Date: - 04/01/2023

Title: Hide a secret file in another file using CMD

Aim:

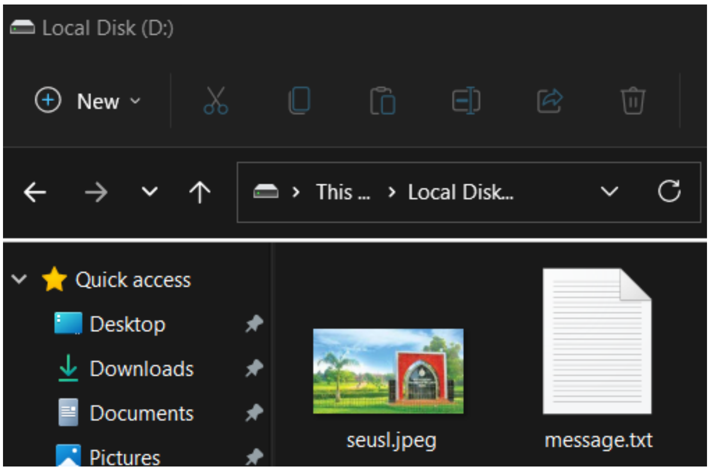
- To get experience on steganography

Task:

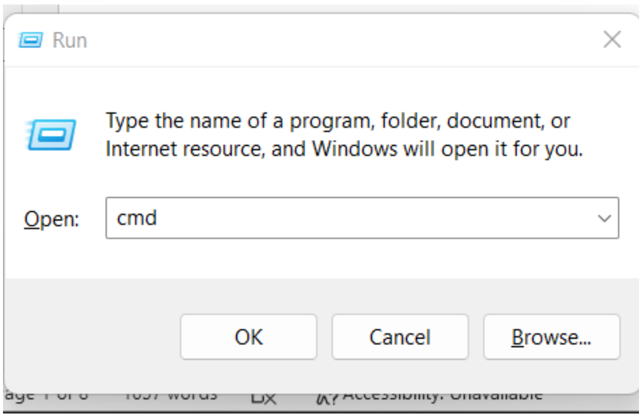
- Hide a secret message/file in an image using CMD
- First Password Protect a Secret Message then Hide Using CMD

Activity 1: Hide a secret message/file in an image using CMD

1. **Step 1:** First get the path of the message file containing Secret Message & the Image file behind which we are going to hide our message, on your local drive. Like in this case, we have put both files in **"D:".**
   In here type something in to the **message.txt** file



2. **Step 2:** Press **"Windows key +R"** from Keyboard, one window will open, Just Type CMD and Press Enter. Command Prompt will be opened.



Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: cmd

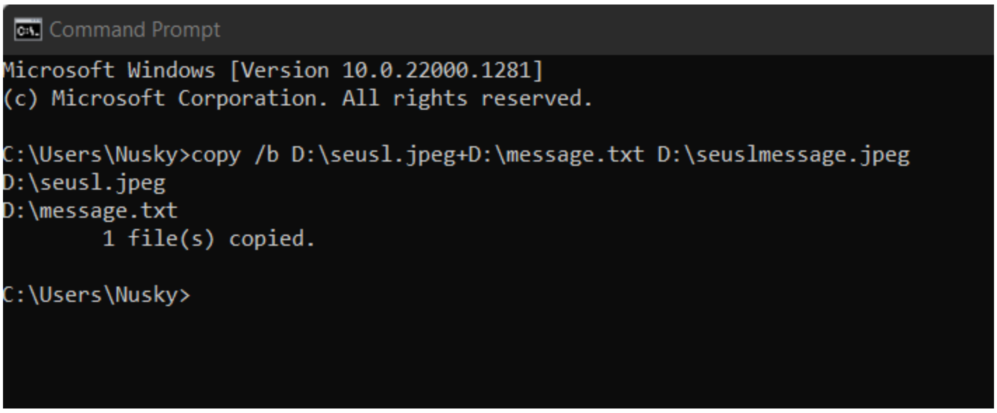
3. **Step 3:** Now, just type one simple command:

   Copy /b <<Path of the Text File.extension>>+<<Path of the Image file.extension>> <<Path of the destination File.extension>>

4. Like in this case, our Text file name is **"message.txt"**, Image File name is "***seusl.jpeg***". So, let's apply simple command:

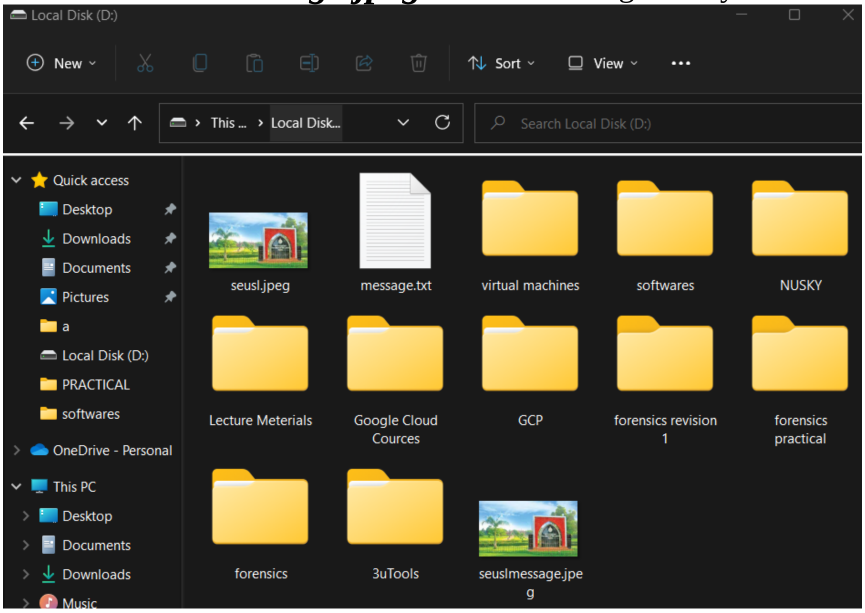
copy /b D:\seusl.jpeg+D:\message.txt D:\seuslmessage.jpeg

and **Press Enter**. Here, "***seuslmessage.jpeg***" is our **steganographic Image** File, created in **"D:"**. This file will contain data of "message file". In here the message has hided behind the output image

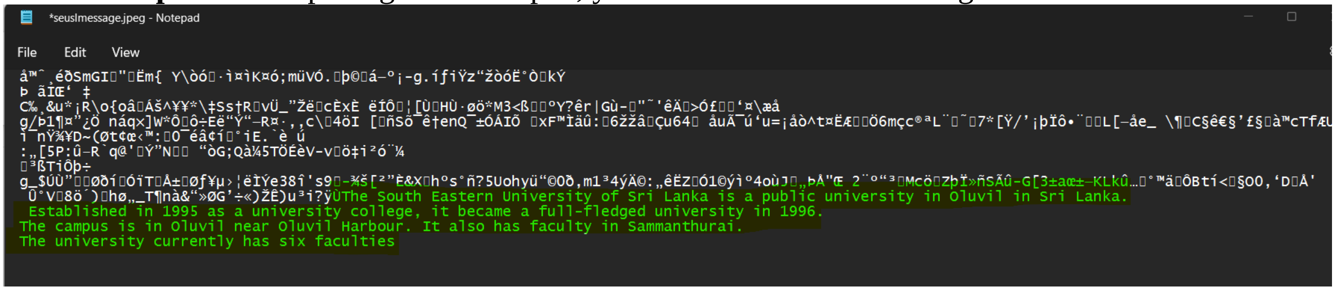


```
Microsoft Windows [Version 10.0.22000.1281]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Nusky>copy /b D:\seusl.jpeg+D:\message.txt D:\seuslmessage.jpeg
D:\seusl.jpeg
D:\message.txt
        1 file(s) copied.

C:\Users\Nusky>
```

Step 4: You can share this "***seuslmessage.jpeg***"- the final image to any friend.



