

## PRACTICAL NO 1

Create a program to send encrypted messages from sender and decrypt a message at receiver end

### Create a sender.py

```
import socket
```

```
import random
```

```
def main():
```

```
    # Connect to the server
```

```
    with socket.socket(socket.AF_INET, socket.SOCK_STREAM) as sc:
```

```
        sc.connect(('localhost', 6017))
```

```
    # Get input from the user
```

```
    s = input("Enter the string: ")
```

```
    # Initialize variables
```

```
    key = []
```

```
    ct = ""
```

```
    # Encrypt the message
```

```
    for char in s:
```

```
        j = random.randint(0, 49) # Random integer between 0 and 49
```

```
        key.append(str(j))      # Append to key list
```

```
        ct += chr(ord(char) + j) # Encrypt character
```

```
    print(f"j={j}")            # Print the random number used for each character
```

```
    # Convert key list to a comma-separated string
```

```
    key_str = ','.join(key)
```

```
    # Print the key and encrypted message
```

```

print(f"Key={key_str}")
print(f"Encrypted message: {ct}")

# Send the encrypted message and key
message = f"{ct},{key_str}"
sc.sendall(message.encode('utf-8')) # Send as bytes

if __name__ == "__main__":
    main()

```

## Receiver.py

```

import socket

def main():
    # Create a server socket
    with socket.socket(socket.AF_INET, socket.SOCK_STREAM) as
server_socket:
        server_socket.bind(('localhost', 6017))
        server_socket.listen(1) # Listen for incoming connections
        print("Waiting for a connection...")

    # Accept a connection
    conn, addr = server_socket.accept()
    with conn:
        print(f"Connected by {addr}")

    # Read the incoming data
    ct = conn.recv(1024).decode('utf-8') # Buffer size is 1024 bytes
    s = ct.split(",") # Split the message and key

```

```
encrypted_message = s[0]
key = list(map(int, s[1:])) # Convert key strings to integers

print(f"Encrypted message: {encrypted_message}")

# Decrypt the message
pt = ""
for i in range(len(encrypted_message)):
    j = key[i]
    pt += chr(ord(encrypted_message[i]) - j) # Decrypt character
    print(f"Key={j}")

print(f"Message from Sender: {pt}")

if __name__ == "__main__":
    main()
```

**FIRST RUN RECEIVER THEN SENDER**

```
receiver.py - C:\Users\admin\Downloads\receiver.py (3.11.0)
File Edit Format Run Options Window Help
import socket

def main():
    # Create a server socket
    with socket.socket(socket.AF_INET, socket.SOCK_STREAM) as server_socket:
        server_socket.bind(('localhost', 6017))
        server_socket.listen(1) # Listen for incoming connections
        print("Waiting for a connection...")

        # Accept a connection
        conn, addr = server_socket.accept()
        with conn:
            print(f"Connected by {addr}")

            # Read the incoming data
            ct = conn.recv(1024).decode('utf-8') # Buffer size is 1024 bytes
            s = ct.split(",") # Split the message and key
            encrypted_message = s[0]
            key = list(map(int, s[1:])) # Convert key strings to integers

            print(f"Encrypted message: {encrypted_message}")

            # Decrypt the message
            pt = ''
            for i in range(len(encrypted_message)):
                j = key[i]
                pt += chr(ord(encrypted_message[i]) - j) # Decrypt character
                print(f"Key={j}")

            print(f"Message from Sender: {pt}")

if __name__ == "__main__":
    main()
```

```
sender.py - C:\Users\admin\Downloads\sender.py (3.11.0)
File Edit Format Run Options Window Help

import socket
import random

def main():
    # Connect to the server
    with socket.socket(socket.AF_INET, socket.SOCK_STREAM) as sc:
        sc.connect(('localhost', 6017))

        # Get input from the user
        s = input("Enter the string: ")

        # Initialize variables
        key = []
        ct = ''

        # Encrypt the message
        for char in s:
            j = random.randint(0, 49) # Random integer between (
            key.append(str(j))        # Append to key list
            ct += chr(ord(char) + j)  # Encrypt character

            print(f"j={j}")           # Print the random number

        # Convert key list to a comma-separated string
        key_str = ','.join(key)

        # Print the key and encrypted message
        print(f"Key={key_str}")
        print(f"Encrypted message: {ct}")

        # Send the encrypted message and key
        message = f"{ct},{key_str}"
        sc.sendall(message.encode('utf-8')) # Send as bytes

if __name__ == "__main__":
```

## OUTPUT

```
Python 3.11.0 (main, Oct 24 2022, 18:26:48) [MSC
v.1933 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()
" for more information.
>>>
===== RESTART: C:\Users\admin\Downlo
ads\sender.py =====
Enter the string: SHRAVANI
j=35
j=24
j=21
j=34
j=9
j=13
j=36
j=10
Key=35,24,21,34,9,13,36,10
Encrypted message: v`gc_NrS
>>>

Python 3.11.0 (main, Oct 24 2022, 18:26:48) [MSC
v.1933 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()
" for more information.
>>>
===== RESTART: C:\Users\admin\Downlo
ds\receiver.py =====
Waiting for a connection...
Connected by ('127.0.0.1', 58491)
Encrypted message: v`gc_NrS
Key=35
Key=24
Key=21
Key=34
Key=9
Key=13
Key=36
Key=10
Message from Sender: SHRAVANI
>>>
```

## PRACTICAL NO 2

import logging

# Configure the logger

logger = logging.getLogger('cfprac2')

logger.setLevel(logging.DEBUG)

# Create a file handler that logs debug and higher level messages

file\_handler = logging.FileHandler('D:/mylogfile.log', mode='a') # 'a' for append mode

file\_handler.setLevel(logging.DEBUG)

# Create a formatter and set it for the handler

formatter = logging.Formatter('%(asctime)s - %(levelname)s - %(message)s')

file\_handler.setFormatter(formatter)

# Add the file handler to the logger

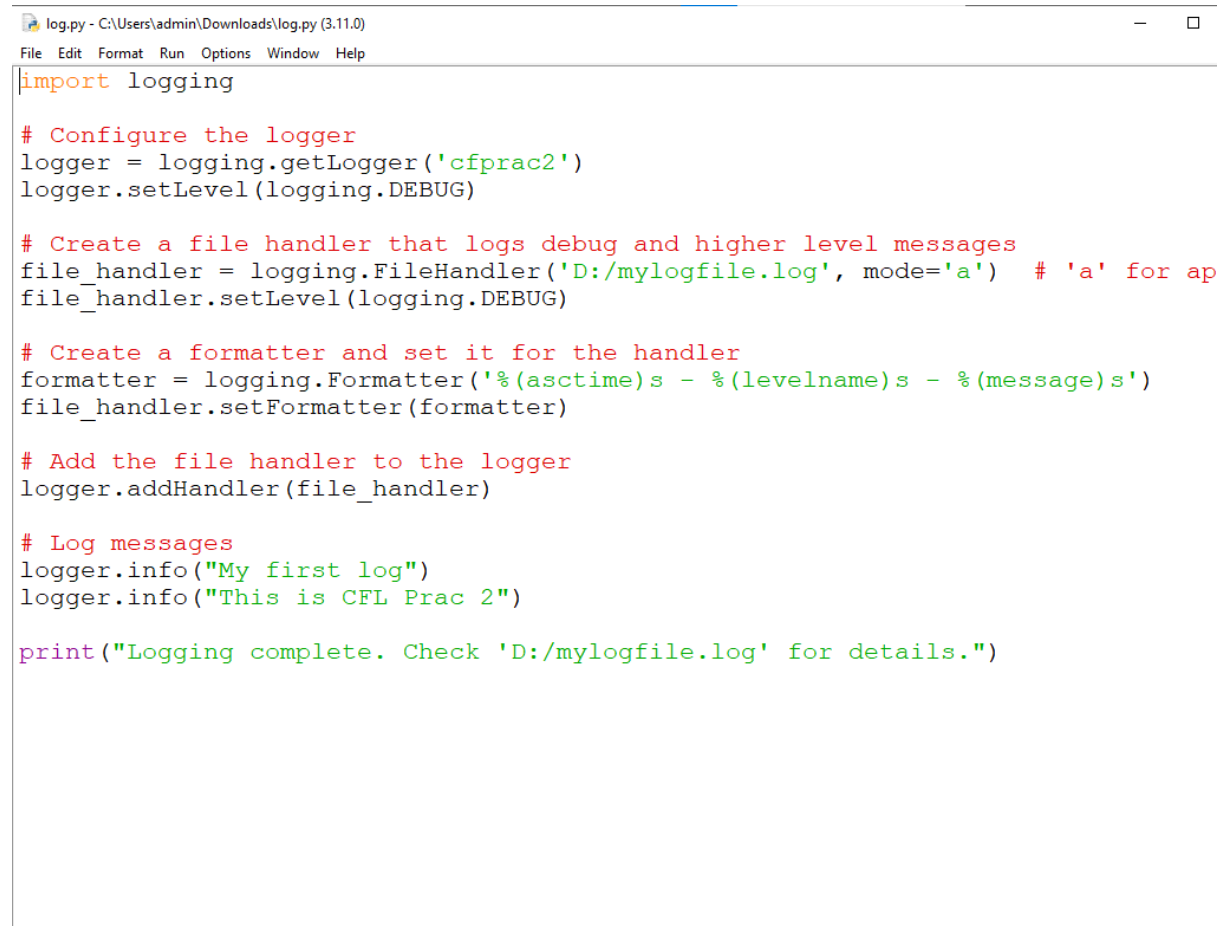
logger.addHandler(file\_handler)

```
# Log messages
```

```
logger.info("My first log")
```

```
logger.info("This is CFL Prac 2")
```

```
print("Logging complete. Check 'D:/mylogfile.log' for details.")
```



