

**Q. Use any open source tool to find partial and full multimedia files (video files) in DataStream. Explore any other five features.**

## **Software Used: Photorec**

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### **1. Introduction:**

Photorec is a free and open-source data recovery software designed to recover lost files including photos, videos, documents, and archives from a wide range of storage devices such as hard disks, memory cards, and USB drives. It is known for its powerful file recovery capabilities and ability to recover files even from damaged or formatted file systems.

#### *1.1 Objective of the project:*

The scope of the project is to use an open-source i.e.; Photorec tool to search for partial and full multimedia files (specifically video files) in each DataStream. The project aims to demonstrate the ability of the tool to recover multimedia files from different data sources, including hard drives, memory cards, and USB drives. Additionally, the project will explore other features of the selected tool to analyse and recover multimedia files. The goal is to showcase the effectiveness and efficiency of the open-source tool in recovering multimedia files and its potential use in digital forensics and data recovery.

#### *1.2 Description of the project:*

The project aims to use an open-source i.e.; Photorec tool to find partial and full multimedia files (video files) in a DataStream. This involves identifying a suitable tool, installing it, and using it to analyse the DataStream to locate any multimedia files present. The project may also involve exploring other features of the tool, such as file recovery or metadata extraction. The overall goal is to gain insights into the types of multimedia files present in the DataStream and potentially recover any lost or damaged files.

#### *1.3 Scope of the project:*

The scope of the project is to use an open-source i.e.; Photorec tool to search for partial and full multimedia files (specifically video files) in each DataStream. The project aims to demonstrate the ability of the tool to recover multimedia files from different data sources, including hard drives, memory cards, and USB drives. Additionally, the project will explore other features of the selected tool to analyse and recover multimedia files. The goal is to showcase the effectiveness and efficiency of the open-source tool in recovering multimedia files and its potential use in digital forensics and data recovery.

## 2. System Description:

Device name: LAPTOP-S7MB25C9

Processor: Intel(R) Core (TM) i5-1035G1 CPU @ 1.00GHz 1.19 GHz

Installed RAM: 8.00 GB (7.78 GB usable)

Device ID: D6F2EF23-16C7-42E6-9EDF-1FB588C9E691

Product ID: 00327-35194-34182-AAOEM

System type: 64-bit operating system, x64-based processor

### 2.1 Target system description:

The target system is a laptop with a device name LAPTOP-S7MB25C9, its processor is Intel(R) Core (TM) i5-1035G1 CPU @ 1.00GHz 1.19 GHz, it's device id and product id is D6F2EF23-16C7-42E6-9EDF-1FB588C9E691 and 00327-35194-34182-AAOEM respectively. A total of 8 GB ram is installed inside the system and its type is 64-bit operating system, x64-bases processor.

### 2.2 Assumptions and Dependencies:

The assumptions and dependencies for generating a detailed report of the target system's internal and external hardware details and also OS details-

#### 1. Assumptions:

- The tool being used can identify video file formats.
- The video files are stored in a format that can be accessed by the tool (e.g. not encrypted or protected).
- The video files are not severely damaged or corrupted.

#### 2. Dependencies:

- The availability and functionality of the open-source tool being used.
- The storage device or media containing the data stream is accessible and readable.
- The computer or system being used to run the tool has adequate resources (e.g. processing power, storage space) to handle the task.
- The user has sufficient knowledge and expertise to operate the tool effectively.

### 2.3 Functional and Non-Functional Dependencies

#### 1. Function Dependencies:

- The tool must be able to identify multimedia files within a DataStream.
- The tool must be able to recover both partial and full multimedia files.

- The tool should be able to identify different types of multimedia files, such as video files, audio files, and image files.
- The tool should be able to operate on various operating systems, including Windows, Linux, and macOS.