5. **Step 5:** Now, to find the secret message hide in the steganographic Image file, just open this file with **"Notepad"** because our message was in the **".txt"** format and supported program to open it is "Notepad".
   Open the output image with notepad to see the hided message by us.
6. **Step 6:** After opening with Notepad, you can see the secret message here.



```
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C‰¸&u*¡R\o{oâ□Áš^¥¥*\‡Ss†R□vÜ_”Žë□cÈxÈ ëÎÔ□¦[Ù□HÙ·øö*M3<ß□□ºY?êr|Gù-□"˜'êÄ□>Ó£□□‘¤\æå
g/Þ1¶¤”¿Ö náq×]W*Ô□ô÷Eë“Ý“–R¤·,,c\□4öI [□ñSõ¯ê†enQ¯±ÓÁIÕ □xF™Ìäû:□6žžâ□Çu64□ åuÃ¯ú‘u=¡åò^t¤ËÆ□□Ö6mçc®ªL¨□˜□7*[Ÿ/’¡þÏô•¨□□L[–åe_ \¶□C§ê€§’£§□à™cTfÆU
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□³ßTiÔþ÷
g_$ÚÙ”□□Øðí□ÓïT□Å±□øƒ¥µ›¦ëÌÝe38î's9□-¾š[²”È&X□hºs˚ñ?5Uohyü“©Oð,m1³4ýÄ©:„êËZ□Ó1©ýìº4oùJ□„ÞÅ"Œ 2¨º“³□Mcö□ZþÏ»ñSÃû-G[3±aœ±–KLkû…□˚™ä□ÔBtí<□§OO,‘D□Å'
 Û˚V□8ö´)□hø„_T¶nà&“»ØG’÷«)ŽÊ)u³i?ÿÙThe South Eastern University of Sri Lanka is a public university in Oluvil in Sri Lanka.
 Established in 1995 as a university college, it became a full-fledged university in 1996.
The campus is in Oluvil near Oluvil Harbour. It also has faculty in Sammanthurai.
The university currently has six faculties
```
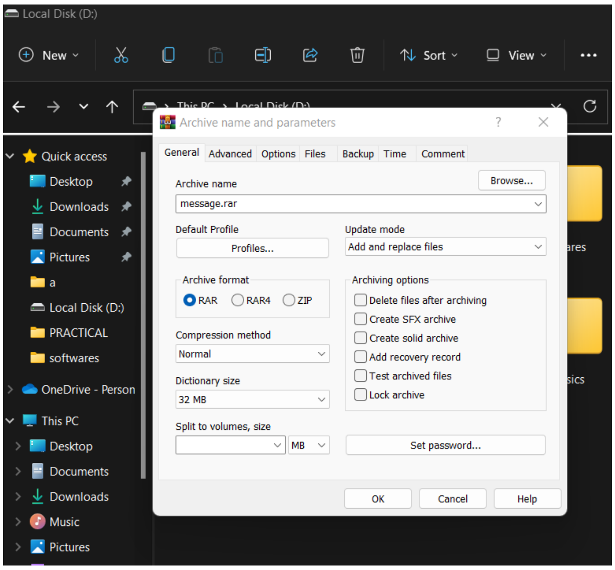

Activity 2: First Password Protect a Secret Message then Hide Using CMD

If anyhow, someone come to know about the secret message, then it will be no More secret. So let's put an extra layer of security by password protecting out secret message text file with Winrar. Just follow the steps:

1. **Step 1:** You must have installed **"Winrar"** program in your System. if not installed, then first download it. The URL is given below.
   https://www.win-rar.com/start.html?&L=0

2. **Step 2:** Right-click on the **"Message.txt"** file [in this case], click on **"Add to Archive"** in Winrar. One Window of Winrar program will be opened. Go to first tab **"General"** and click on **"Set Password"** button to make this file password protected.



Archive name: message.rar

Default Profile

Update mode: Add and replace files

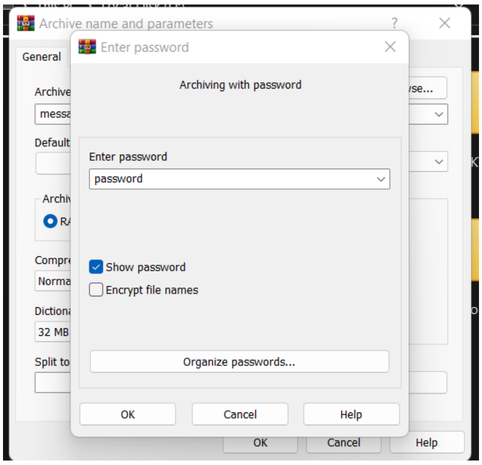
Archive format: ● RAR ○ RAR4 ○ ZIP

Compression method: Normal

Dictionary size: 32 MB

Split to volumes, size: MB

Archiving options:
□ Delete files after archiving
□ Create SFX archive
□ Create solid archive
□ Add recovery record
□ Test archived files
□ Lock archive



Archiving with password

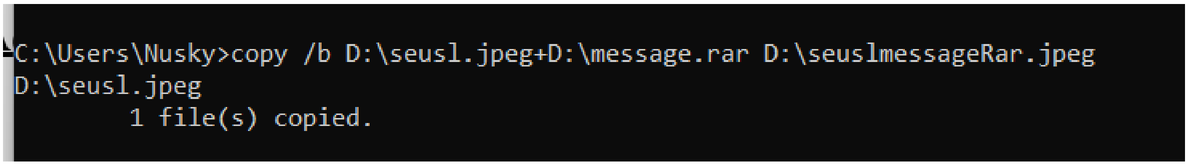
Enter password: password

☑ Show password
□ Encrypt file names

3. **Step 3:** After this, you will have **“message.rar”** file [in this case], now just follow the same command in Command Prompt as:

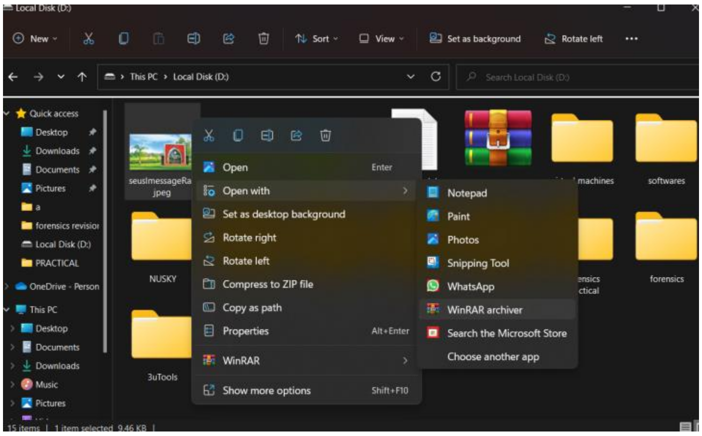
   Copy /b D:\seusl.jpeg+ D:\message.rar D:\seuslmessageRar.jpeg

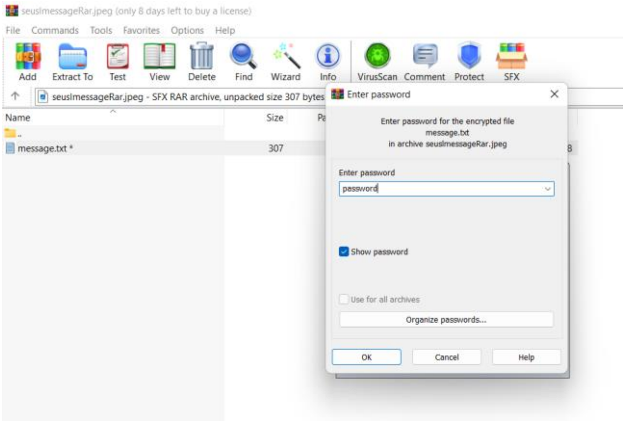
   Here “**seuslmessage*Rar.jpeg***” is output Steganographic file. Just share this file and also a Password key to open it.



```
C:\Users\Nusky>copy /b D:\seusl.jpeg+D:\message.rar D:\seuslmessageRar.jpeg
D:\seusl.jpeg
        1 file(s) copied.
```

4. **Step 4:** Now, If you/your friend want to see the secret message, Just open the **“seuslmessage*Rar.jpeg*”** file with **“Winrar”** to unlock it from the password and Now message.txt file can be opened and the secret message can be read.



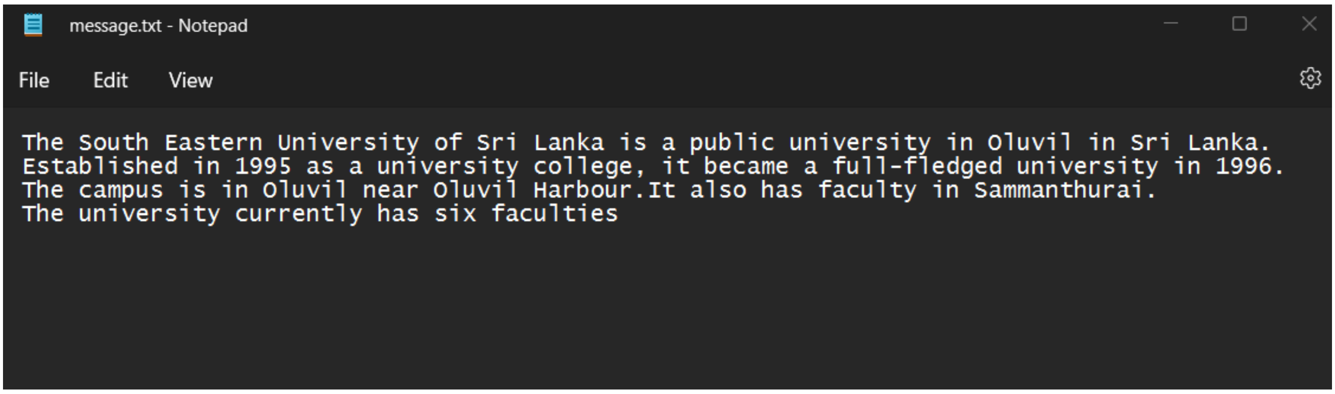


Enter password for the encrypted file message.txt in archive seuslmessageRar.jpeg