The screenshot shows a Python script editor window with the following code:

```
import logging

# Configure the logger
logger = logging.getLogger('cfprac2')
logger.setLevel(logging.DEBUG)

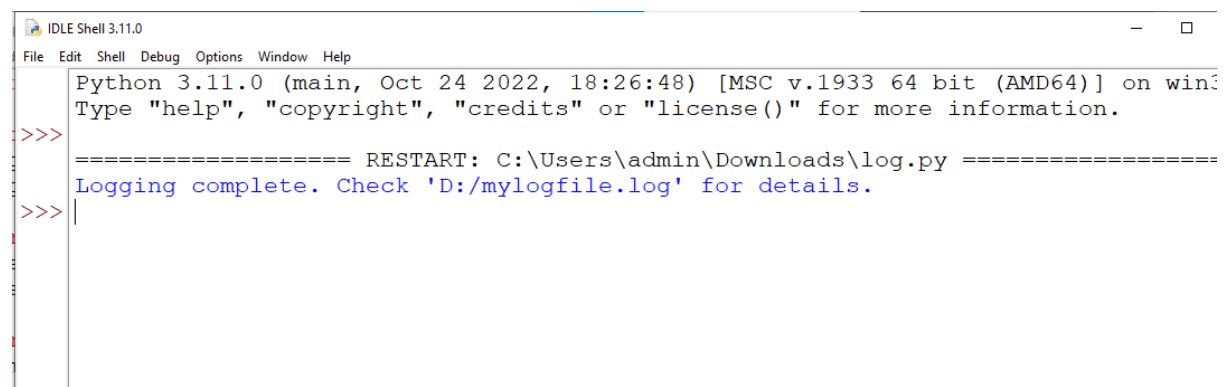
# Create a file handler that logs debug and higher level messages
file_handler = logging.FileHandler('D:/mylogfile.log', mode='a') # 'a' for append
file_handler.setLevel(logging.DEBUG)

# Create a formatter and set it for the handler
formatter = logging.Formatter('%(asctime)s - %(levelname)s - %(message)s')
file_handler.setFormatter(formatter)

# Add the file handler to the logger
logger.addHandler(file_handler)

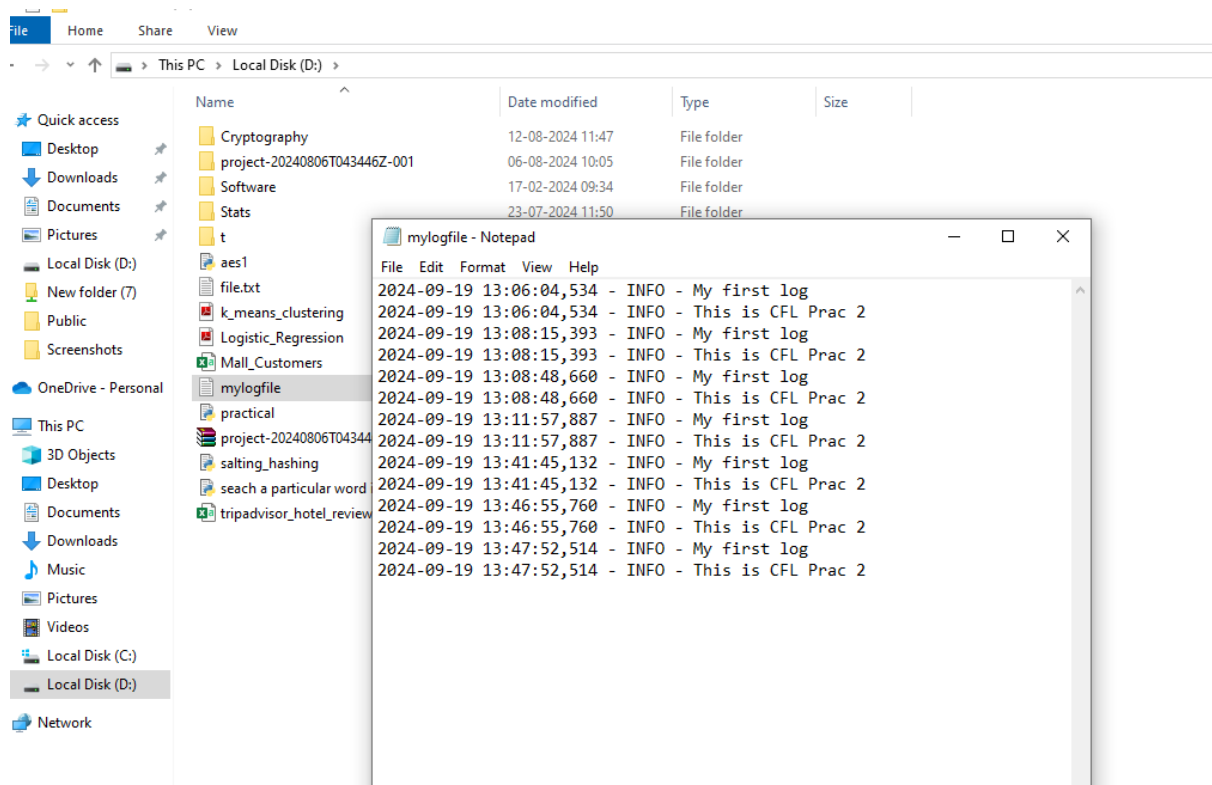
# Log messages
logger.info("My first log")
logger.info("This is CFL Prac 2")

print("Logging complete. Check 'D:/mylogfile.log' for details.")
```



The screenshot shows an IDLE Shell window with the following output:

```
Python 3.11.0 (main, Oct 24 2022, 18:26:48) [MSC v.1933 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\admin\Downloads\log.py =====
Logging complete. Check 'D:/mylogfile.log' for details.
>>>
```



## PRACTICAL NO 3

### WRITE A PROGRAM FOR SEARCHING FILE IN GIVEN DIRECTORY

import os

def main():

# Get directory from user

dir\_path = input("Enter Directory: ")

# Get first letter of file from user

first\_letter = input("Enter first letter of file: ")

try:

# List files in the directory

files = os.listdir(dir\_path)



```
____ # Filter files that start with the specified letter
____
____ filtered_files = [file for file in files if file.startswith(first_letter)]
____
____
____ if not filtered_files:
____     print("No files found starting with that letter.")
____
____ else:
____     for filename in filtered_files:
____         print(filename)
____
____
____ except FileNotFoundError:
____     print("Either dir does not exist or is not a directory")
____
____ except Exception as e:
____     print(f"An error occurred: {e}")
____
____
____ if __name__ == "__main__":
____     main()
```

```
searching file in given directory.py - C:\Users\admin\Downloads\searching file in given directory.py (3.11.0)
File Edit Format Run Options Window Help
import os

def main():
    # Get directory from user
    dir_path = input("Enter Directory: ")

    # Get first letter of file from user
    first_letter = input("Enter first letter of file: ")

    try:
        # List files in the directory
        files = os.listdir(dir_path)

        # Filter files that start with the specified letter
        filtered_files = [file for file in files if file.startswith(first_letter)]

        if not filtered_files:
            print("No files found starting with that letter.")
        else:
            for filename in filtered_files:
                print(filename)

    except FileNotFoundError:
        print("Either dir does not exist or is not a directory")
    except Exception as e:
        print(f"An error occurred: {e}")

if __name__ == "__main__":
    main()
```

```
IDLE Shell 3.11.0
File Edit Shell Debug Options Window Help
Python 3.11.0 (main, Oct 24 2022, 18:26:48) [MSC v.1933 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
==== RESTART: C:\Users\admin\Downloads\searching file in given directory.py ====
Enter Directory: D:
Enter first letter of file: M
Mall_Customers.csv
>>>
```