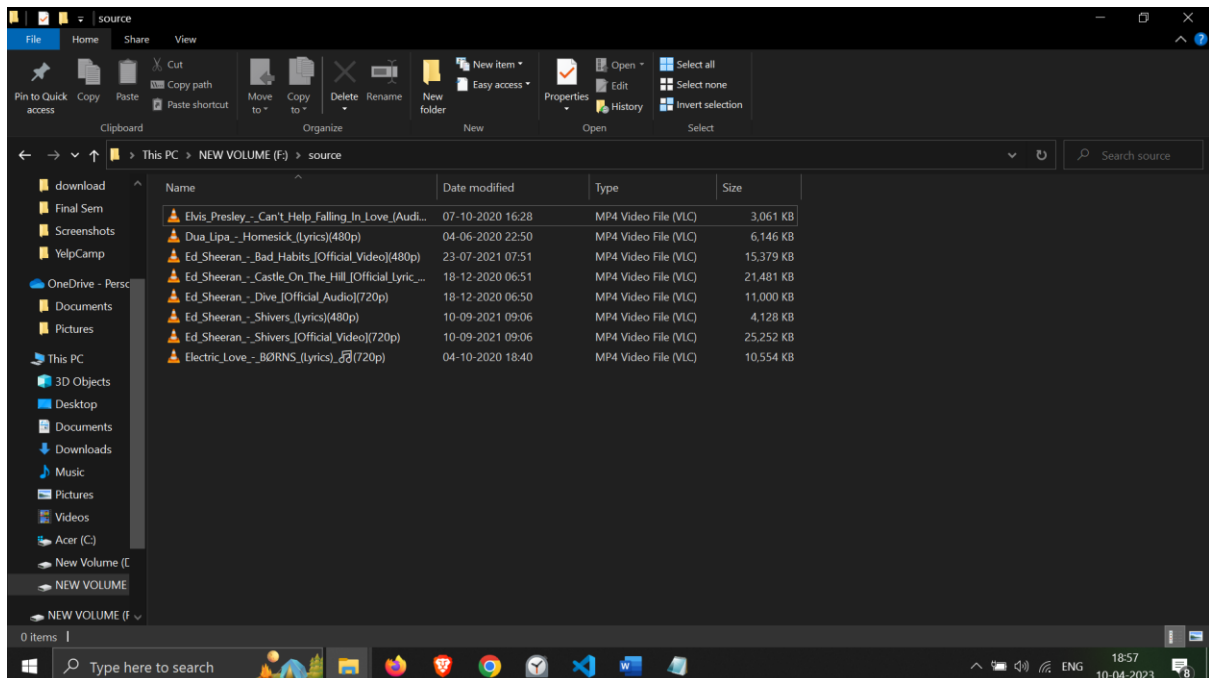
## 2. Non-Functional Dependencies:

- The tool must have a fast and efficient scanning and recovery process to minimize the time required for data recovery.
- The tool must have a user-friendly interface to enable easy navigation and use.
- The tool should be able to recover multimedia files without causing any damage to the original data.
- The tool should be lightweight and not consume excessive system resources.

## 2.4 Data set used in support of your project.

The files and images recovered by the system.

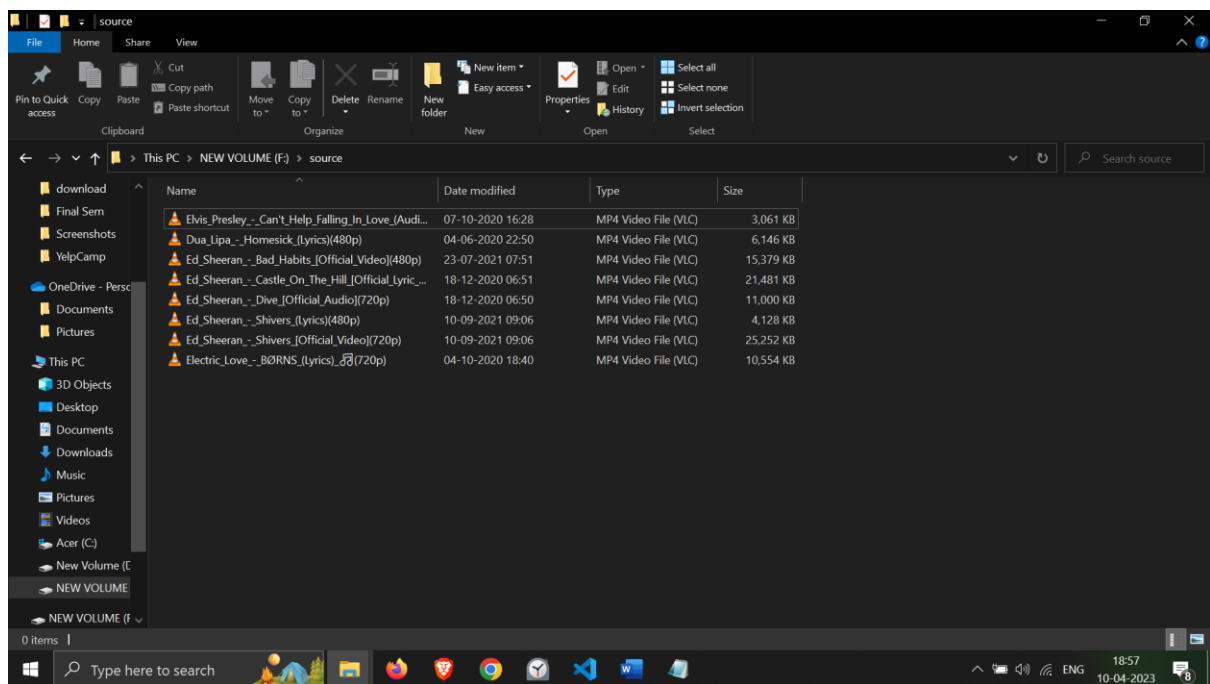
This is a physical drive that I am going to use. This is my source file and these are the videos I am going to recover in my desktop.