Enter password: password

☑ Show password

□ Use for all archives



```
The South Eastern University of Sri Lanka is a public university in Oluvil in Sri Lanka.
Established in 1995 as a university college, it became a full-fledged university in 1996.
The campus is in Oluvil near Oluvil Harbour.It also has faculty in Sammanthurai.
The university currently has six faculties
```

Activity 3: Work with more Steganography Tools

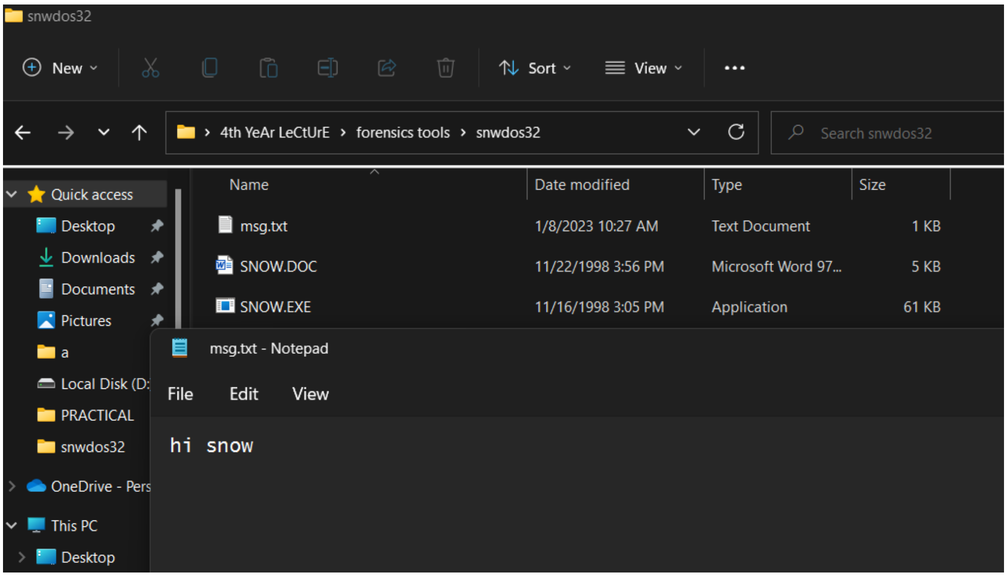
- SNOW - http://www.darkside.com.au/snow/

  Open the uncompressed file.

  • Run the SNOW.exe file.

  • Open CMD and reach the file that you want to hide the message within.

  • Before that make a txt file and type whatever you want.

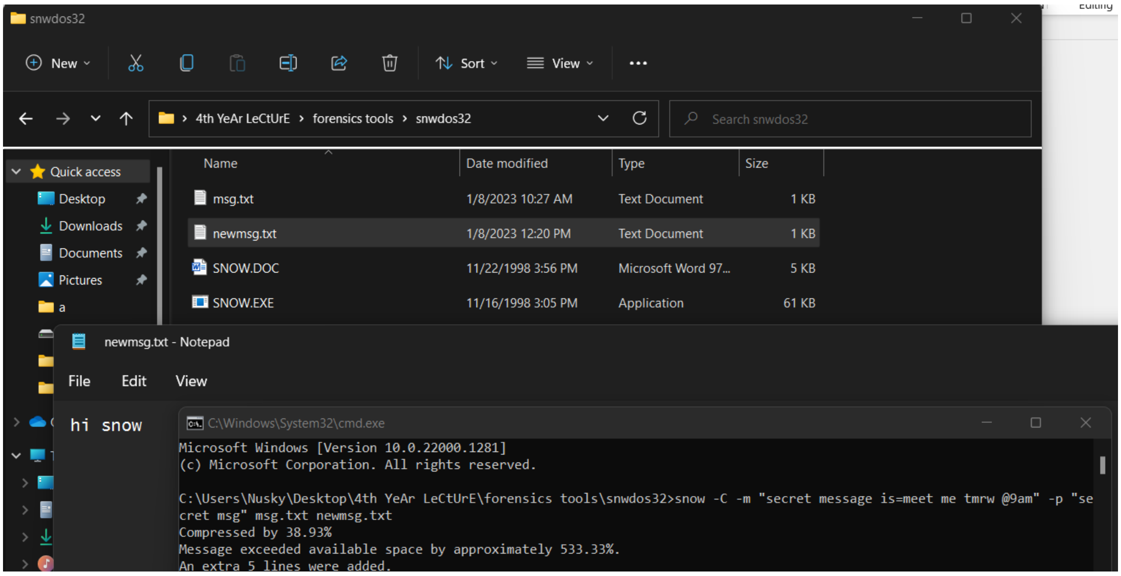


Name	Date modified	Type	Size
msg.txt	1/8/2023 10:27 AM	Text Document	1 KB
SNOW.DOC	11/22/1998 3:56 PM	Microsoft Word 97...	5 KB
SNOW.EXE	11/16/1998 3:05 PM	Application	61 KB

```
hi snow
```

• Write the command like below for concealing the message into a text file:

snow -C -m "secret message is=meet me tmrw @9am" -p "secret msg" msg.txt newmsg.txt



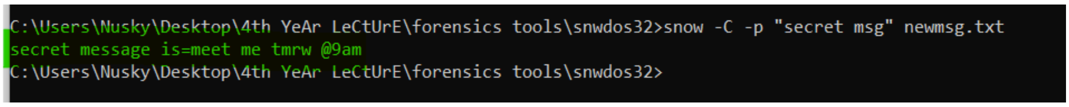
Name	Date modified	Type	Size
msg.txt	1/8/2023 10:27 AM	Text Document	1 KB
newmsg.txt	1/8/2023 12:20 PM	Text Document	1 KB
SNOW.DOC	11/22/1998 3:56 PM	Microsoft Word 97...	5 KB
SNOW.EXE	11/16/1998 3:05 PM	Application	61 KB

```
hi snow
```

```
Microsoft Windows [Version 10.0.22000.1281]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Nusky\Desktop\4th YeAr LeCtUrE\forensics tools\snwdos32>snow -C -m "secret message is=meet me tmrw @9am" -p "se
cret msg" msg.txt newmsg.txt
Compressed by 38.93%
Message exceeded available space by approximately 533.33%.
An extra 5 lines were added.
```

• For extracting the hidden message, use the below command:

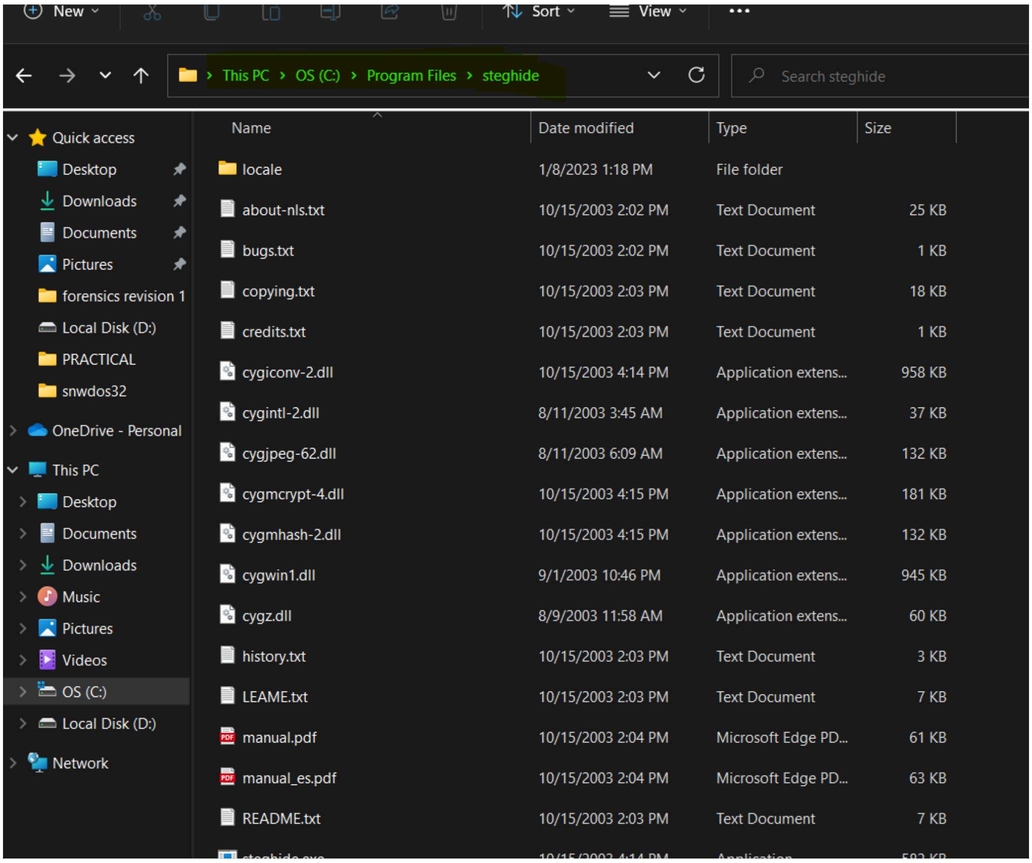
snow -C -p "secret msg" newmsg.txt



```
C:\Users\Nusky\Desktop\4th YeAr LeCtUrE\forensics tools\snwdos32>snow -C -p "secret msg" newmsg.txt
secret message is=meet me tmrw @9am
C:\Users\Nusky\Desktop\4th YeAr LeCtUrE\forensics tools\snwdos32>
```