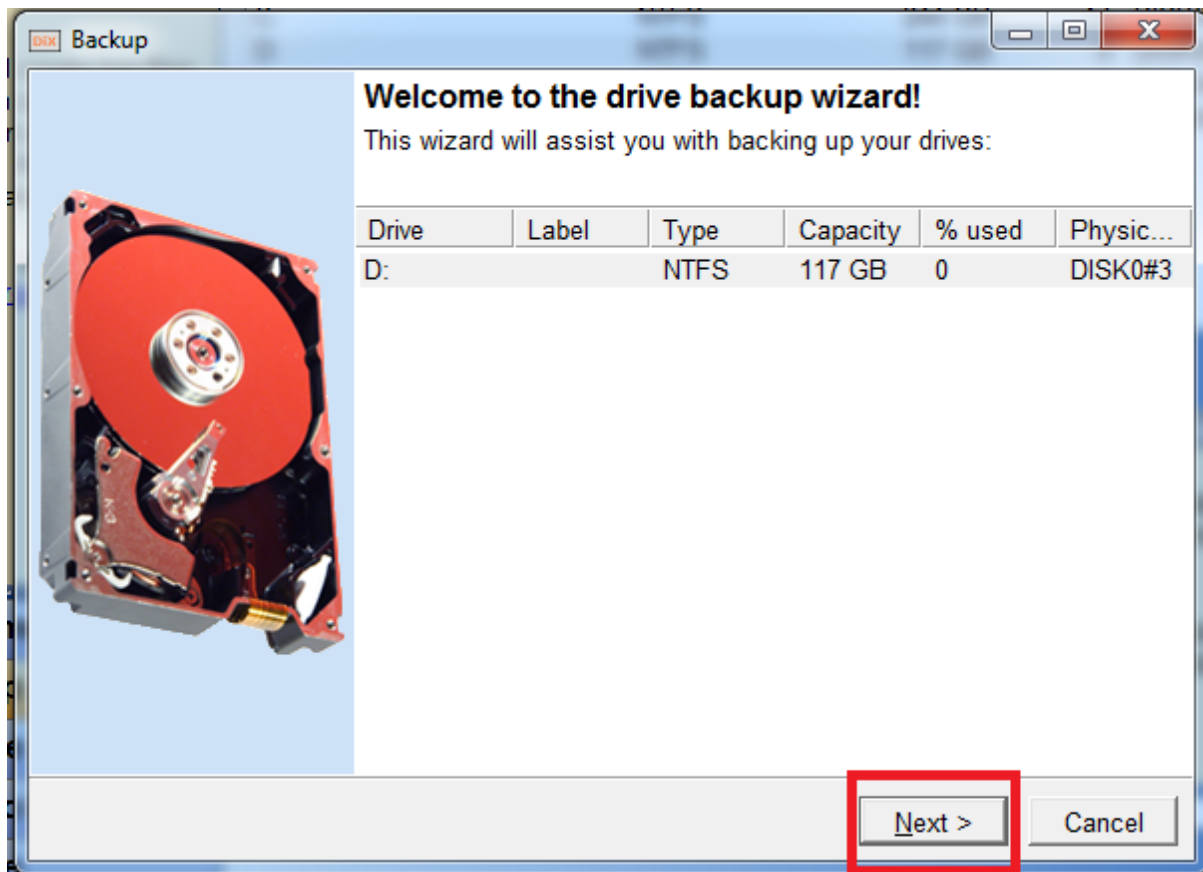
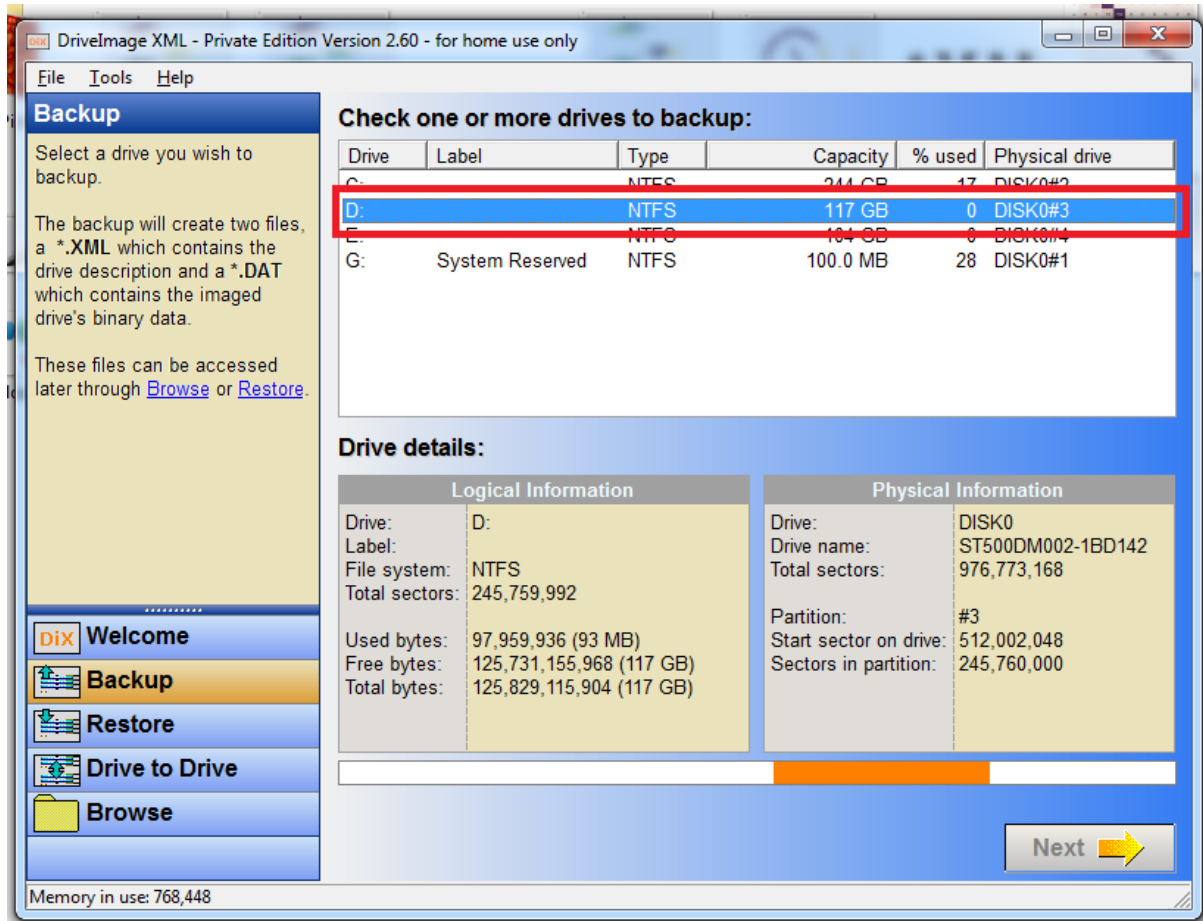
## PRACTICAL NO 4

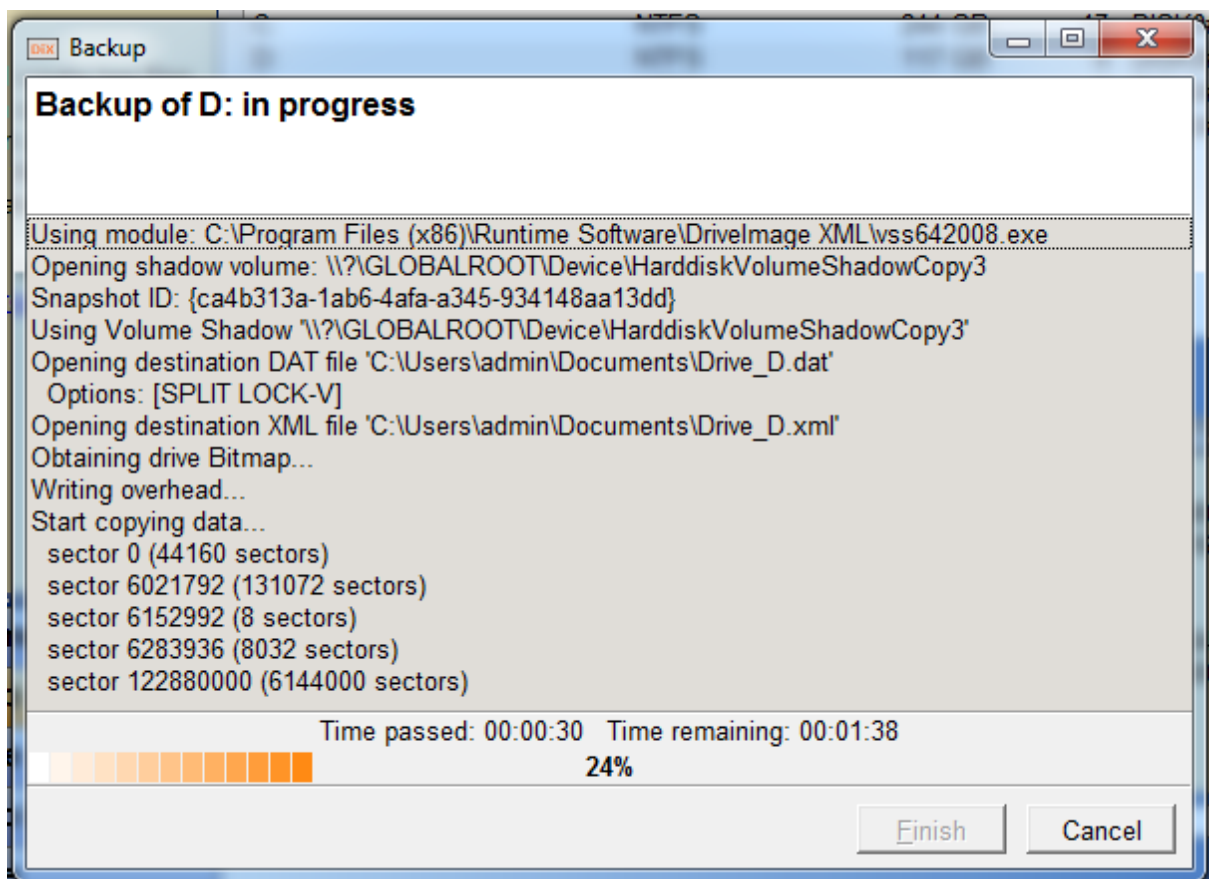
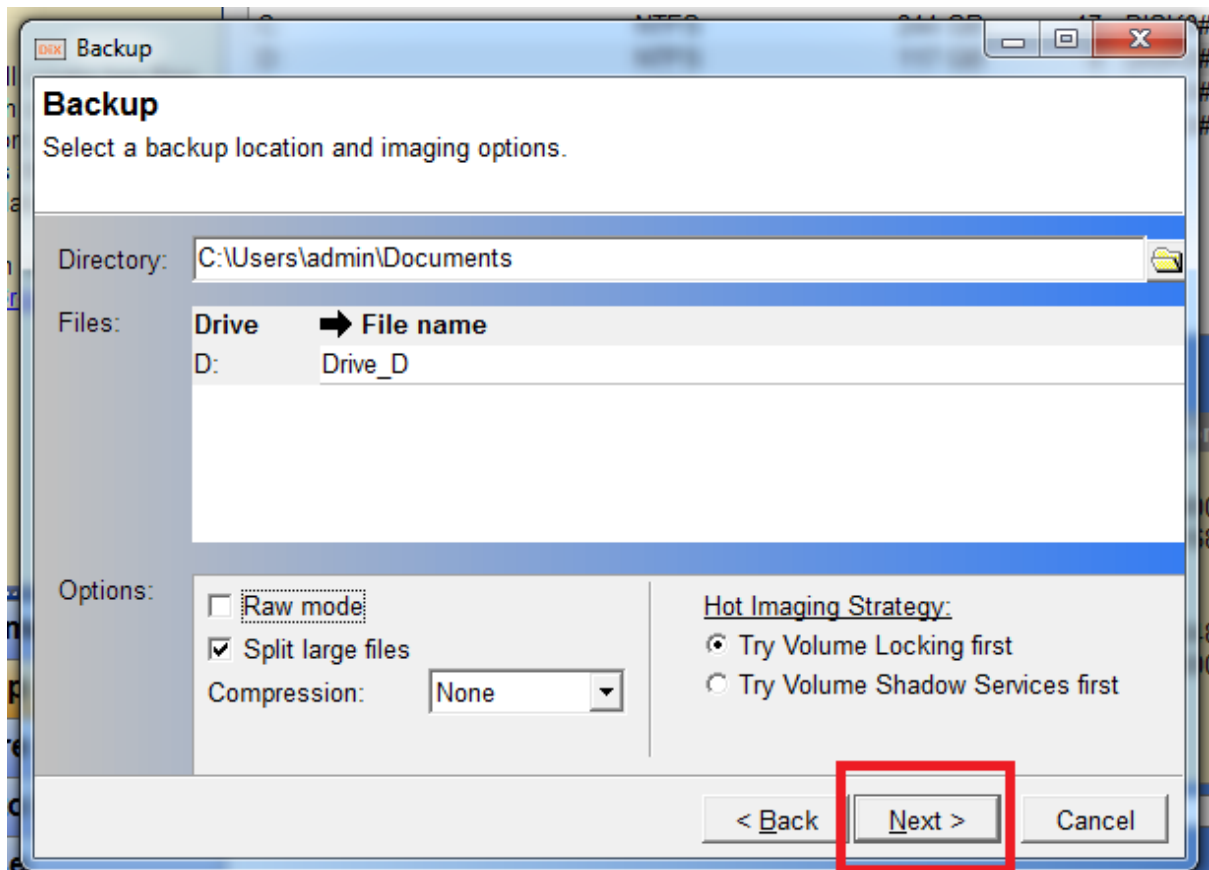
WRITE A PROGRAM TO SEARCH A PARTICULAR WORD IN A FILE