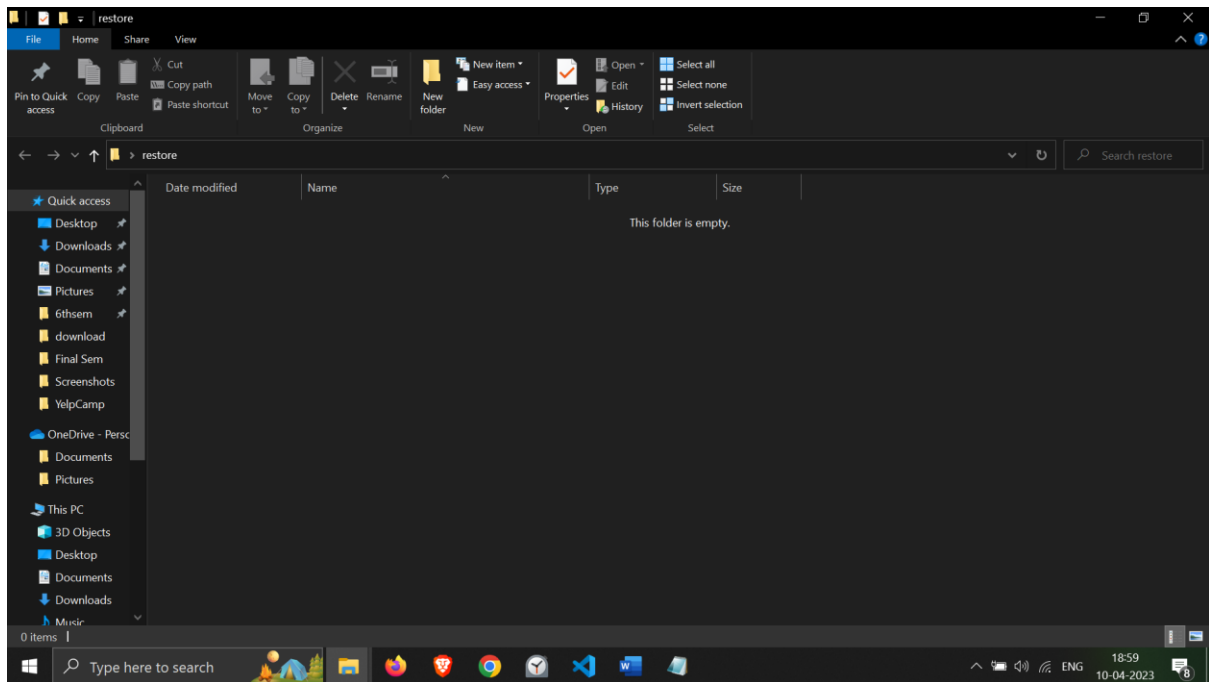
### 3. Analysis Report

#### 3.1 System snapshots and full analysis report

The physical drive that I am going to use is USB. This is my source file and these are the videos. Name of the drive is NEW VOLUME F



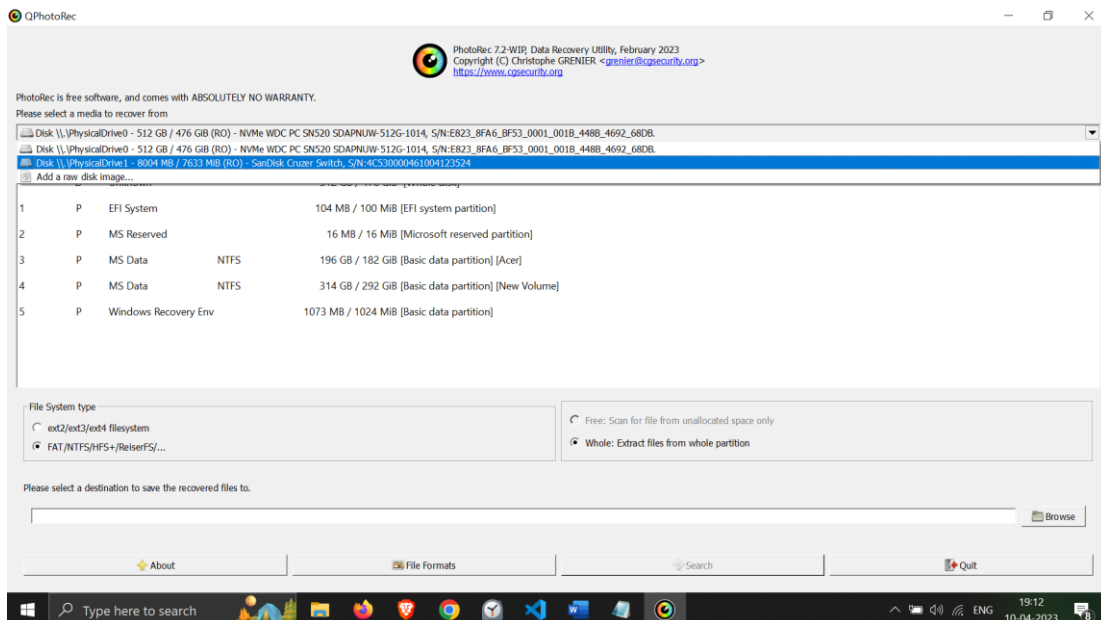
This is the destination where all the deleted files are going to be recover.



