

➔Writes the directory after converting it to bytes in the file.

public void read_direcotry()

➔Reads the directories from the file.

public int search_directory(string name)

➔Search for a directory with the specified name and returns its index
(Or -1 if not found).

public void update_content(directory_entry d)

➔Updates directory details.

public void delete_directory()

➔Deletes this directory form the file

(4) class Directory_entery

It represents files or directories, and it describes each one with five variables

1. name: represents the name of the file/directory
2. attr: represents the type(directory/file)
3. empetyfile: free space
4. First_cluster: represents the first available block in fat_table
5. Size: represents the size of the directory/file

This class has some methods: -

public byte[] convert_TO_BYTE()

Converts the directory to bytes and return it

public Directory_Entry get_directory_entry(byte[] data)

➔Convert the bytes in the files to the original values of this directory and returns it.

(5) class File_entery

We have a class called a (file_entry)
This class contains some methods: -
It represents the files and their content.

public void writeFile()

➔Writes the content in the file

public void readFile()

➔Reads the content from the file

public void deleteDirectory()

➔Deletes the file from the file

public void update_content(file_entry d)

➔Updates file details in the file

(6) class commands

We have a class called a (commands) this class contains seven functions

Each function executes one command that we discussed at the beginning of this document.

-help -quit

-rd -md

- cls -cd

-dir -copy

-rename -import

-export -type