Pamantasan ng Lungsod ng Valenzuela
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College of Engineering and Information Technology
Department of Information Technology

Platform Technology
(OS, Networking, User Familiarization)

FINALS ACTIVITY 3

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BSIT 3-3

FINAL ACTIVITY 3

1. Discuss in your own words the functions of a file manager?

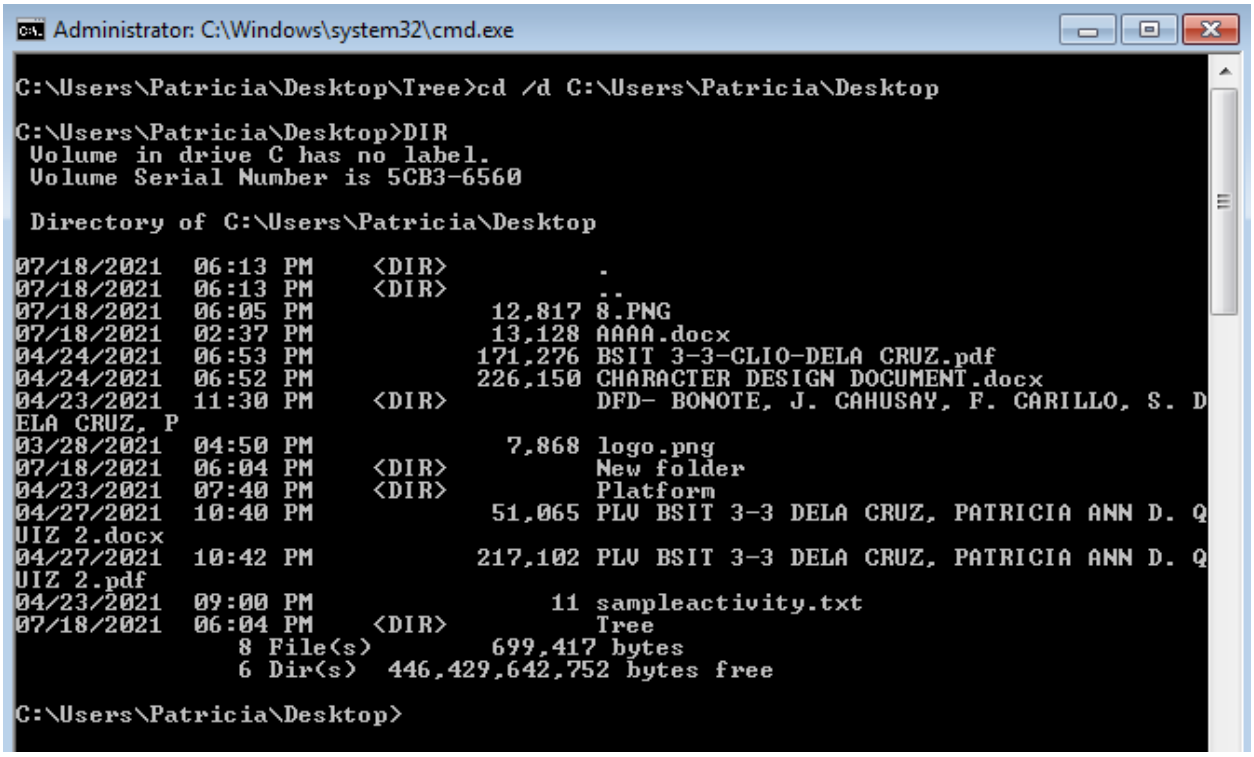
   A file manager's functions include allowing the end-user to handle files and folders using a user interface. A file manager's most common operations on files include creating, renaming, copying, transferring, and deleting.

2. Discuss in your own words the file organization technique?

   The file organization strategy refers to how information is stored in a file as well as how it is accessed.

3. Where can you find the details(elements) of a specific file? What details are commonly presented? How do you access the other details? (Explain in your own words). Provide an example of a file structure and describe the details given?

   - We can get information about a certain file by right-clicking it and selecting properties. The file name, type of file, location, size used, size on disk, date created, date edited, date accessed, and attributes are all typical details. I use the command prompt to get the rest of the information.



   The location of the files is determined. Each files name, extension name, size of the files, and the date and time of the files the moment the files exist in the computer are shown. The total number of files used and the total byte size of all files and the bytes free are also shown.