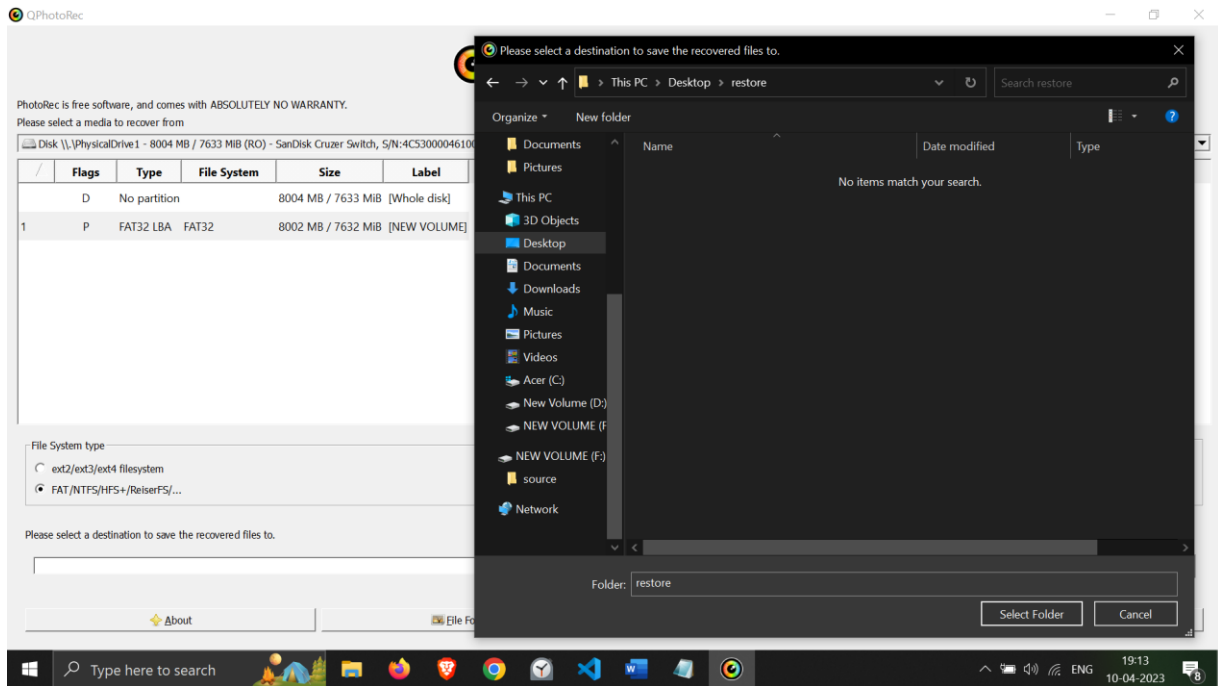
## Recovery Process:

As I have said earlier, I am going to use Photorec to recover the deleted videos and files.