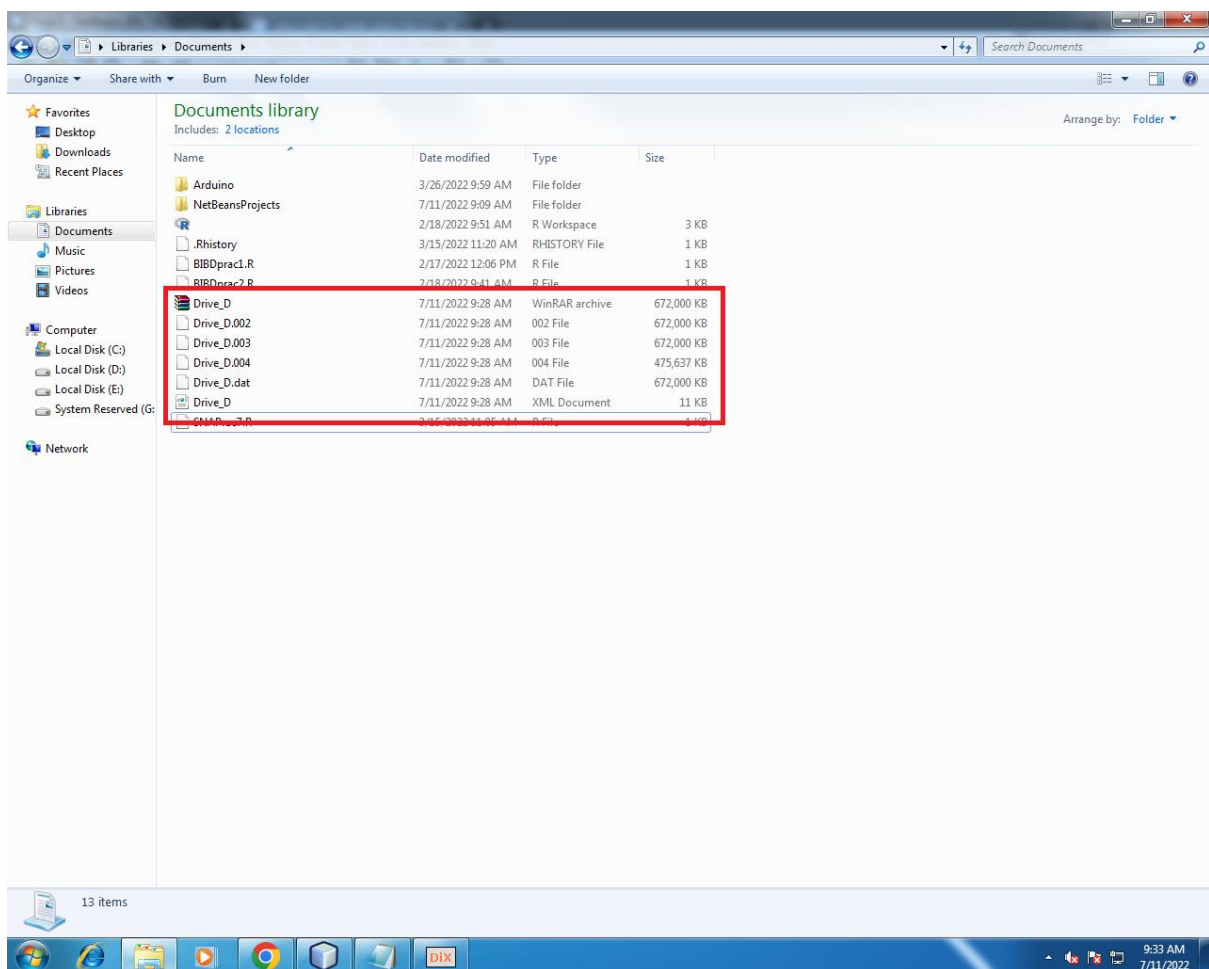
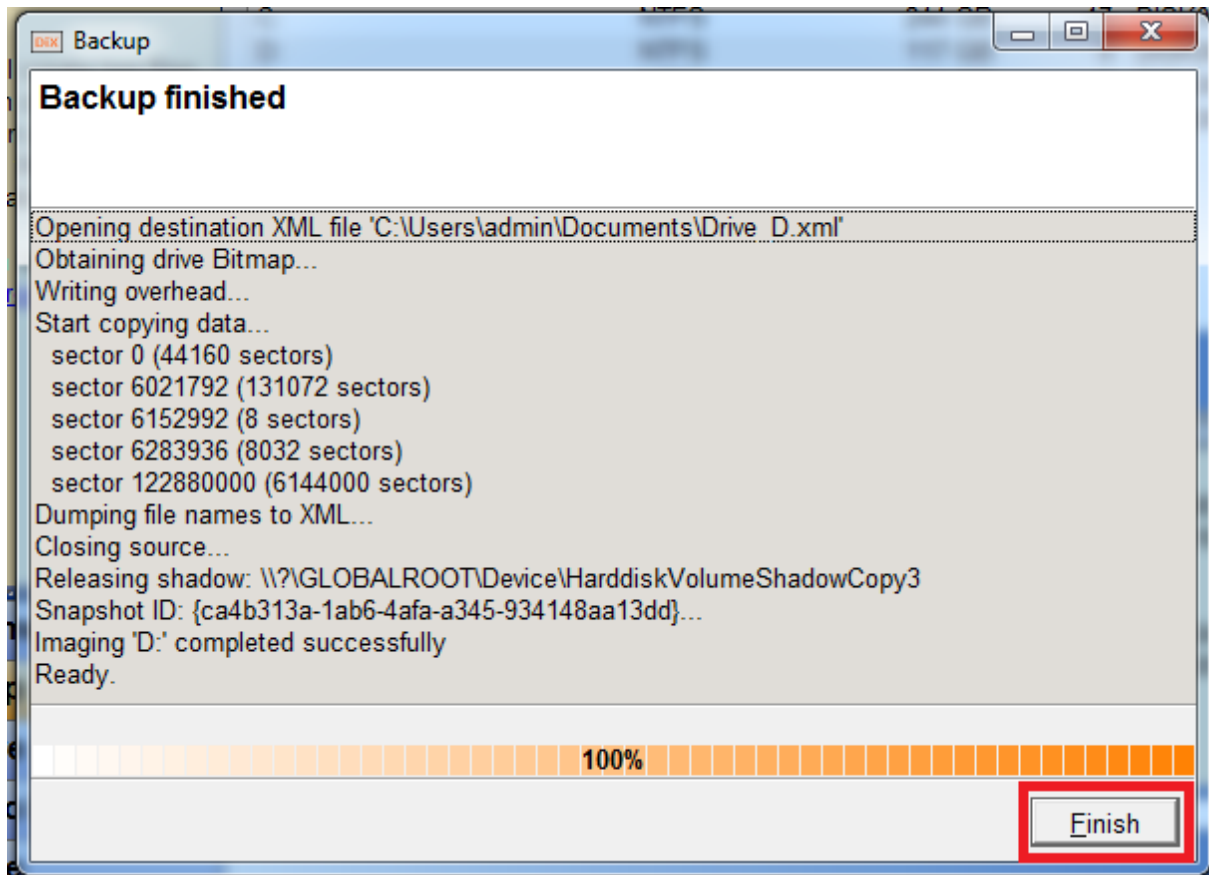
PRATICAL NO 5