4. Create a table showing the description of the access methods using the format below

Access Method	Key Points	How is search Done	Type of applications where it is effective (give concrete examples)	How is a new record added?
File	Scan all records in the file that match a predicate of the form attribute value	File is not sorted on any attribute; just goes to result via arrival time.	The Search feature of the File Explorer of Windows computer	Enters the system after the previous records, files are sorted via arrival time.
Sequential	Simplest access method, data is accessed one record right after another record in an order.	When using read command, it move ahead pointer by one	Spotify playlist	When using write command, it will allocate a space and move the pointer to the end of the file.
Indexed Sequential	Built upon a sequential access method provided an index as keys for each file	Same as sequential but each file has index that the pointer displays	YouTube Playlist shows how many songs in the playlist and displays which index is current playing	Same as sequential but also increments the total index and assigns one for the new record.
Indexed	Can be exhaustive	Search matching	Student Record	A unique key for

	index or partial index. The former contains an entry for every record in file while the latter contains entries to record where field of interest other than the key field exists.	index and display the corresponding record.	Management System that uses Student ID as the index for each student record (PLV's Registrar, UP's SAIS, UST's SRM etc.)	index is added for every new record
Harsh/Direct	Based on a disk model of a file, such that it is viewed as a numbered sequence of blocks or records. It allows arbitrary blocks to be read or written	File is viewed as a numbered sequence of block or record. Thus, we may read block 14 then block 59 and then we can write block 17. There is no restriction on the order of reading and writing for a direct access file.	Hard Drive	For every new record, it will be assigned to a block in the end or a new block if the last block is full.

5. Research on the common schemes used in defining the logical structure of a directory. These schemes are:

5,1 single-level directory

- Is the simplest directory structure. In it, all files are contained in the same directory which makes it easy to support and understand. A single level directory has a significant limitation, however, when the number of files increases or when the system has more than one user. Since all the files are in the same directory, they must have a unique name. if two users call their dataset test, then the unique name rule violated.
- Advantages:
  - Since it is a single directory, so its implementation is very easy.
  - If the files are smaller in size, searching will become faster.
  - The operations like file creation, searching, deletion, updating are very easy in such a directory structure.
- Disadvantages:
  - There may chance of name collision because two files can not have the same name.
  - Searching will become time taking if the directory is large.
  - This cannot group the same type of files together.

5.2 Two-level directory

- each user has their own user files directory (UFD). The UFDs have similar structures, but each lists only the files of a single user. system's master file directory (MFD) is searches whenever a new user id=s logged in. The MFD is indexed by username or account number, and each entry points to the UFD for that user.
- Advantages:
  - We can give full path like /User-name/directory-name/.
  - Different users can have the same directory as well as the file name.
  - Searching of files becomes easier due to pathname and user-grouping.
- Disadvantages:
  - A user is not allowed to share files with other users.
  - Still, it not very scalable, two files of the same type cannot be grouped together in the same user.

5.3 Three-structured directory

- A tree structure is the most common directory structure. The tree has a root directory, and every file in the system has a unique path.
- Advantages:

- Very general, since full pathname can be given.
- Very scalable, the probability of name collision is less.
- Searching becomes very easy, we can use both absolute paths as well as relative.

- Disadvantages:
  - Every file does not fit into the hierarchical model, files may be saved into multiple directories.
  - We cannot share files.
  - It is inefficient, because accessing a file may go under multiple directories.

5.4 Acrylic graph directories

- An acyclic graph is a graph with no cycle and allows us to share subdirectories and files. The same file or subdirectories may be in two different directories. It is a natural generalization of the tree-structured directory.
- It is used in the situation like when two programmers are working on a joint project and they need to access files. The associated files are stored in a subdirectory, separating them from other projects and files of other programmers since they are working on a joint project so they want the subdirectories to be into their own directories. The common subdirectories should be shared. So here we use Acyclic directories.

5.5 General graph directories

- In general graph directory structure, cycles are allowed within a directory structure where multiple directories can be derived from more than one parent directory.
- The main problem with this kind of directory structure is to calculate the total size or space that has been taken by the files and directories.