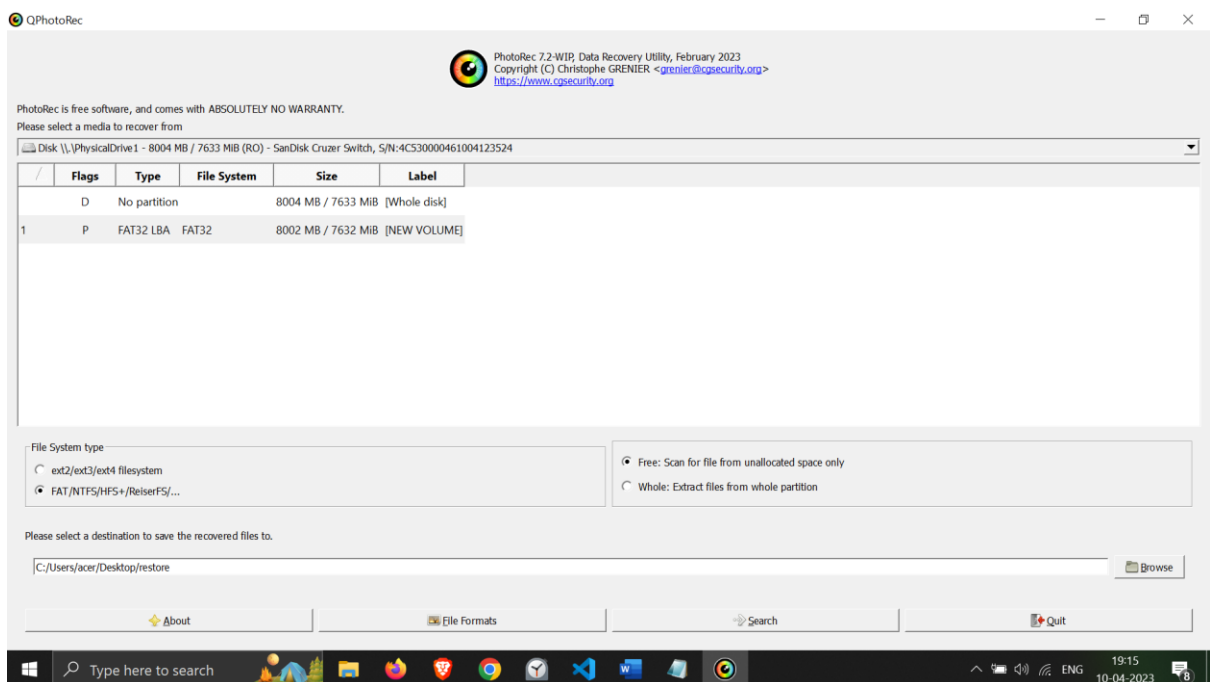
A physical drive 1 has been selected from which we are going to recover the files that has been deleted.



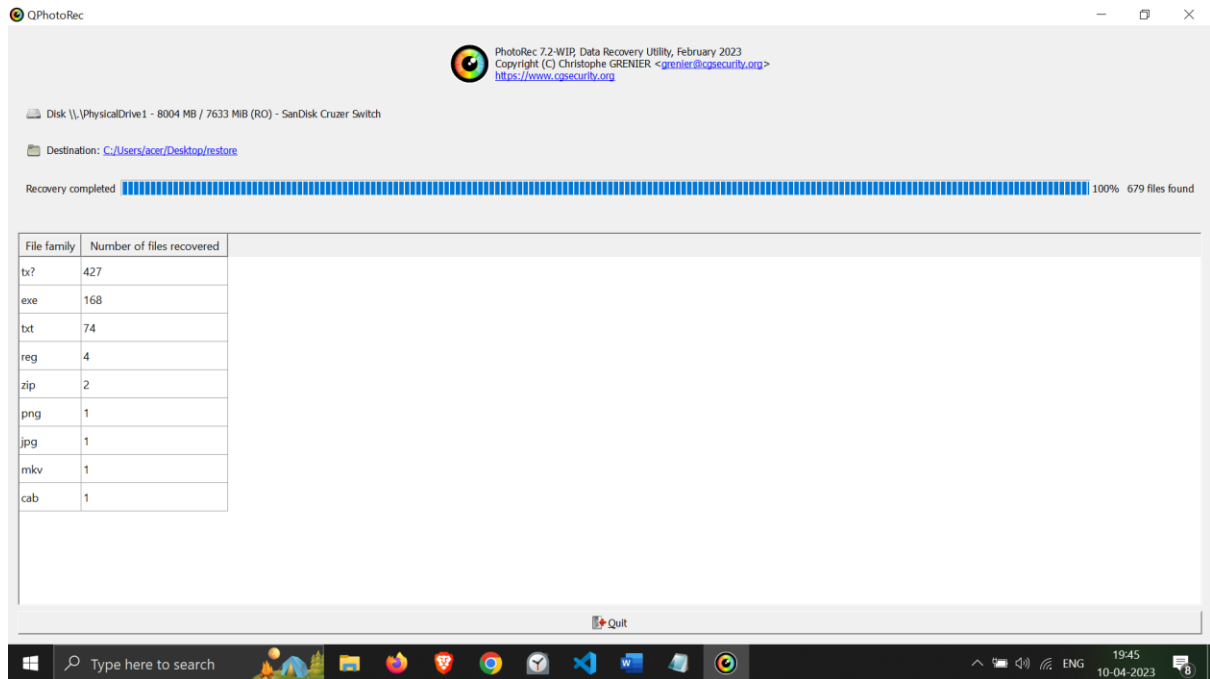
Restore is the destination where we are going to recover our files that has been deleted.