- Steghide - https://sourceforge.net/projects/steghide/

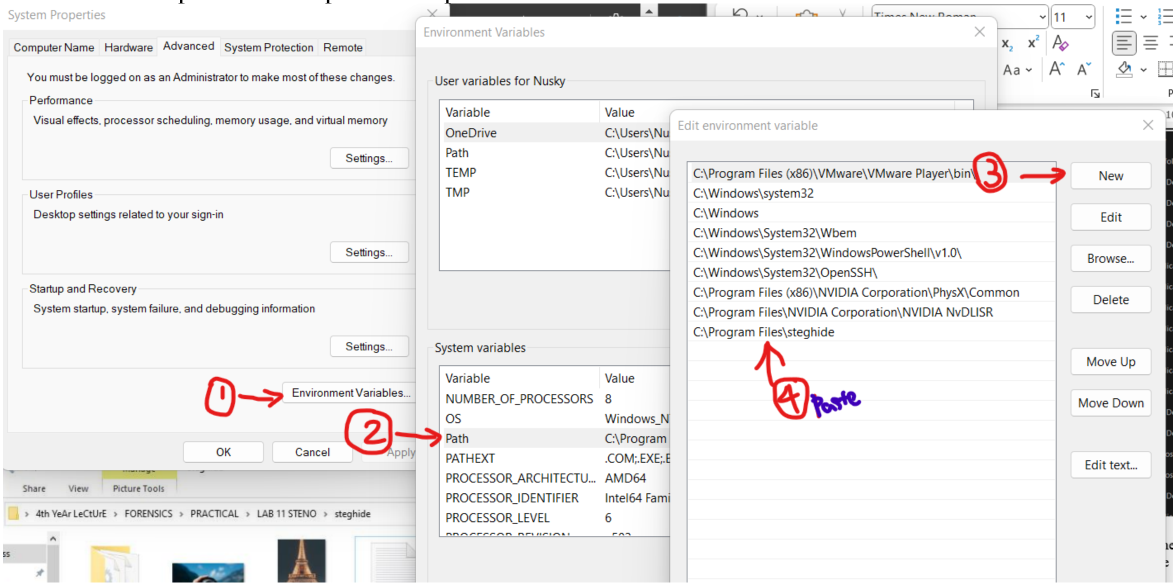
steps: I. After downloading copy paste the extracted steghide folder to your C directory > programfiles



This PC > OS (C:) > Program Files > steghide

Name	Date modified	Type	Size
locale	1/8/2023 1:18 PM	File folder	
about-nls.txt	10/15/2003 2:02 PM	Text Document	25 KB
bugs.txt	10/15/2003 2:02 PM	Text Document	1 KB
copying.txt	10/15/2003 2:03 PM	Text Document	18 KB
credits.txt	10/15/2003 2:03 PM	Text Document	1 KB
cygiconv-2.dll	10/15/2003 4:14 PM	Application extens...	958 KB
cygintl-2.dll	8/11/2003 3:45 AM	Application extens...	37 KB
cygjpeg-62.dll	8/11/2003 6:09 AM	Application extens...	132 KB
cygmcrypt-4.dll	10/15/2003 4:15 PM	Application extens...	181 KB
cygmhash-2.dll	10/15/2003 4:15 PM	Application extens...	132 KB
cygwin1.dll	9/1/2003 10:46 PM	Application extens...	945 KB
cygz.dll	8/9/2003 11:58 AM	Application extens...	60 KB
history.txt	10/15/2003 2:03 PM	Text Document	3 KB
LEAME.txt	10/15/2003 2:03 PM	Text Document	7 KB
manual.pdf	10/15/2003 2:04 PM	Microsoft Edge PD...	61 KB
manual_es.pdf	10/15/2003 2:04 PM	Microsoft Edge PD...	63 KB
README.txt	10/15/2003 2:03 PM	Text Document	7 KB

II. Then double click the steghide folder and copy the path of the folder the go to edit environmental variables and click on > path> new> paste that path and click ok to create new variable



System Properties

Computer Name | Hardware | Advanced | System Protection | Remote

You must be logged on as an Administrator to make most of these changes.

Performance
Visual effects, processor scheduling, memory usage, and virtual memory

User Profiles
Desktop settings related to your sign-in

Startup and Recovery
System startup, system failure, and debugging information

Environment Variables

User variables for Nusky

Variable	Value
OneDrive	C:\Users\Nu
Path	C:\Users\Nu
TEMP	C:\Users\Nu
TMP	C:\Users\Nu

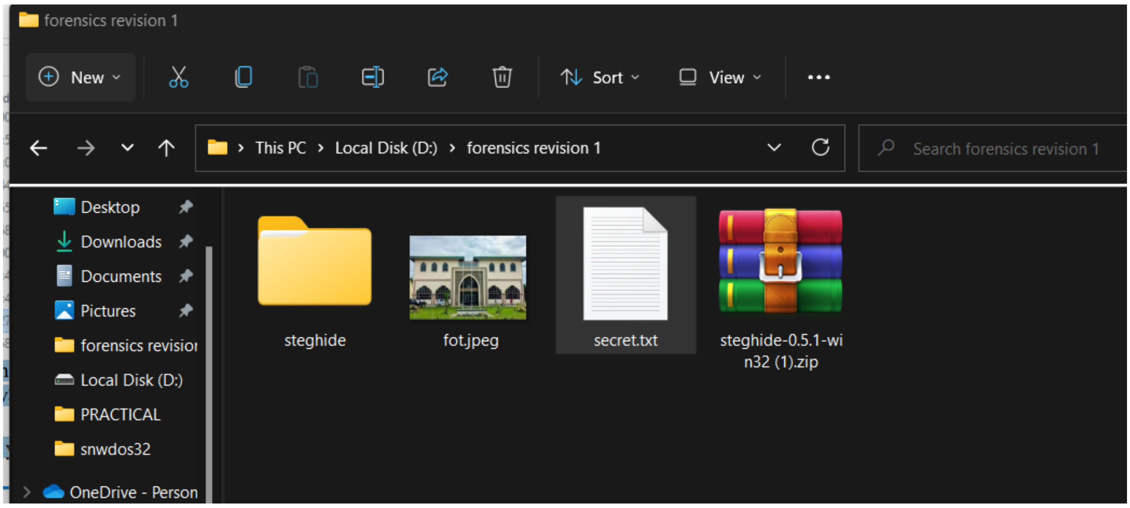
System variables

Variable	Value
NUMBER_OF_PROCESSORS	8
OS	Windows_N
Path	C:\Program
PATHEXT	.COM;.EXE;.E
PROCESSOR_ARCHITECTU...	AMD64
PROCESSOR_IDENTIFIER	Intel64 Fami
PROCESSOR_LEVEL	6

Edit environment variable

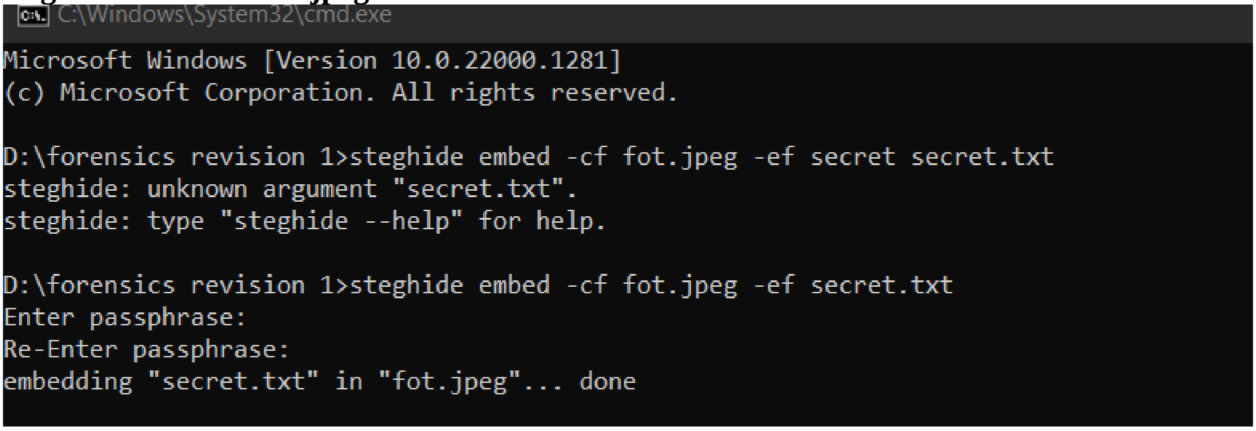
```
C:\Program Files (x86)\VMware\VMware Player\bin\
C:\Windows\system32
C:\Windows
C:\Windows\System32\Wbem
C:\Windows\System32\WindowsPowerShell\v1.0\
C:\Windows\System32\OpenSSH\
C:\Program Files (x86)\NVIDIA Corporation\PhysX\Common
C:\Program Files\NVIDIA Corporation\NVIDIA NvDLISR
C:\Program Files\steghide
```