6. Pick one operating system and discuss it's file management?
   - Windows Explorer is a file management program provided with Windows 7. The file structure in Windows Explorer if you set up a folder on the hard drive for each module of the CK Advanced Word Processing Class and subfolders in each module for data files, materials from instructor, and solutions. Files relating to each of these areas would be stored in the appropriate folder. Effective file management involves a number of tasks including creating folders, renaming folders and files, and copying, moving, and deleting folders and files. These tasks can be accomplished using Windows Explorer or using the Save As dialog box in applications such as Word, Excel, and PowerPoint

7. Research on the issues involved in the allocation.

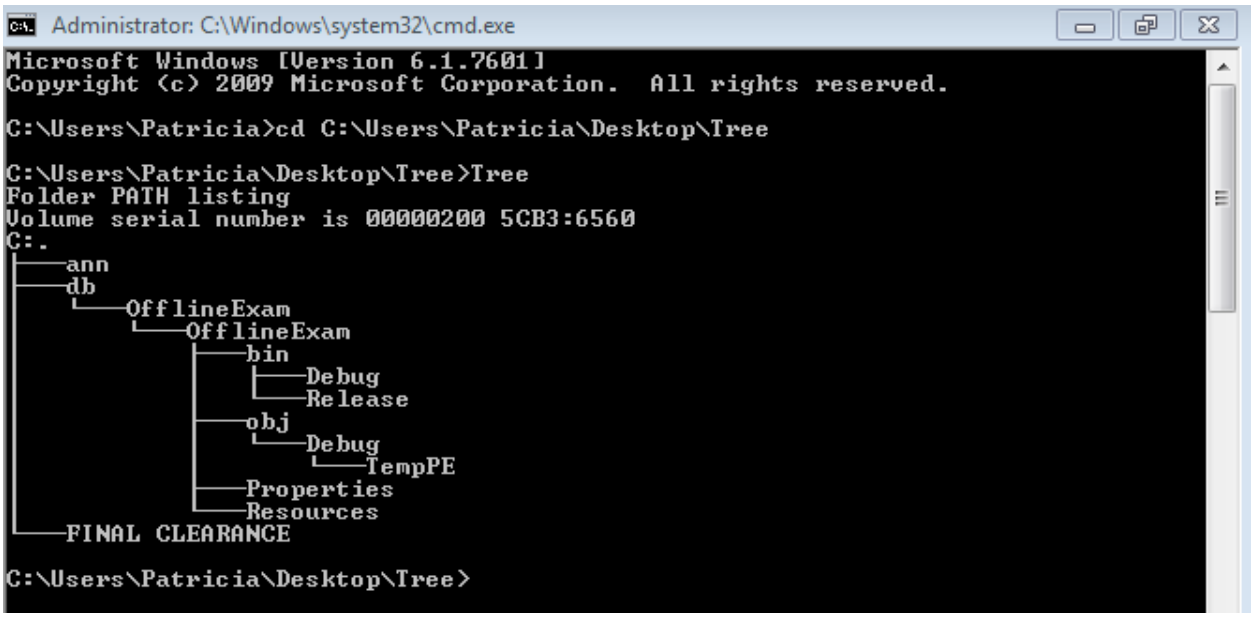
- The basic problem in managing memory is knowing when to keep the data it contains, and when to throw it away so that the memory can be reused. This sounds easy, but is, in fact, such a hard problem that it is an entire field of study in its own right. In an ideal world, most programmers wouldn't have to worry about memory management issues. Unfortunately, there are many ways in which poor memory management practice can affect the robustness and speed of programs, both in manual and in automatic memory management.

  Typical problems include:
  Premature frees and dangling pointers – Many programs give up memory, but attempt to access it later and crash or behave randomly. This condition is known as a premature free, and the surviving reference to the memory is known as a dangling pointer. This is usually confined to manual memory management.

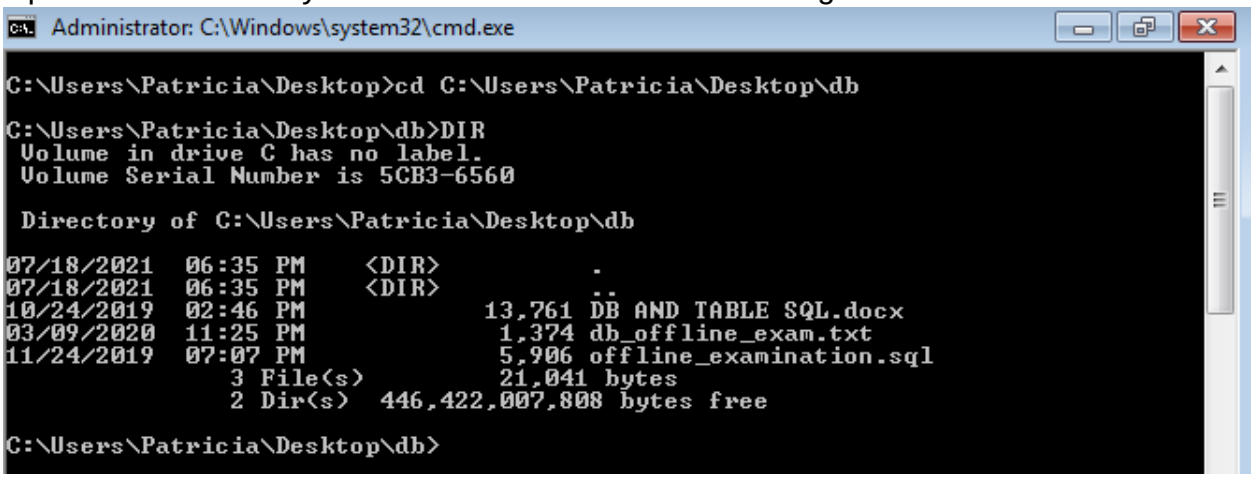
  Memory leak – Some programs continually allocate memory without ever giving it up and eventually run out of memory. This condition is known as a memory leak.