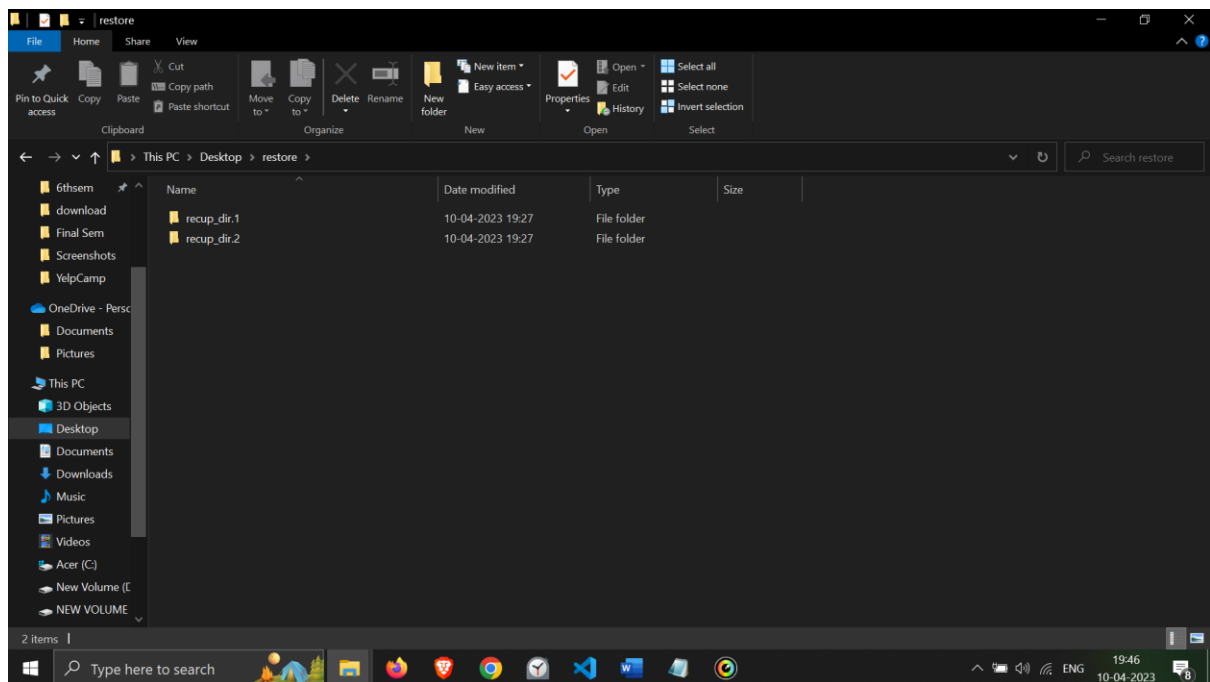
Now we are going to press search and start recovering the files



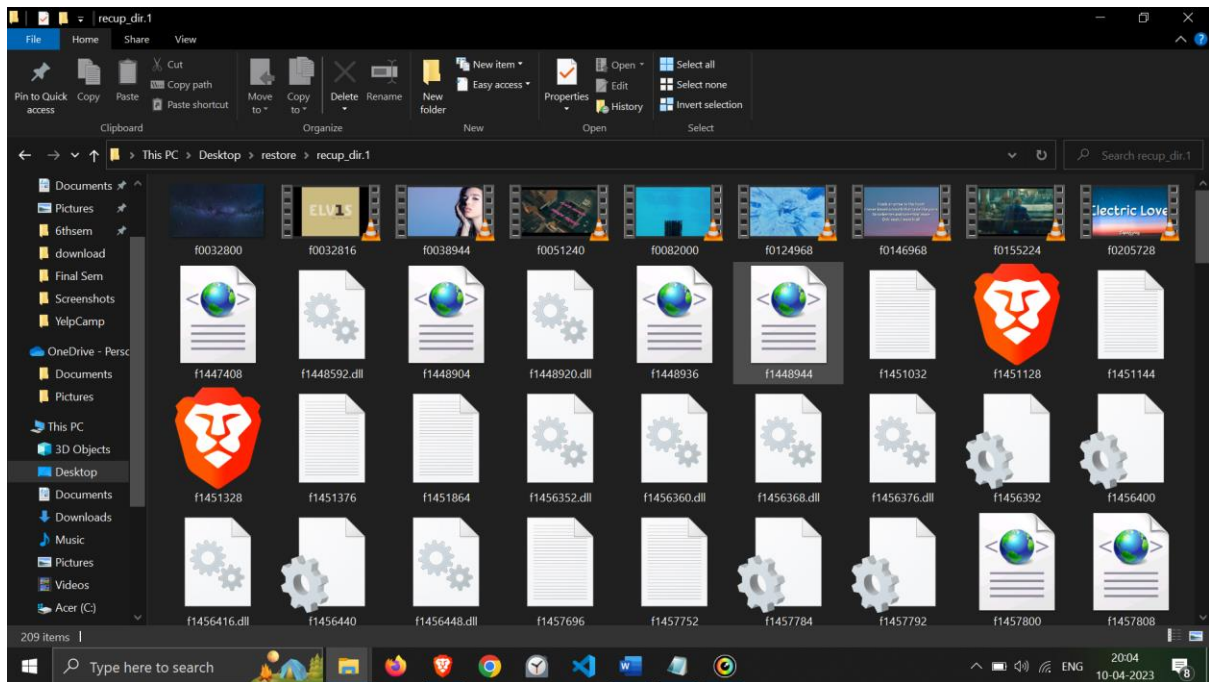
As we can see all our files has been recovered



