COMPARATIVE ANALYSIS OF DATA RECOVERY USING EASEUS DATA RECOVERY WIZARD AND RECUVA APPLICATIONS

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ABSTRACT

Article Info	At the end of the day, the use of computers is intended for data processing in the form of text, images, videos, and data processing that can be carried out easily and quickly. Individual computer users and organizations in everyday life often work and store data on computers, but in reality, there are certain events where the results of work, in the form of document files on the computer, can be lost so that very important and much needed files are lost from the storage media in the computer. computer or laptop. In recovering lost files or documents, various software can be used, including Pandora Recovery, Recuva and EaseUS Data Recovery Wizard. In this study, what will be discussed is the recovery of lost data by comparing the use of the EaseUS Data Recovery Wizard and Recuva application
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1.   INTRODUCTION

The most common thing that happens in processing documents such as word documents, excel, power point and other information is that they run out of information, the operating system fails to identify file systems, whether they are on disks, partitions or because the operating system is crashing. A universal problem can also arise because out of information is an error in the unplanned deletion of files or documents from the hard disk and from the recycle bin. The purpose of information recovery is to restore the lost document after that next move the document or file to a convenient place by copying method. After that the next process is to repartition the hard disk and move valuable information to another place continuously. Most importantly separated from where the surgical system is located. Create the second type of file destruction is a disk-level failure. Some kind of file system that doesn't change, partition error or hard disk is damaged. This second type of destruction may be difficult to read information.

In this research, the EaseUS Information Recovery Wizard and Recuva applications are discussed. Both apps are the best information recovery apps, and they are very easy to use. The EaseUS Information Recovery application can restore information on hard drives, flash disks, and memory cards. On the other hand, Recuva is an unpaid or free application made by PiriForm, a popular application developer with a free application to sterilize junk files on a PC. Information stored in storage media such as hard disks, memory cards, external media, and flash drives is very vulnerable to threats such as deleted or lost information due to virus or malware attacks.[1]

EaseUS Information Recovery Wizard and Recuva applications have simple steps to retrieve information in seconds. With this application there is no need to be an expert such as a technician to operate the wizard and handle all the procedures yourself. This software has simple steps to help recover all lost information. And if the scanned file information is very large, the user will find it difficult to sort out the files that the user expects. Because the user's file name has changed to a new file name, so it is mandatory to sort out the recovery files that the user needs one by one. The purpose of this research is to understand the comparison between the EaseUS Information Recovery Wizard and Recuva applications on the recovery of Windows documents or information. Data recovery is the process of returning data from a damaged, failed, corrupt, or inaccessible state to a normal initial state. The returned data can be from hard drives, flash disks and other storage media such as digital cameras and camcorders. Because its function is to recover lost data, this data recovery process can be used in the context of computer forensics or for espionage[2].

EaseUS Information Recovery Wizard application is an application to recover lost information easily. This application is provided directly by EaseUS in 2 types, namely a paid application and also

a trial or free type. Of course, these two types have significant comparisons, for free use there are quite good features and can be used to overcome various problems, for wanting a better type it is better to buy the premium type on the official website. Comparison of free and premium types is how many files you want to create again.

For free, this application can restore as many as 2 GB of files, on the contrary for premium types, it can restore as much information or files as you want or as much as you want without being limited. EaseUS Information Recovery Wizard is specially designed using algorithms, so it doesn't interfere with sensitive information when it is recovered. This application works optimally with the principle of read-only, and focuses on revisions or information needs.

2.   LITERATURE REVIEW

The development of storage media technology is currently required to be fast in reading and writing data according to the development of other hardware such as processors and Random Access Memory (RAM). Solid State Drive Non-volatile Memory Express (SSD NVMe) storage media has a different form and interface with SATA SSD[3]. Data storage media is a tool used to store data or programs where the stored data can be read back for processing by a computer. Some of the equipment including storage media include memory. Types of storage media storage media include: hard disk, compact disk (CD), USB, and others[4]

The method usually used by users in deleting data is by pressing the delete button and emptying the recycle bin or trash folder on the system. Users have an assumption regarding this, the user will think the deleted data has actually been deleted. But the delete button only removes the pointer on the block of storage media that stores data and is considered an empty space to be filled again with new data[5]. Today, data plays an important role in all aspects of human life: technology, Industry 4.0, Internet of Things and internet services. Because data is so important, there are two main priorities, namely: 1.) Data security, 2.) Data recovery process. For data security, one of the main focuses is data security in the data center, thus requiring the implementation of a data center room using the TIA-942 standard. The second priority is the data recovery process, closely related to digital forensics along with data security challenges in the data recovery process[6].