# USE DRIVE IMAGE XML TO IMAGE A HARD DRIVE



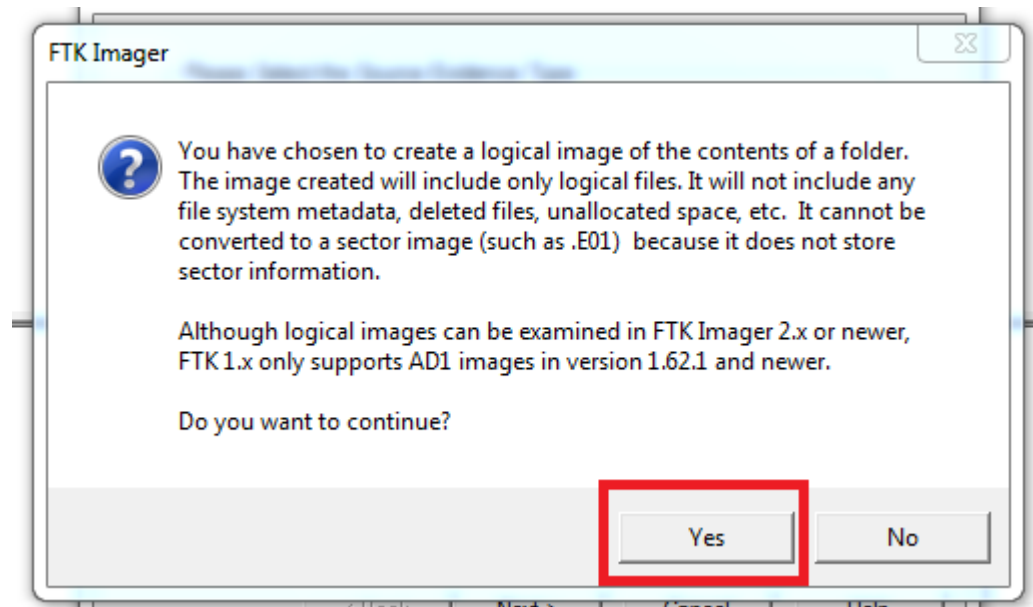
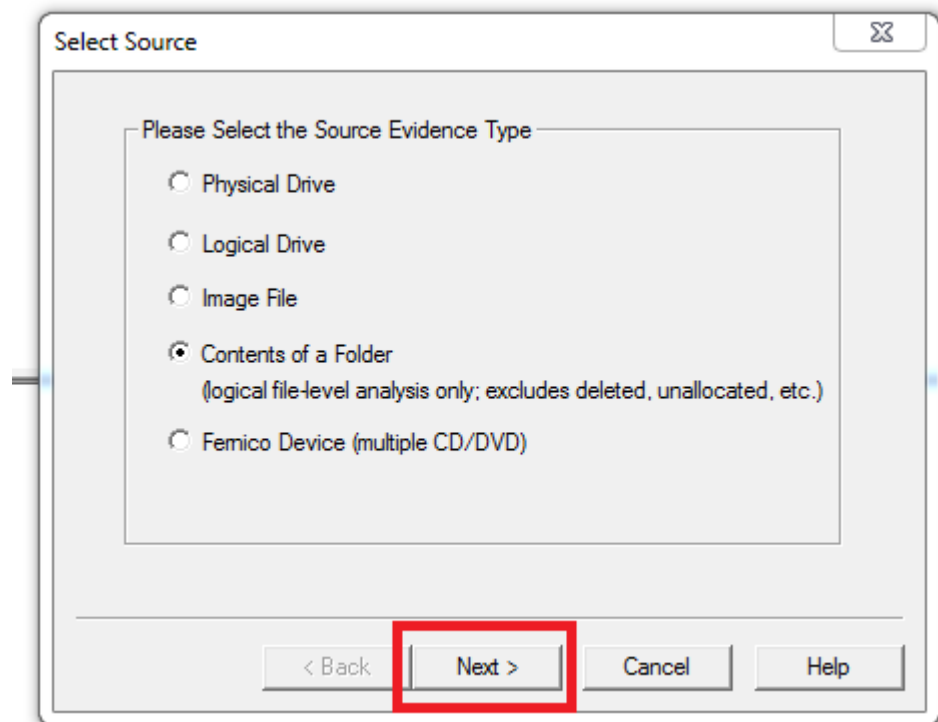




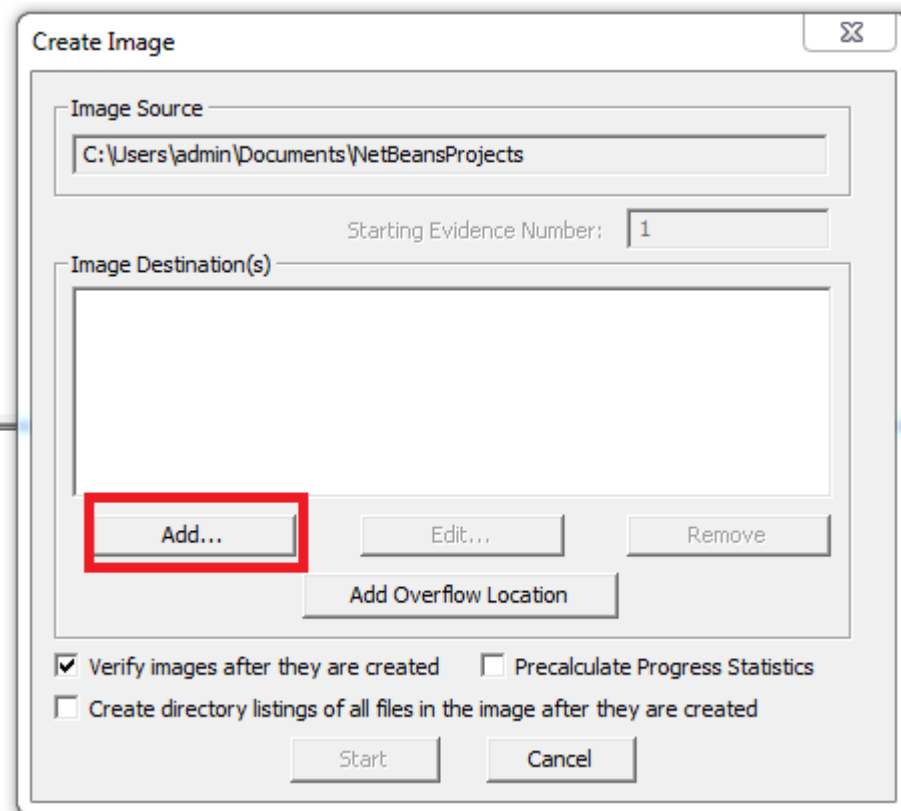
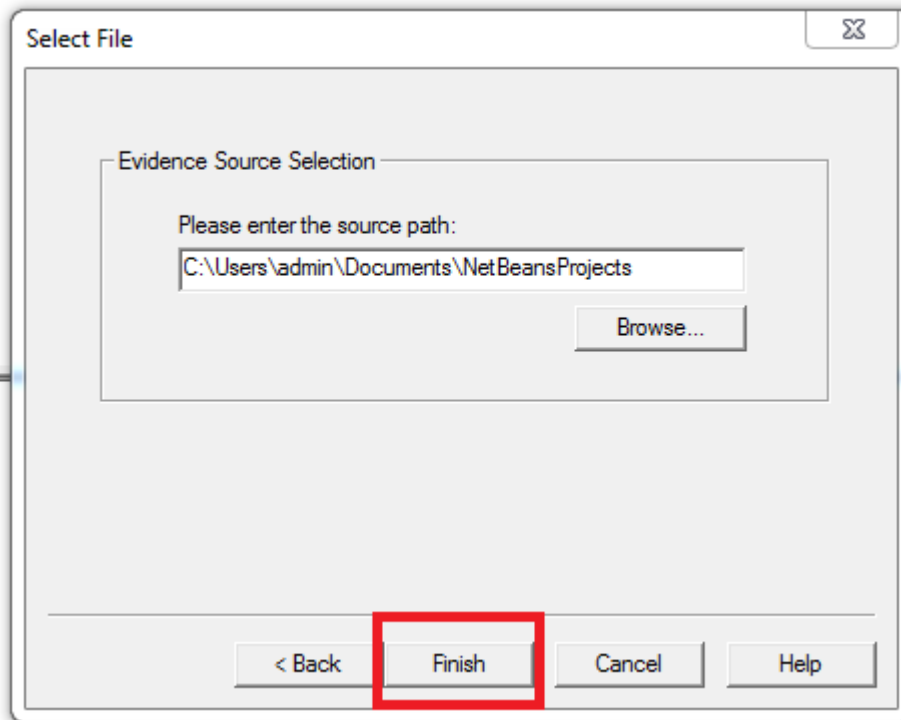


## Practical 7

**Aim:-** Create forensic images of digital devices from volatile data such as memory using imager for computer system.







Evidence Item Information

Case Number: 20

Evidence Number: 01

Unique Description: Network data

Examiner: Michael Winston

Notes: Sensitive Data

< Back Next > Cancel Help

Select Image Destination

Image Destination Folder  
D:\cfprac7 Browse

Image Filename (Excluding Extension)  
networkdata

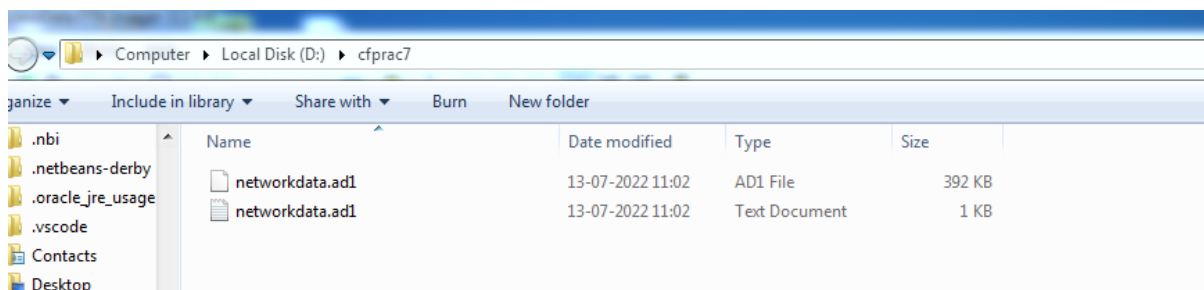
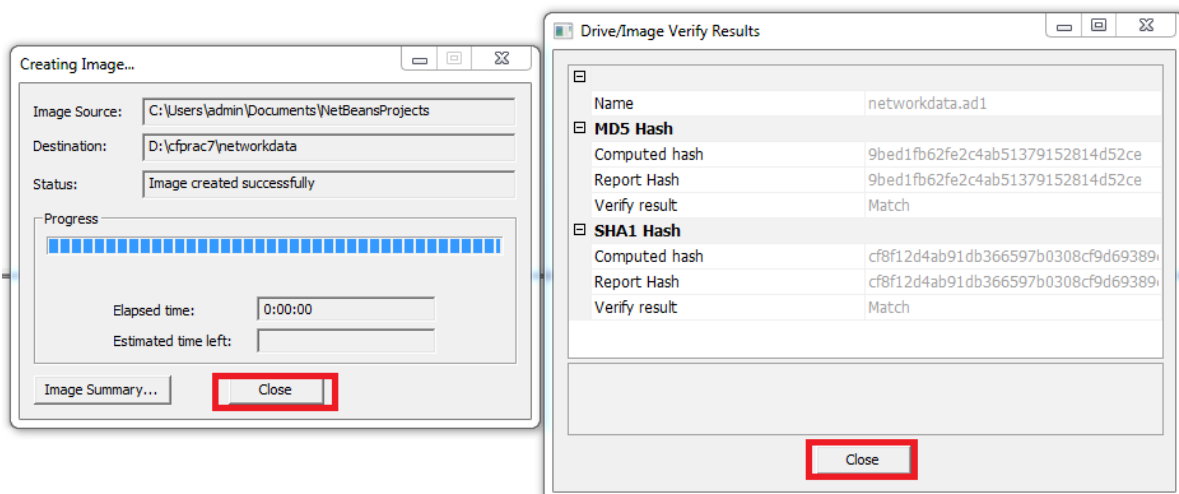
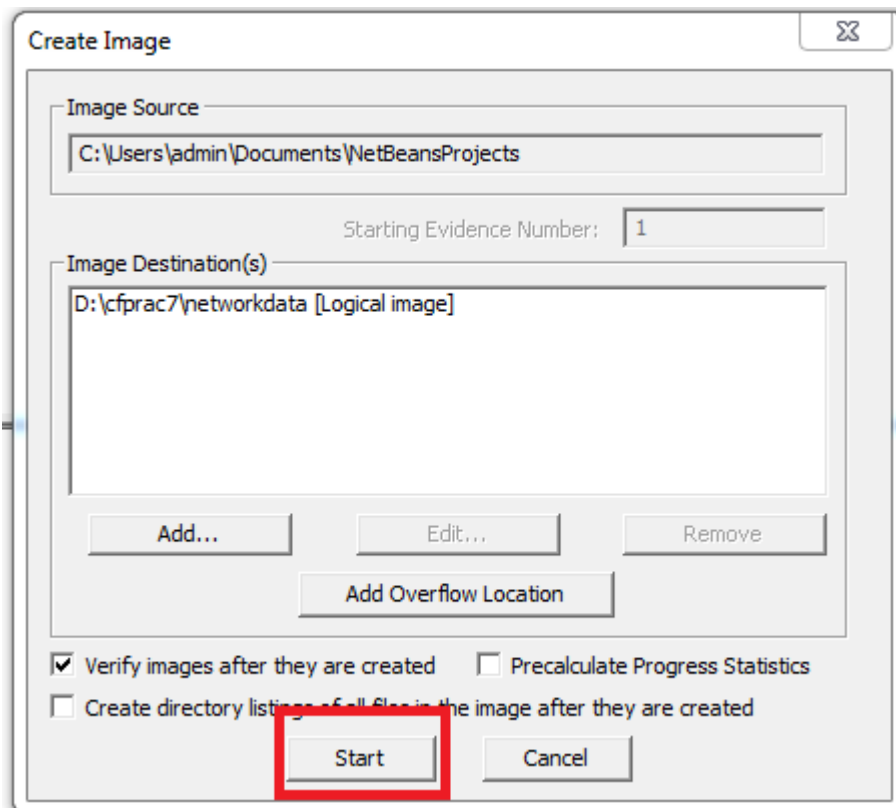
Image Fragment Size (MB) 1500  
For Raw, E01, and AFF formats: 0 = do not fragment