  External fragmentation – A poor allocator can do its job of giving out and receiving blocks of memory so badly that it can no longer give out big enough blocks despite having enough spare memory. This is because the free memory can become split into many small blocks, separated by blocks still in use. This condition is known as external fragmentation.

8. Open your computer with file directory and draw the tree file directory of at least 3 directories.(guide file tree diagram in the lecture with main directory named Tom).

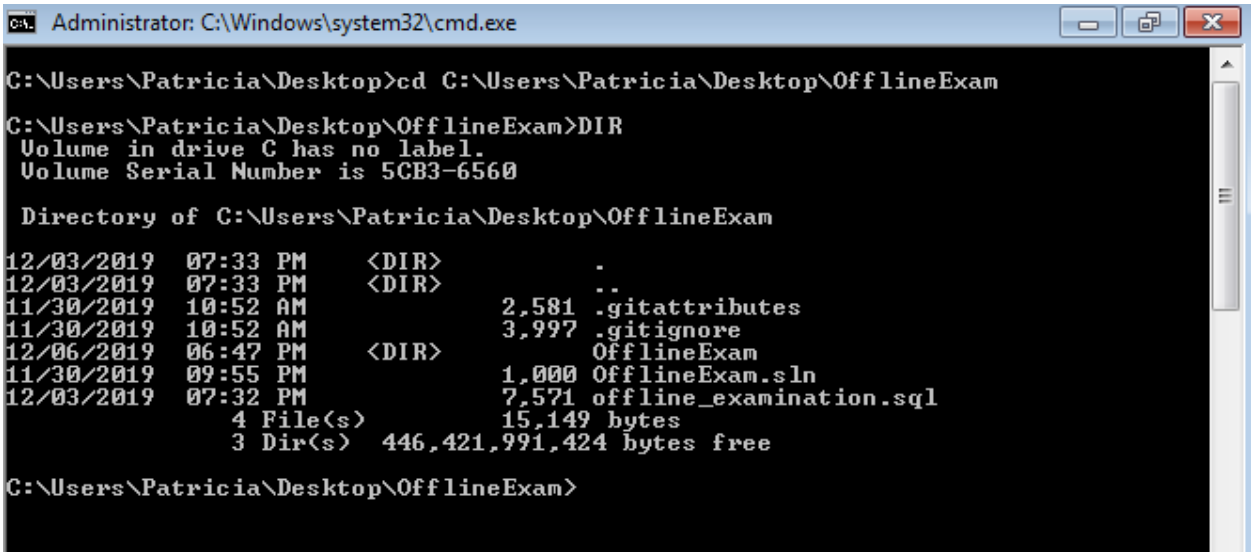


9. Open 2 main directory and create a table with the following information



Main directory name: db
Date Last Modified: 07/18/2021
Number of files in the folder: 3
Total size of the files: 21,041 bytes

Primary Name	Extension name	Size of file	Date of creation	Time of creation	Type of file
DB AND TABLE SQL	.docx	13,761	10/24/2019	02:46 PM	Text
db_offline_exam	.txt	1,374	03/09/2020	11:25 PM	Text
Offline_examination	.sql	5,906	11/24/2019	07:07 PM	Database



Main directory name: OfflineExam
Date Last Modified: 12/03/2019
Number of files in the folder: 4
Total size of the files: 15,149 bytes

Primary Name	Extension name	Size of file	Date of creation	Time of creation	Type of file
	.gitattributes	2,581	11/30/2019	10:52 AM	Text
	.gitignore	3,997	11/30/2019	10:52 AM	Text
OfflineExam	.sln	1,000	11/30/2019	09:55 PM	Source Code
offline_examination	.sql	7,571	12/03/2019	07:32 PM	Database