Data recovery is to restore files that have been lost and then move them to a safe place by copying or copying. Then the process after data recovery can be followed up by repartitioning the hard disk and moving valuable data to another place continuously.[1]. Recuva is an essential file recovery software which is used to recover files deleted by users from Windows PC, recycle bin or from MP3 players.[2]. Possibly an important factor why Recuva is favored by many users is that its features are better than Pandora Recovery. In addition, this study also states that Recuva can restore files that have been permanently and temporarily deleted, but cannot restore formatted data, lost due to viruses, partitioned and damaged files. However, Pandora Recovery can restore all formatted data, lost due to viruses, partitions and corrupted files. Temporarily deleted files can be recovered easily by restoring these files when they are in the recyclebin[7].

3.   METHODS

Research procedure design is a design or method used in research to obtain accurate information from respondents. Research design is a description of the various components that the researcher will use and the activities that will be tried throughout the research process[1]. This research design is a variable that is used is a comparison of document recovery through the EaseUS Information Recovery Wizard and Recuva applications. There is also an analysis of information used to respond to the possibilities that exist in this research. This analysis uses a PC boost and the applications are EaseUS Information Recovery Wizard and Recuva. The information collected will be tested and analyzed to provide a reflection of each variable in this research. Comparative research is research in which research seeks to determine the causes or reasons for differences in the behavior or status of groups or individuals (causal comparative in Latin expost facto means after the fact).[1].
The methods of the research are as follows:
1.   System Problem Analysis
2.   The Purpose of the Problem
3.   Determination of the Application Used

4. Design
5. Data analysis
6. Test
7. Comparison Results

4.   RESULTS AND DISCUSSION

Research result

The comparison that is tested through these two applications, is a comparison produced by EaseUS Information Recovery Wizard and Recuva. Using the ratio of recovering information or documents and the speed of time in recovering lost information or documents from the hard disk drive. This comparison uses the symbol "I" which means there is a feature and the symbol "0" means the unavailability of the feature. In this research, a comparison is made as follows:

A. Comparative Descriptive Analysis on Causes of Data Loss

Type	EaseUS Data Recovery Wizard	Recuva
Corrupt Files	I	0
Formatted	I	0
Partitioned	I	0
Partitioned	0	I
Virus	I	0
RAW Format	I	0

.Table 1. Causes of Data Loss

Based on table 1 above, it can be seen that Recuva can restore files that have been permanently and temporarily deleted, but cannot restore information that has been formatted, lost due to viruses, partitioned and files that have been damaged. But for EaseUS Information Recovery Wizard can restore all formatted information, lost due to viruses, partitioned and damaged files, and hard disk drives with RAW format. Deleted files can be recovered by restoring the files when they are in the recycle bin.

B. Comparative Descriptive Analysis of the File Type to Recover

Items	EaseUS Data Recovery Wizard	Recuva
E-mail	0	I
Encrypted	I	0
Compressed	I	I
Picture	I	I

Table 2. Types of Files to be Restored

Based on table 2 above, it can be concluded that each application can restore document files such as word, excel and power point, but there is a comparison of the types of information that can be returned by each application, for Recuva to restore compressed files, email files and photo files. or images. But recuva can't restore encrypted files. And for easeUs Information Recovery wizard can restore compressed, encrypted and photo files.

Then the data was tested by comparative descriptive analysis on the Support File System while the data analysis was as follows:

Items	EaseUS data Recovery Wizard	Recuva
FAT	I	I
NTFS	I	I
RAW	I	0

Table 3. Support file system

FAT and NTFS are one of the file systems that are often used in operating systems. The File System, also known as archiving, is a system for identifying how to store information from a particular file and organize the files used. Usually, the FAT system is used on Windows XP, on the other hand, NTFS is used on Windows and above, again for RAW, it is a hard disk system format that reports that the hard disk is in zero bytes in a damaged condition, due to the external hard disk installation method that doesn't use the rules. that is, when plugged into a PC, when not in use, it is immediately removed, so the hard disk can change the format to RAW, otherwise the information is still inside,