Compression (0=None, 1=Fastest, ..., 9=Smallest) 6

Use AD Encryption ☐

Filter by File Owner ☐

< Back Finish Cancel Help



```
networkdata.ad1 - Notepad
File Edit Format View Help
Created By AccessData® FTK® Imager 3.1.4.6

Case Information:
Acquired using: ADI3.1.4.6
Case Number: 20
Evidence Number: 01
Unique Description: Network data
Examiner: Michael Winston
Notes: Sensitive Data

-----

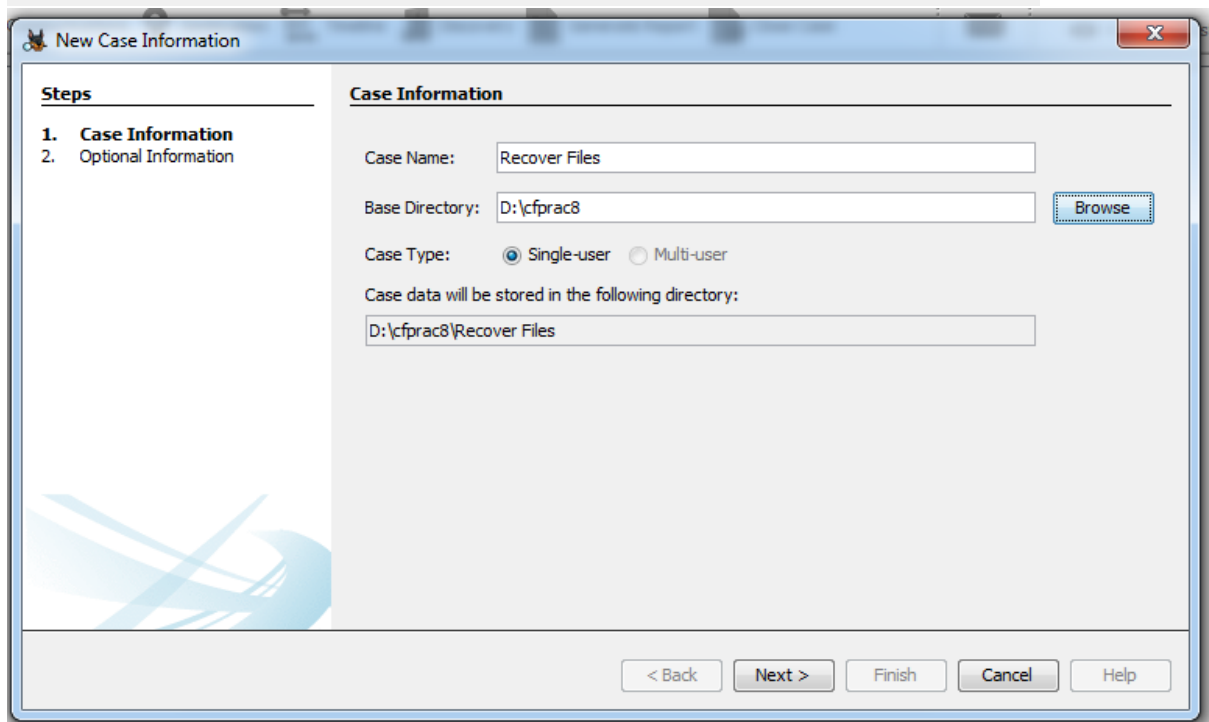
Information for D:\cfprac7\networkdata.ad1:
[Computed Hashes]
MD5 checksum: 9bed1fb62fe2c4ab51379152814d52ce
SHA1 checksum: cf8f12d4ab91db366597b0308cf9d69389cf64ff

Image information:
Acquisition started: Wed Jul 13 11:02:31 2022
Acquisition finished: Wed Jul 13 11:02:31 2022
Segment list:
D:\cfprac7\networkdata.ad1

Image Verification Results:
Verification started: Wed Jul 13 11:02:31 2022
Verification finished: Wed Jul 13 11:02:31 2022
MD5 checksum: 9bed1fb62fe2c4ab51379152814d52ce : verified
SHA1 checksum: cf8f12d4ab91db366597b0308cf9d69389cf64ff : verified
```

## Practical 8

**Aim:-** Recovering and inspecting deleted files.



New Case Information

Steps

1. Case Information

2. **Optional Information**

Optional Information

Case

Number: 26

Examiner

Name: Michael Winston

Phone: 0808126745

Email: abcd@gmail.com

Notes: recovery of deleted data

Organization

Organization analysis is being done for: Not Specified Manage Organizations

< Back

Next >

Finish

Cancel

Help

Add Data Source

Steps

1. **Select Type of Data Source To Add**

2. Select Data Source

3. Configure Ingest Modules

4. Add Data Source

Select Type of Data Source To Add

☐

Disk Image or VM File

☒Local Disk

☐Logical Files

☐Unallocated Space Image File

☐Autopsy Logical Imager Results

☐XRY Text Export

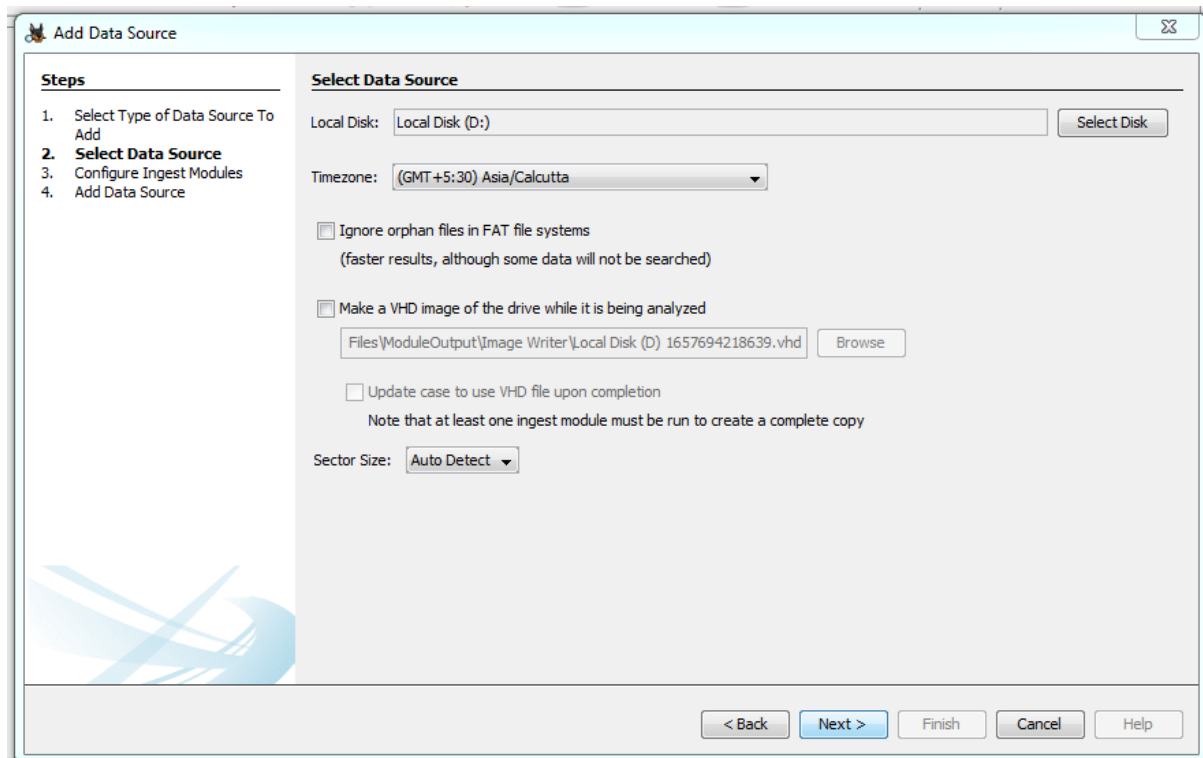
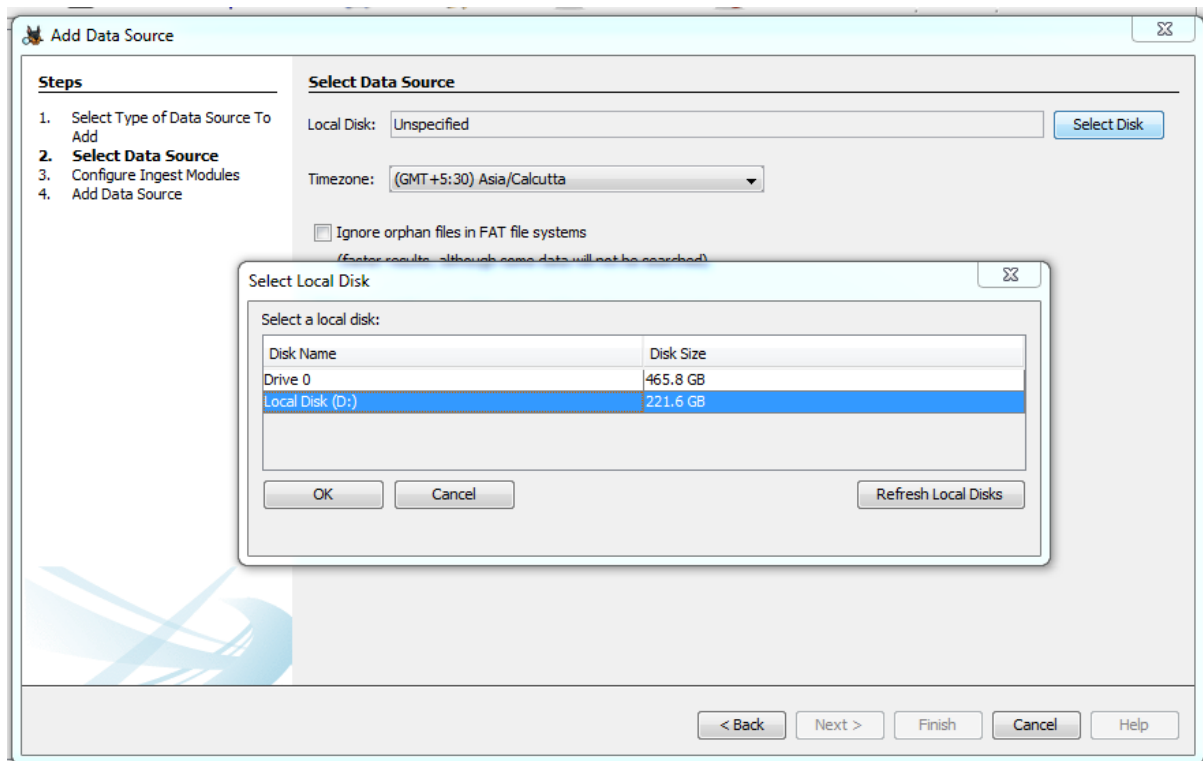
< Back