Two directory has been created where our recovered files are



In addition to recently deleted files, it also recovers previously deleted files.

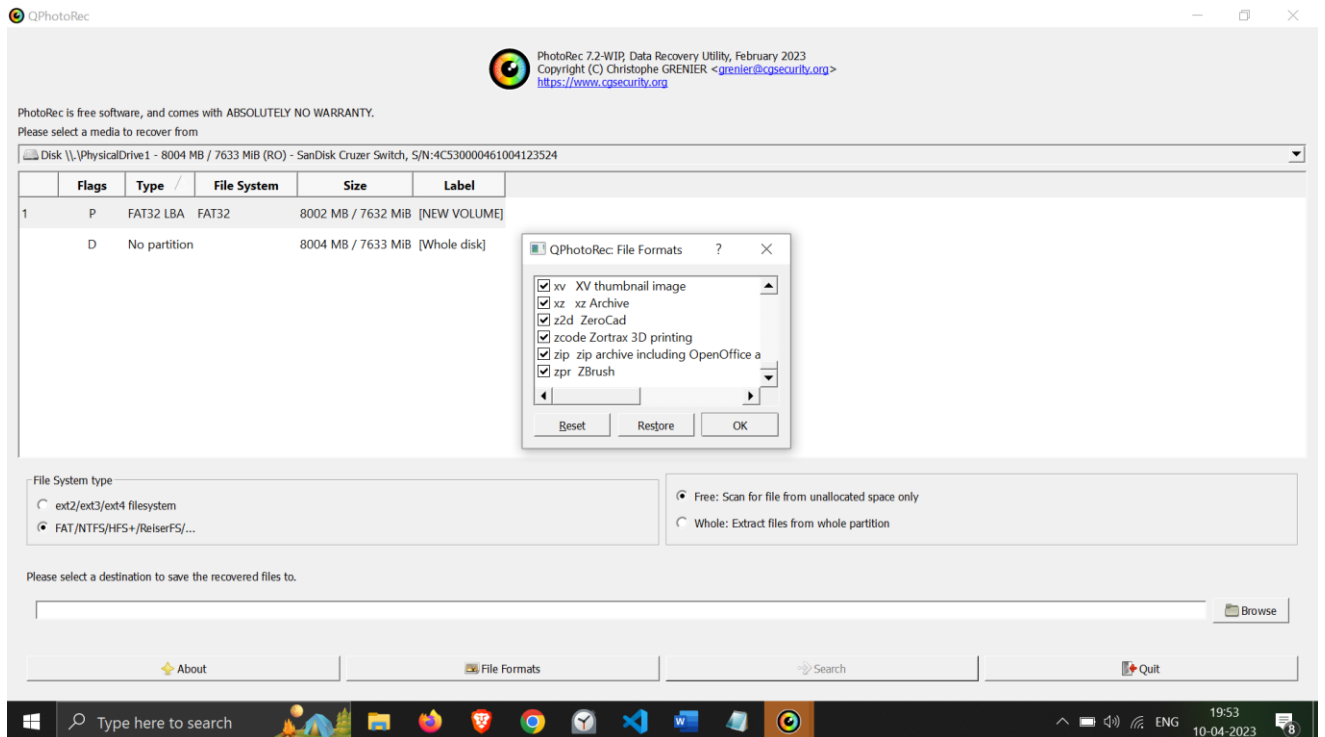


## Some of the additional features we can use in Photorec.

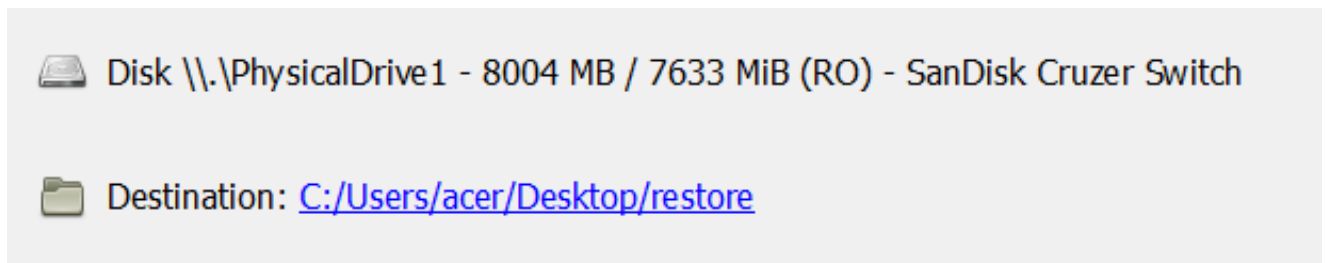
1. Selecting the file types to recover: PhotoRec allows you to select the file types you want to recover, such as images, videos, documents, etc. This makes it easy to filter out unwanted files and only recover the files you need.

We can select the format we want.





2. It gives the details of both source and destination while recovering.

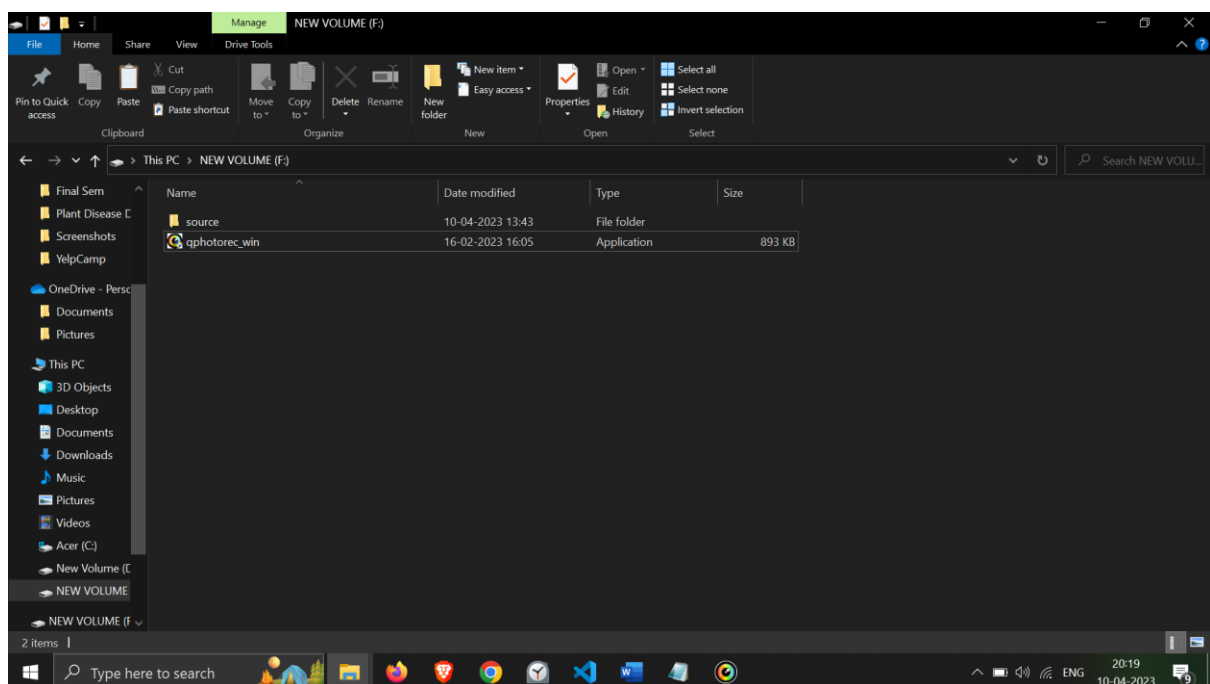


3. It also gives information about the source and destination as well.

File family	Number of files recovered
tx?	427
exe	168
txt	74
mov	8
reg	4
zip	2
png	1
jpg	1
cab	1

4. Running PhotoRec from a bootable USB drive: PhotoRec can be run from a bootable USB drive, which can be useful if you need to recover files from a computer that won't boot.

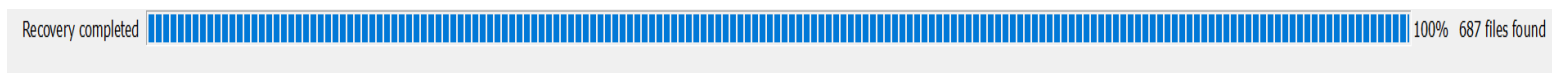
=> You can keep the Photorec in bootable pen drive and do the recovery from here.



5. Saving recovered files to a specific location: PhotoRec allows you to choose where to save the recovered files, which can be helpful if you have limited space on your hard drive.



6. It also allows us to track the progress



## 4. References

<https://www.cgsecurity.org/wiki/PhotoRec>

<https://en.wikipedia.org/wiki/PhotoRec>