As seen in the photo at the bottom of the Easus application, the recovery wizard information is as follows:
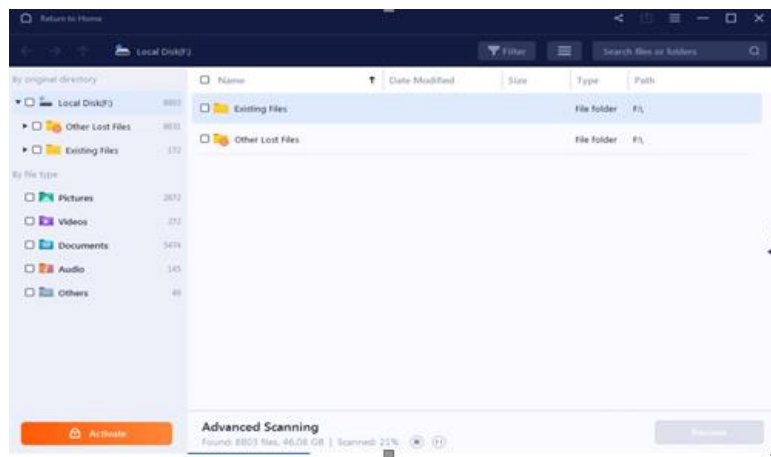

Figure 2. easus data recovery wizard application

The photo above is a photo of a file or document that has been found, such as a photo obtained in RAW format, meaning that the image file can be found in the EaseUS application for recovery information, even though our hard disk is considered 0 Bytes, so the EaseUS application can read lost document files and can be recovered to a more convenient place to store document files, as well as a form of searching for files or documents per folder, such as the My Picture, My Documents, Video, Audio and so on folders.
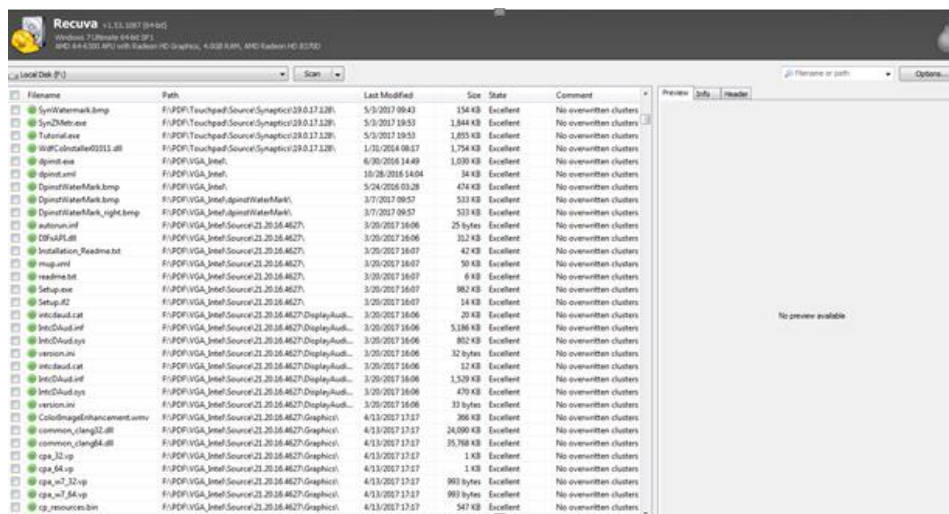

Figure 3 the process of working on recuva

From the photo above, it can be seen that the Recuva application can read information on a hard disk

that has changed to RAW format, but in an irregular form so that the files you are looking for are messy inside, so you have to reorder them one by one.

5.   CONCLUSION

Based on the results in this research, it can be concluded that the EaseUS Information Recovery Wizard application is recommended for retrieving lost or deleted information or documents, formatted, or even changing data formats to RAW or Raw in the form of my documents, pictures, audio, video and others. and so on, on the other hand, Recuva returns information in a messy state, whether it has been formatted, damaged, partitioned and infected with a virus, then the user is expected to re-compile the lost files. EaseUS Information Recovery Wizard has a limited information retrieval capacity of 2 GB, while for a wider area and more information retrieval, it requires purchasing a license code or subscribing to EaseUS Information Recovery Wizard online within 1 year,

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