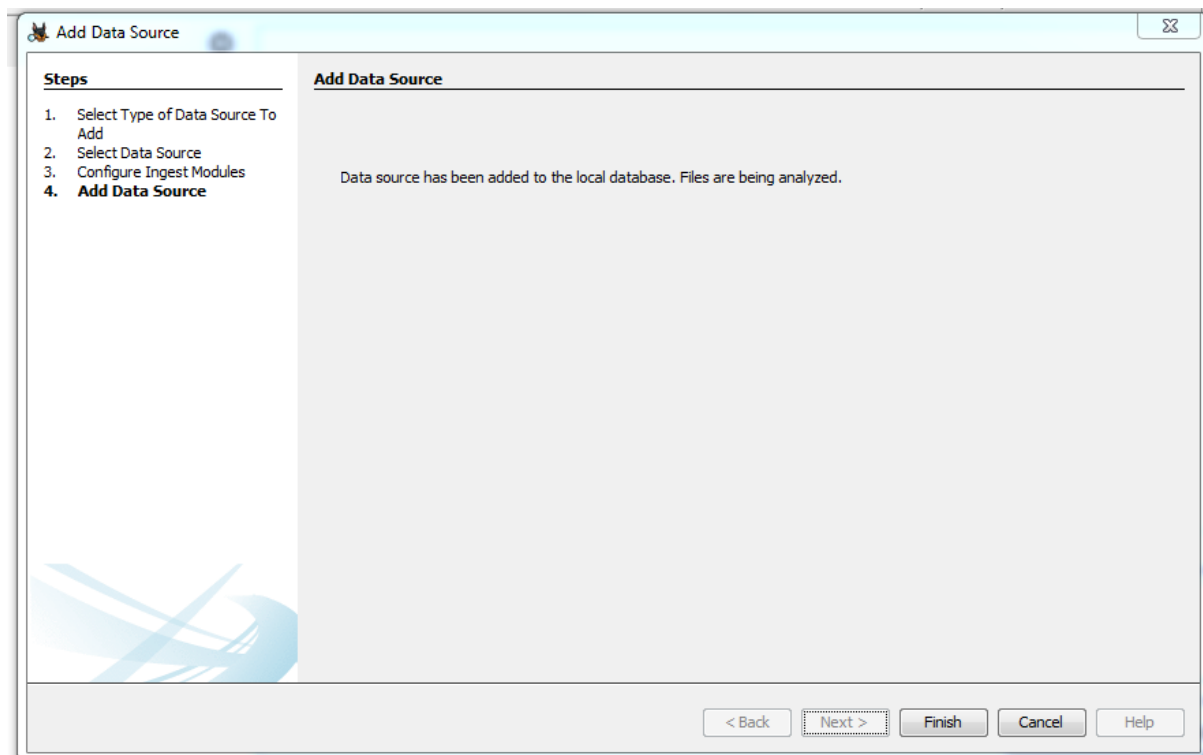
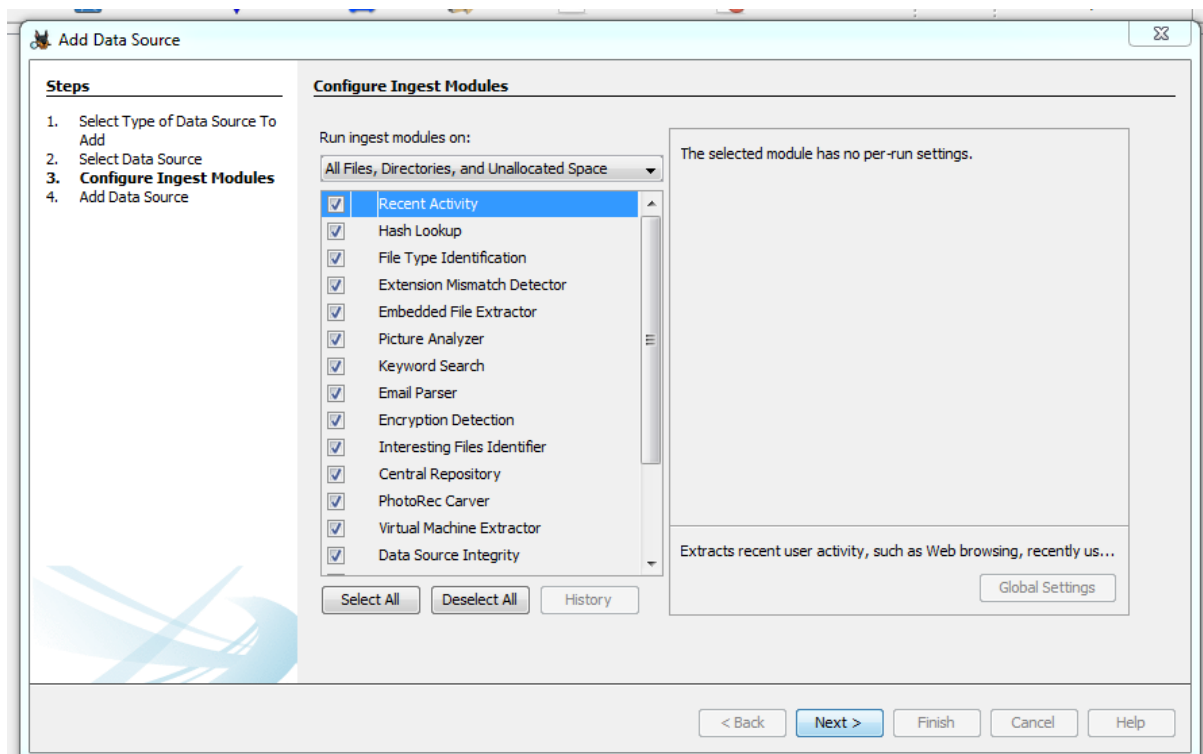
Next >