III. Then open CMD and move to the folder where you have saved the hiding image ,txt files



IV.Using the following command we can hide a image or audio or txt or video files

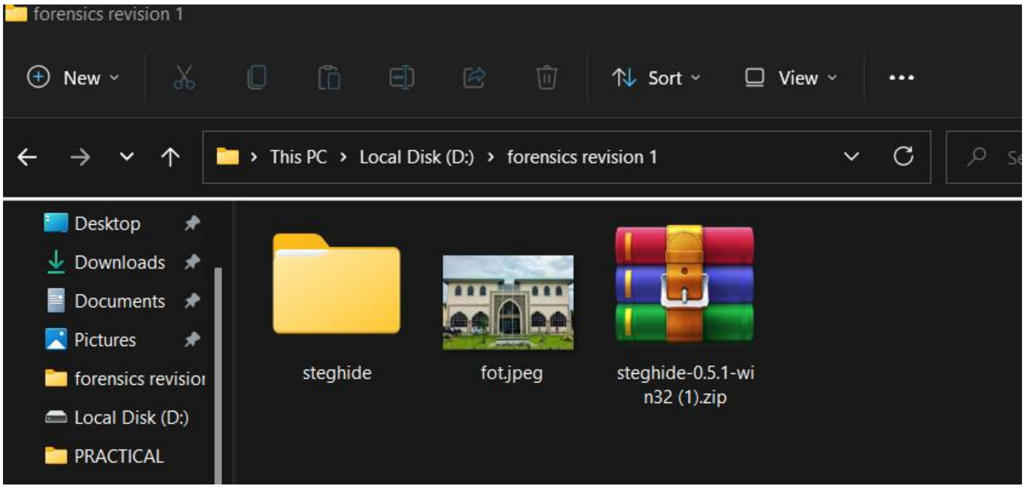
steghide embed -cf fot.jpeg -ef secret.txt



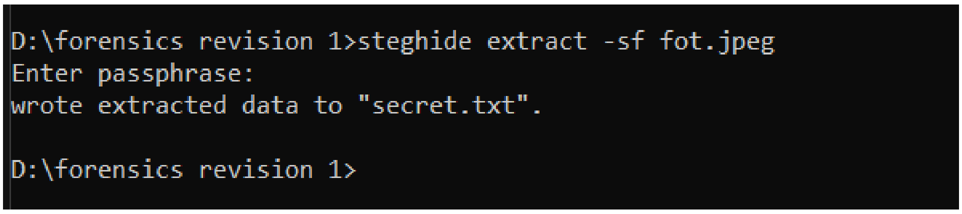
```
Microsoft Windows [Version 10.0.22000.1281]
(c) Microsoft Corporation. All rights reserved.

D:\forensics revision 1>steghide embed -cf fot.jpeg -ef secret secret.txt
steghide: unknown argument "secret.txt".
steghide: type "steghide --help" for help.

D:\forensics revision 1>steghide embed -cf fot.jpeg -ef secret.txt
Enter passphrase:
Re-Enter passphrase:
embedding "secret.txt" in "fot.jpeg"... done
```

*here I have used **“hi”** to passphrase

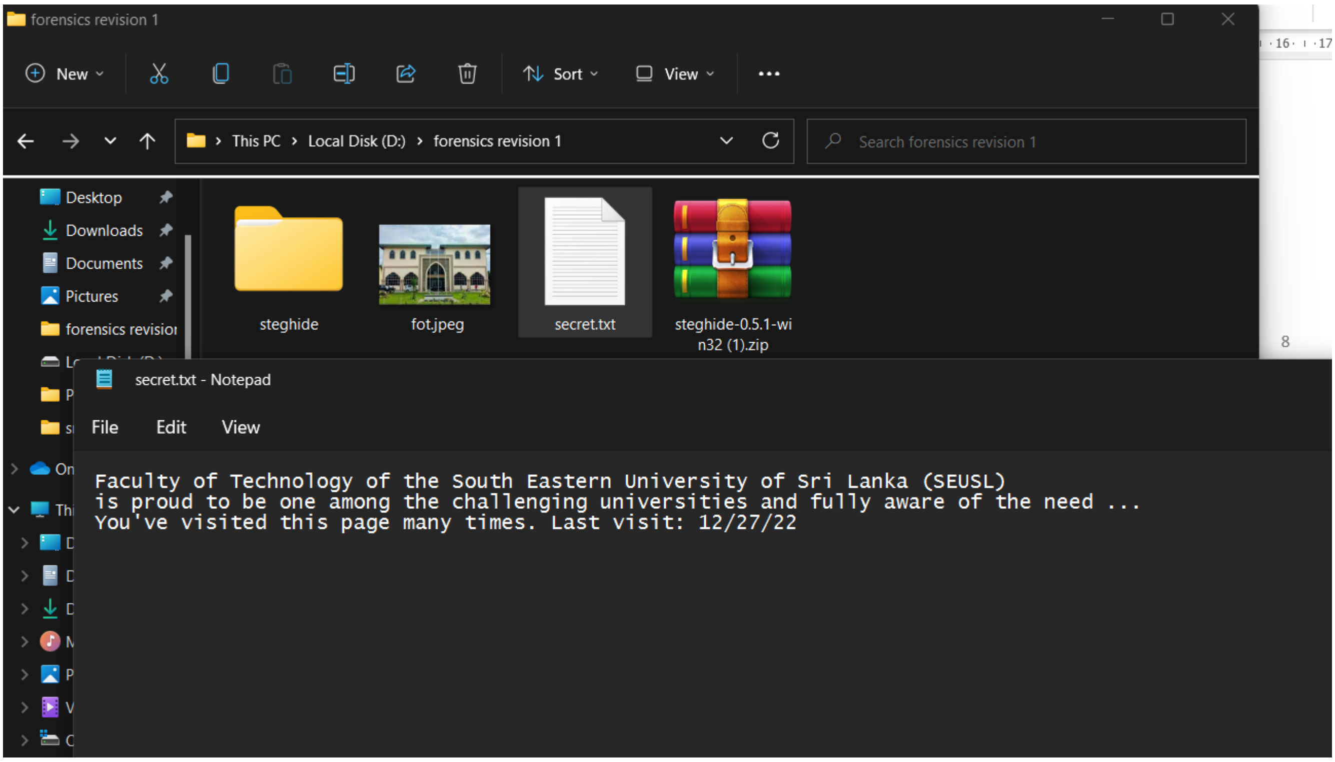
V. after hiding the secret.txt file we can delete the appropriate txt file and using the following command to extract the image to see what is inside the image



steghide extract -sf fot.jpeg



```
D:\forensics revision 1>steghide extract -sf fot.jpeg
Enter passphrase:
wrote extracted data to "secret.txt".

D:\forensics revision 1>
```



```
Faculty of Technology of the South Eastern University of Sri Lanka (SEUSL)
is proud to be one among the challenging universities and fully aware of the need ...
You've visited this page many times. Last visit: 12/27/22
```

SNOW commands

snow It tells the CMD window that we are using the snow tool for steganography.

-C It is for compressing the data if concealing, or uncompressing it while extracting.

-p It is for a password for concealing and extracting.

new.txt The file in which you want to conceal the message within.

newdata.txt The file in which you want the output.

COMMANDS used in steghide

In this section the commands for steghide are listed. The first argument must always be one of these commands. You can supply additional arguments to the embed, extract and info commands. The other commands to not take any arguments.

embed, --embed
Embed secret data in a cover file thereby creating a stego file.
extract, --extract
Extract secret data from a stego file.

EMBEDDING

You should use the embed command if you want to embed secret data in a cover file. The following arguments can be used with the embed command:

-ef, --embedfile *filename*
Specify the file that will be embedded (the file that contains the secret message). Note that steghide embeds the original file name in the stego file. When extracting data (see below) the default behaviour is to save the embedded file into the current directory under its original name. If this argument is omitted or *filename* is -, steghide will read the secret data from standard input.

-cf, --coverfile *filename*
Specify the cover file that will be used to embed data. The cover file must be in one of the following formats: AU, BMP, JPEG or WAV. The file-format will be detected automatically based on header information (the extension is not relevant). If this argument is omitted or *filename* is -, steghide will read the cover file from standard input.