Finish

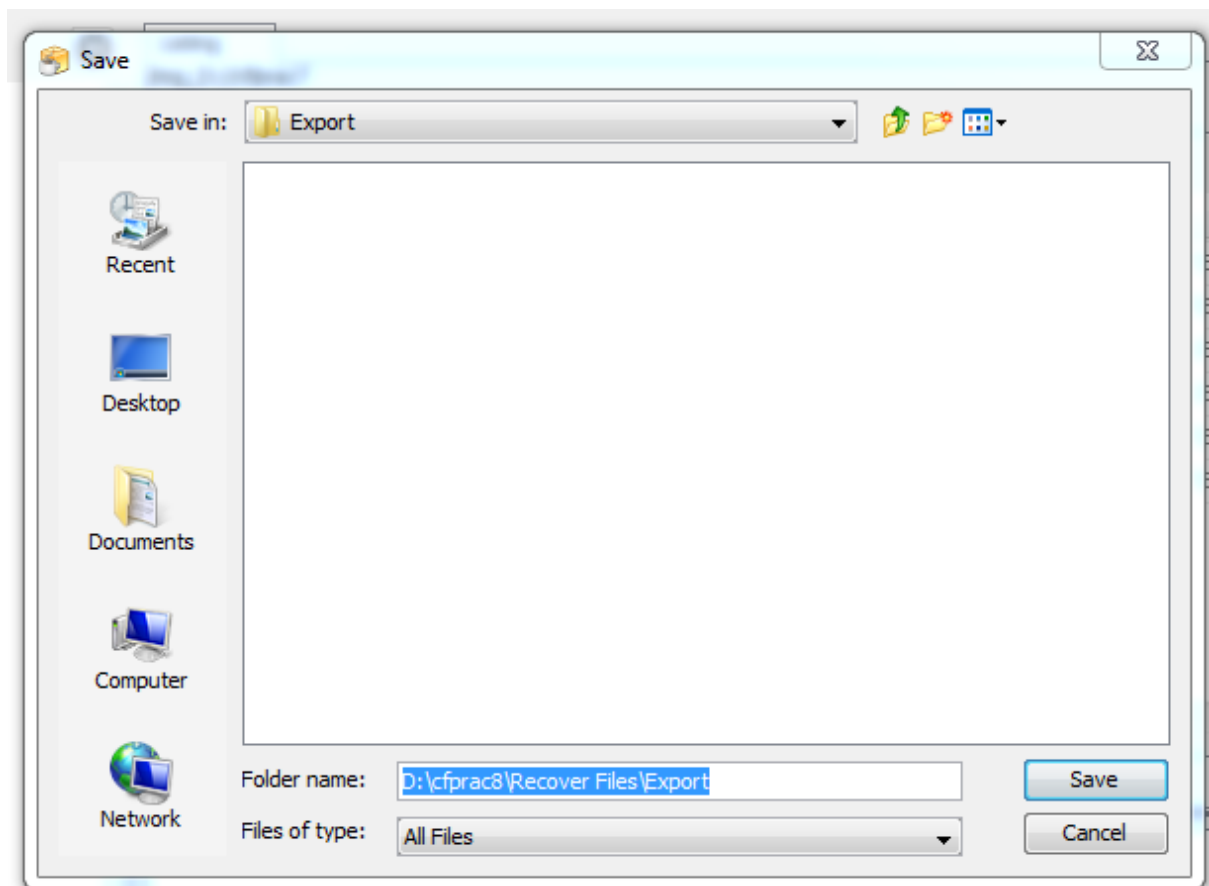
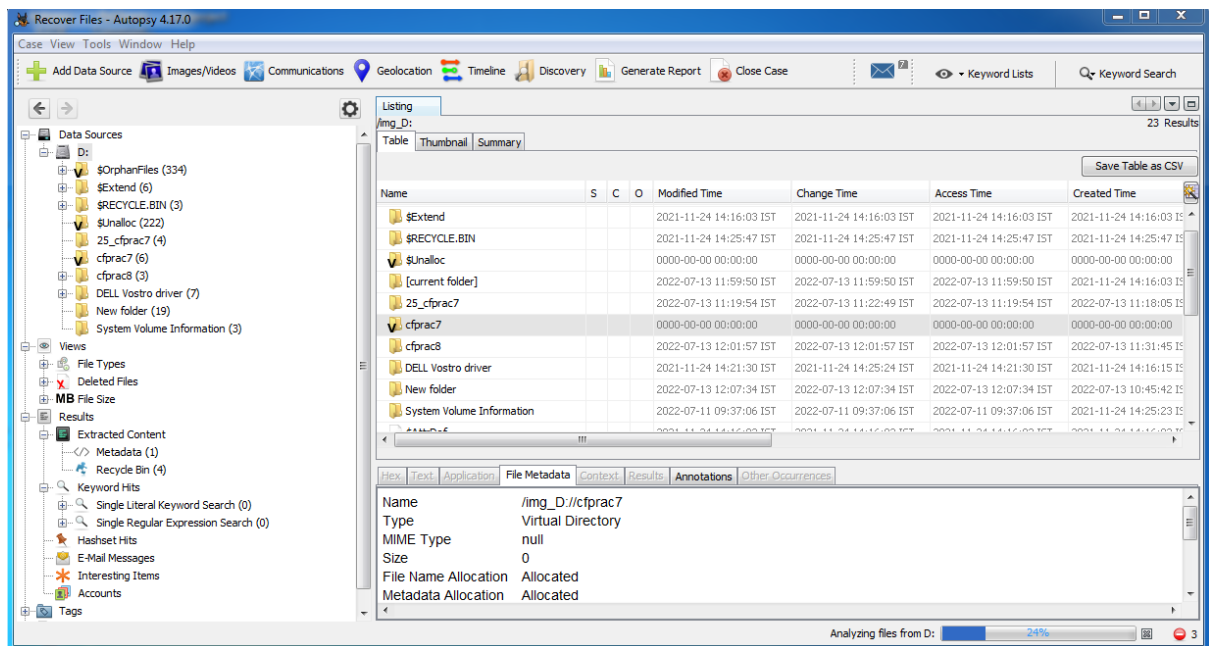
Cancel

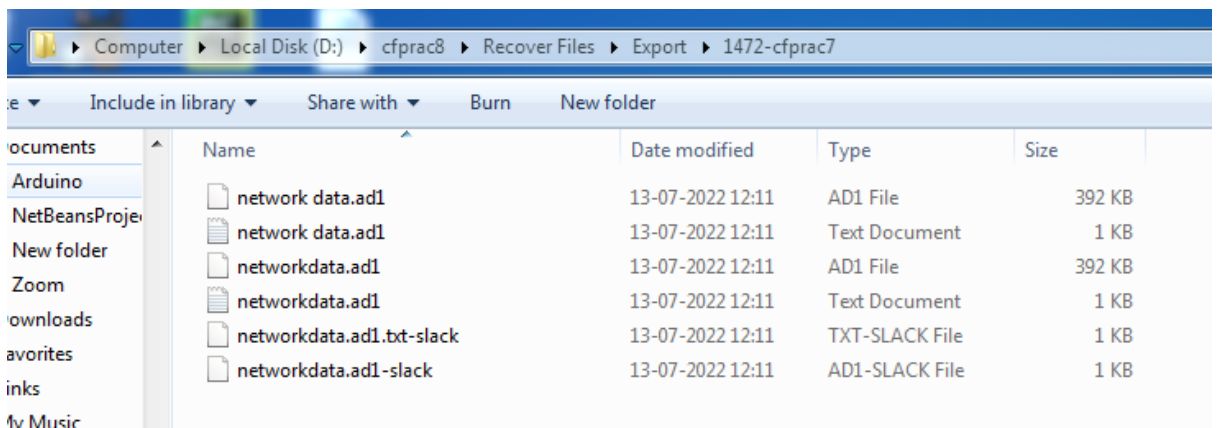
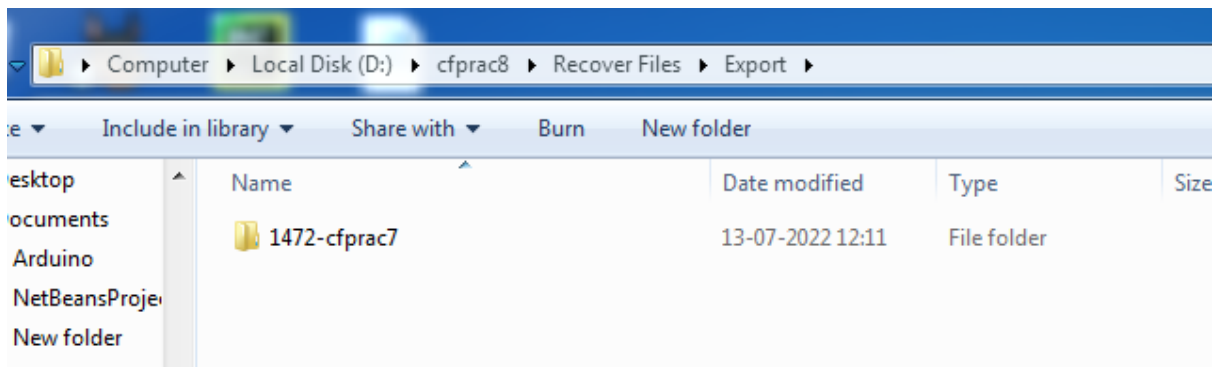
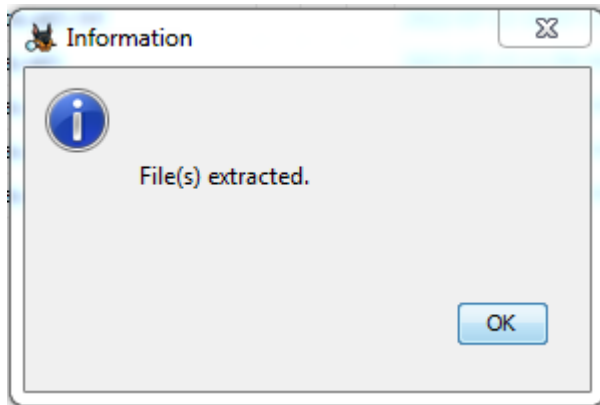
Help











Generate Report

### Select and Configure Report Modules

Report Modules:

- ☐ HTML Report
- ☒ Excel Report
- ☐ Files - Text
- ☐ Save Tagged Hashes
- ☐ TSK Body File
- ☐ Google Earth KML
- ☐ STIX
- ☐ CASE-UCO
- ☐ Portable Case

A report about results and tagged items in Excel (XLS) format.

*This report will be configured on the next screen.*

< Back   Next >   Finish   Cancel   Help

Generate Report

### Select which data source(s) to include

☒ D:

Uncheck All   Check All

< Back   Next   Finish   Cancel   Help

Generate Report

⌵

Configure Report

Select which data to report on:

☒ All Results

☐ All Tagged Results

☐ Specific Tagged Results

Select All

Deselect All

Choose Result Types...

< Back

Next >

Finish

Cancel

Help

Report Generation Progress...

⌵

Complete

Excel Report : D:\cfprac8\Recover Files\Reports\Recover Files Excel Report 07-13-2022-12-14-26\Excel.xlsx

Complete

Cancel

Close

Computer
Local Disk (D:)
cfprac8
Recover Files
Reports
Recover Files Excel Report 07-13-2022-12-14-26

Include in library
Share with
Burn
New folder

Name	Date modified	Type	Size
Excel	13-07-2022 12:14	Microsoft Office E...	7 KB

Clipboard
Font
Align

A1

Summary

	A	B	C
1	Summary		
2			
3	Case Name:	Recover Files	
4	Case Number:	26	
5	Number of data sources in case:	1	
6	Case Notes:	recovery of deleted data	
7	Examiner:	Michael Winston	
8			
9			
10			
11			