-sf, --stegofile *filename*
Specify the name for the stego file that will be created. If this argument is omitted when calling steghide with the embed command, then the modifications to embed the secret

data will be made directly to the cover file without saving it under a new name.

EXTRACTING

If you have received a file that contains a message that has been embedded with steghide, use the extract command to extract it. The following arguments can be used with this command.

-sf, --stegofile *filename*
Specify the stego file (the file that contains embedded data). If this argument is omitted or *filename* is -, steghide will read a stego file from standard input.

Title: Metadata extraction and analysis using EXIF Tool in Windows.

Aim:

- To get experience on analyzing metadata files using EXIF Tool.

Task:

- Download & analyze the metadata files

Activities:

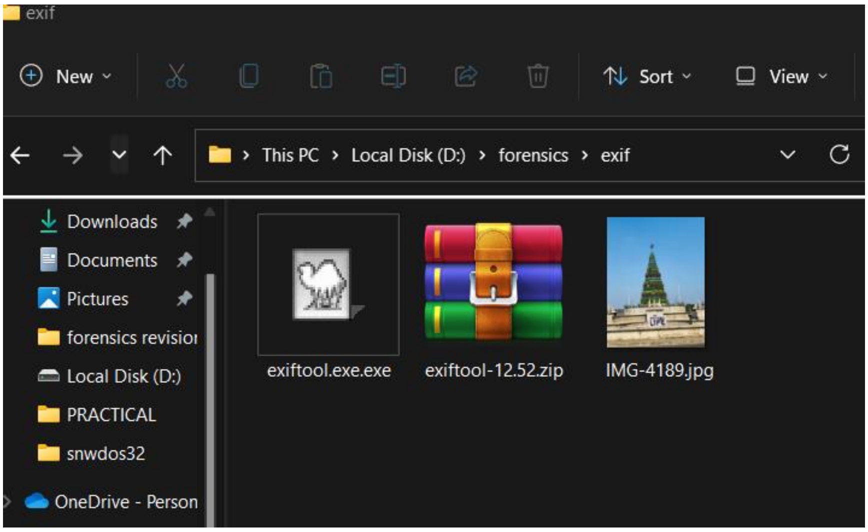
Download EXIF Tool:

https://exiftool.org/

I. Metadata Analysis of the Picture

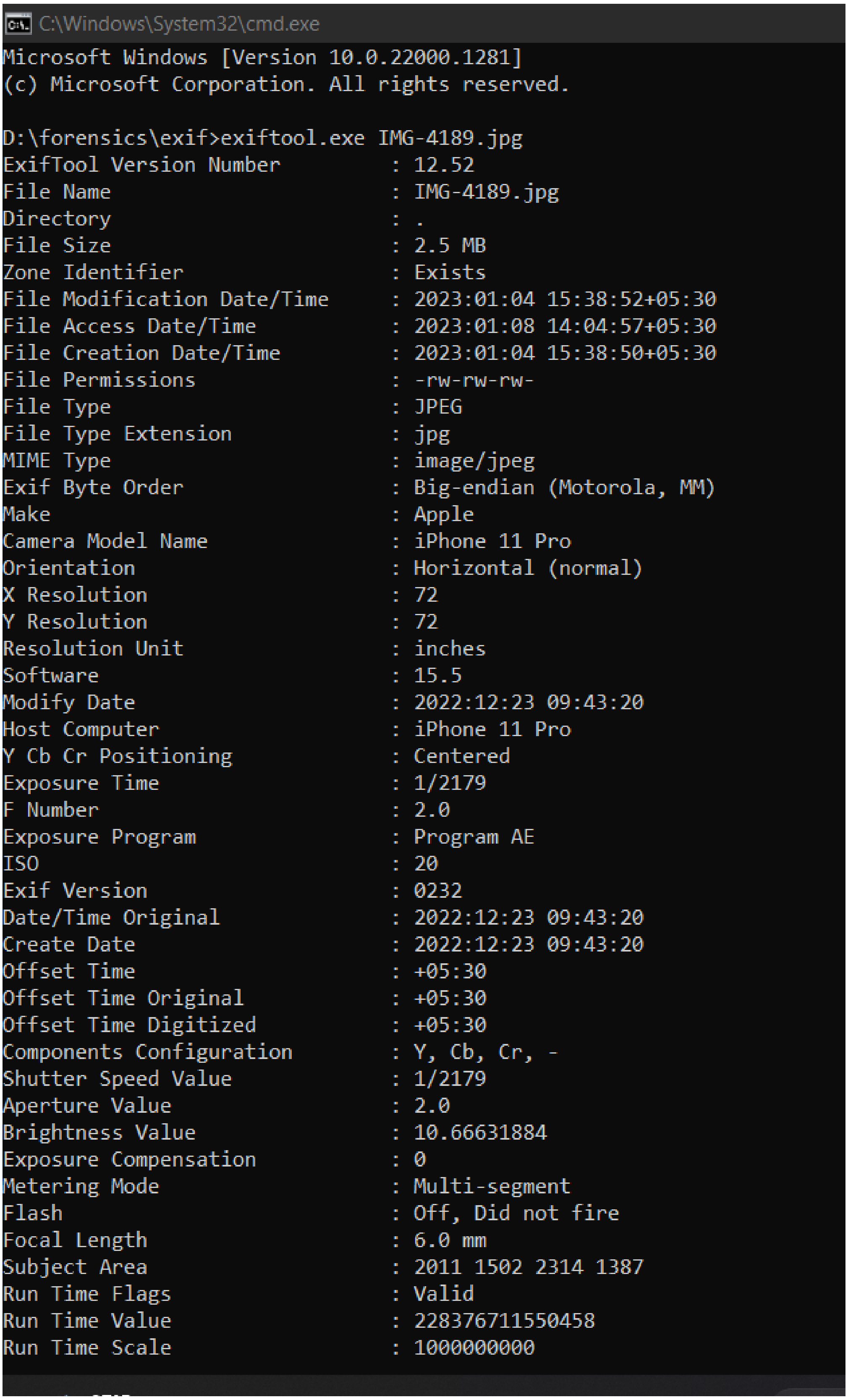
Conduct a forensically analysis to identify the following details using appropriate forensically tools.

1. Download EXIF Tool.
2. Unzip the downloaded folder.
3. In a particular folder, insert the needed images files to be analyzed, downloaded Exif-tool and the unzipped version of it as shown below.

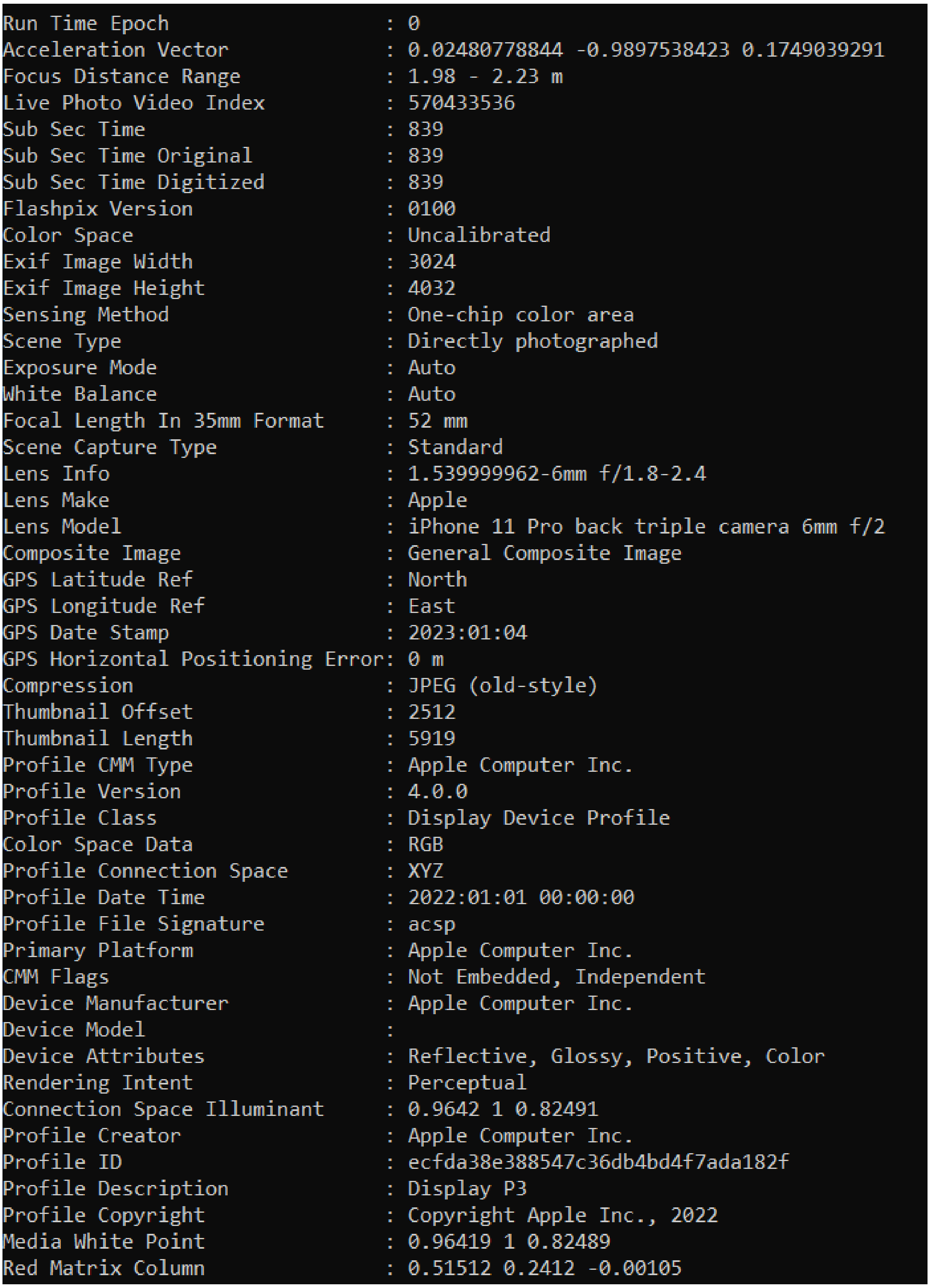


4. Open the command prompt of the specific folder as shown below to view the metadata of the “<imageFileName>” file.

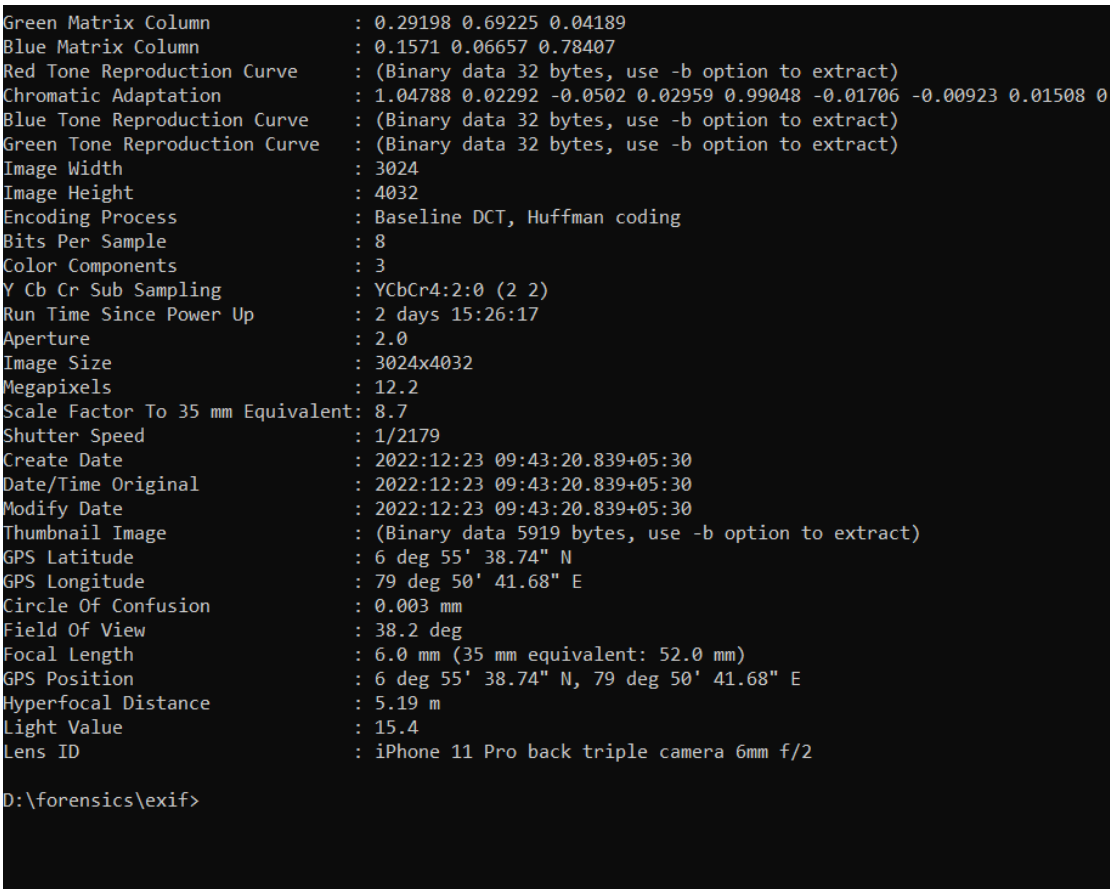
exiftool.exe IMG-4189.jpg



```
Microsoft Windows [Version 10.0.22000.1281]
(c) Microsoft Corporation. All rights reserved.

D:\forensics\exif>exiftool.exe IMG-4189.jpg
ExifTool Version Number         : 12.52
File Name                       : IMG-4189.jpg
Directory                       : .
File Size                       : 2.5 MB
Zone Identifier                 : Exists
File Modification Date/Time     : 2023:01:04 15:38:52+05:30
File Access Date/Time           : 2023:01:08 14:04:57+05:30
File Creation Date/Time         : 2023:01:04 15:38:50+05:30
File Permissions                : -rw-rw-rw-
File Type                       : JPEG
File Type Extension             : jpg
MIME Type                       : image/jpeg
Exif Byte Order                 : Big-endian (Motorola, MM)
Make                            : Apple
Camera Model Name               : iPhone 11 Pro
Orientation                     : Horizontal (normal)
X Resolution                    : 72
Y Resolution                    : 72
Resolution Unit                 : inches
Software                        : 15.5
Modify Date                     : 2022:12:23 09:43:20
Host Computer                   : iPhone 11 Pro
Y Cb Cr Positioning             : Centered
Exposure Time                   : 1/2179
F Number                        : 2.0
Exposure Program                : Program AE
ISO                             : 20
Exif Version                    : 0232
Date/Time Original              : 2022:12:23 09:43:20
Create Date                     : 2022:12:23 09:43:20
Offset Time                     : +05:30
Offset Time Original            : +05:30
Offset Time Digitized           : +05:30
Components Configuration        : Y, Cb, Cr, -
Shutter Speed Value             : 1/2179
Aperture Value                  : 2.0
Brightness Value                : 10.66631884
Exposure Compensation           : 0
Metering Mode                   : Multi-segment
Flash                           : Off, Did not fire
Focal Length                    : 6.0 mm
Subject Area                    : 2011 1502 2314 1387
Run Time Flags                  : Valid
Run Time Value                  : 228376711550458
Run Time Scale                  : 1000000000
```



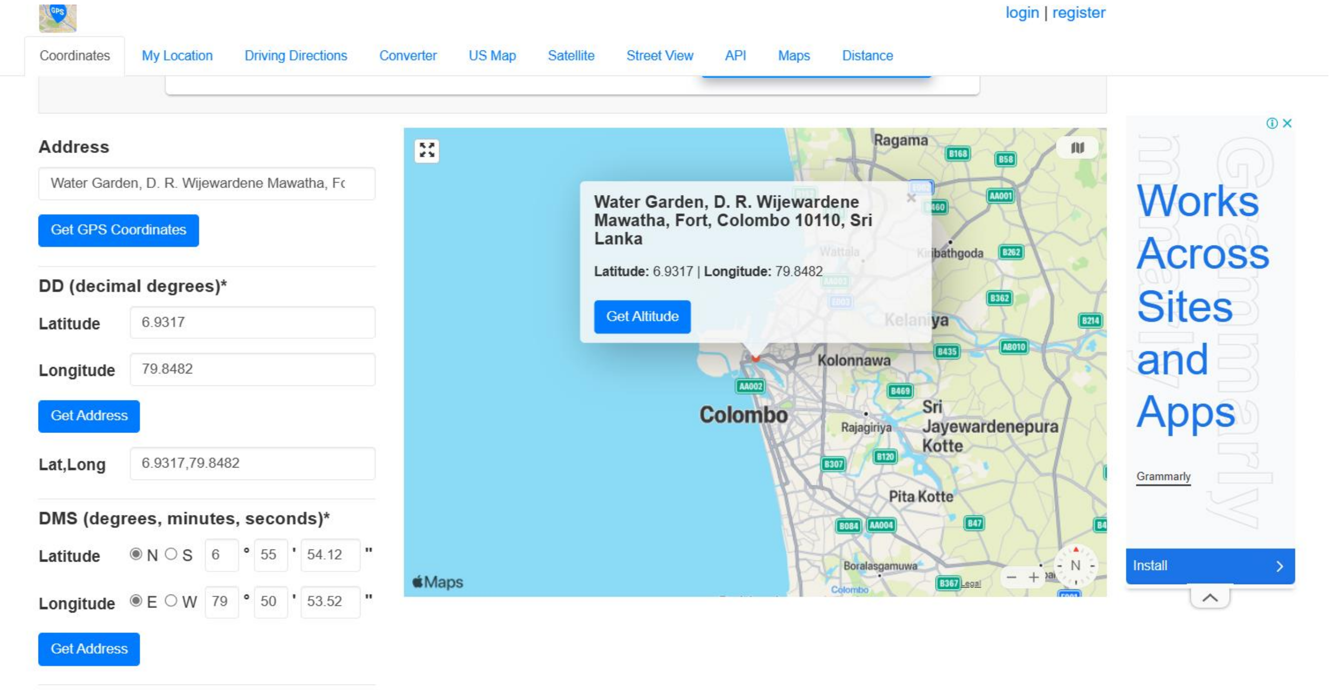
```
Run Time Epoch                  : 0
Acceleration Vector             : 0.02480778844 -0.9897538423 0.1749039291
Focus Distance Range            : 1.98 - 2.23 m
Live Photo Video Index          : 570433536
Sub Sec Time                    : 839
Sub Sec Time Original           : 839
Sub Sec Time Digitized          : 839
Flashpix Version                : 0100
Color Space                     : Uncalibrated
Exif Image Width                : 3024
Exif Image Height               : 4032
Sensing Method                  : One-chip color area
Scene Type                      : Directly photographed
Exposure Mode                   : Auto
White Balance                   : Auto
Focal Length In 35mm Format     : 52 mm
Scene Capture Type              : Standard
Lens Info                       : 1.539999962-6mm f/1.8-2.4
Lens Make                       : Apple
Lens Model                      : iPhone 11 Pro back triple camera 6mm f/2
Composite Image                 : General Composite Image
GPS Latitude Ref                : North
GPS Longitude Ref               : East
GPS Date Stamp                  : 2023:01:04
GPS Horizontal Positioning Error: 0 m
Compression                     : JPEG (old-style)
Thumbnail Offset                : 2512
Thumbnail Length                : 5919
Profile CMM Type                : Apple Computer Inc.
Profile Version                 : 4.0.0
Profile Class                   : Display Device Profile
Color Space Data                : RGB
Profile Connection Space        : XYZ
Profile Date Time               : 2022:01:01 00:00:00
Profile File Signature          : acsp
Primary Platform                : Apple Computer Inc.
CMM Flags                       : Not Embedded, Independent
Device Manufacturer             : Apple Computer Inc.
Device Model                    :
Device Attributes               : Reflective, Glossy, Positive, Color
Rendering Intent                : Perceptual
Connection Space Illuminant     : 0.9642 1 0.82491
Profile Creator                 : Apple Computer Inc.
Profile ID                      : ecfda38e388547c36db4bd4f7ada182f
Profile Description             : Display P3
Profile Copyright               : Copyright Apple Inc., 2022
Media White Point               : 0.96419 1 0.82489
Red Matrix Column               : 0.51512 0.2412 -0.00105
```



```
Green Matrix Column             : 0.29198 0.69225 0.04189
Blue Matrix Column              : 0.1571 0.06657 0.78407
Red Tone Reproduction Curve     : (Binary data 32 bytes, use -b option to extract)
Chromatic Adaptation            : 1.04788 0.02292 -0.0502 0.02959 0.99048 -0.01706 -0.00923 0.01508 0
Blue Tone Reproduction Curve    : (Binary data 32 bytes, use -b option to extract)
Green Tone Reproduction Curve   : (Binary data 32 bytes, use -b option to extract)
Image Width                     : 3024
Image Height                    : 4032
Encoding Process                : Baseline DCT, Huffman coding
Bits Per Sample                 : 8
Color Components                : 3
Y Cb Cr Sub Sampling            : YCbCr4:2:0 (2 2)
Run Time Since Power Up         : 2 days 15:26:17
Aperture                        : 2.0
Image Size                      : 3024x4032
Megapixels                      : 12.2
Scale Factor To 35 mm Equivalent: 8.7
Shutter Speed                   : 1/2179
Create Date                     : 2022:12:23 09:43:20.839+05:30
Date/Time Original              : 2022:12:23 09:43:20.839+05:30
Modify Date                     : 2022:12:23 09:43:20.839+05:30
Thumbnail Image                 : (Binary data 5919 bytes, use -b option to extract)
GPS Latitude                    : 6 deg 55' 38.74" N
GPS Longitude                   : 79 deg 50' 41.68" E
Circle Of Confusion             : 0.003 mm
Field Of View                   : 38.2 deg
Focal Length                    : 6.0 mm (35 mm equivalent: 52.0 mm)
GPS Position                    : 6 deg 55' 38.74" N, 79 deg 50' 41.68" E
Hyperfocal Distance             : 5.19 m
Light Value                     : 15.4
Lens ID                         : iPhone 11 Pro back triple camera 6mm f/2

D:\forensics\exif>
```

5. Examine the meta data of the particular file.
6. There are lots of data. So, let’s start with longitude and latitude.
7. Open the web browser and go the URL as https://www.gps-coordinates.net/ and you’ll see a screen as shown below.

   This is the current location of me because now I’m in Colombo area



Address: Water Garden, D. R. Wijewardene Mawatha, Fc

DD (decimal degrees)*

Latitude: 6.9317

Longitude: 79.8482

Lat,Long: 6.9317,79.8482

DMS (degrees, minutes, seconds)*

Latitude: ● N ○ S 6 ° 55 ' 54.12 "

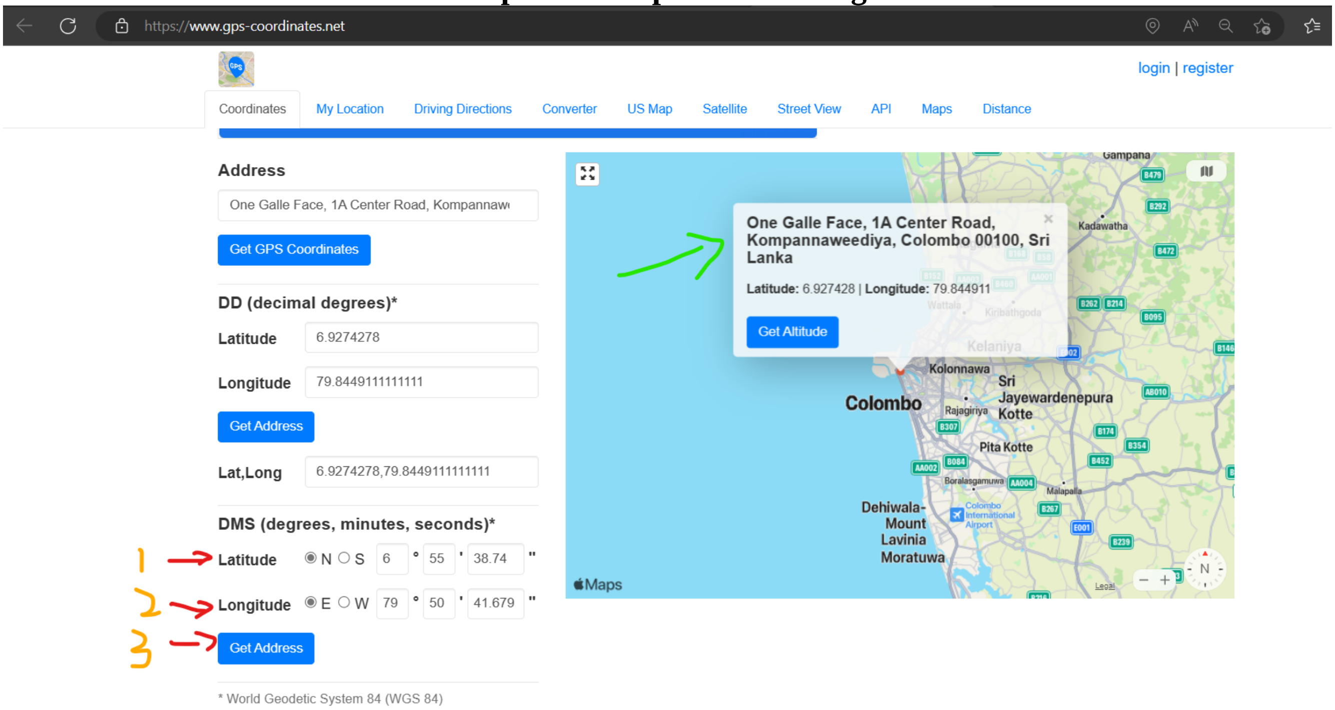
Longitude: ● E ○ W 79 ° 50 ' 53.52 "

Water Garden, D. R. Wijewardene Mawatha, Fort, Colombo 10110, Sri Lanka

Latitude: 6.9317 | **Longitude:** 79.8482

8. Enter the coordinates in the web page as shown below.

   This is the location I have captured the particular image



Address: One Galle Face, 1A Center Road, Kompannaw

DD (decimal degrees)*

Latitude: 6.9274278

Longitude: 79.8449111111111

Lat,Long: 6.9274278,79.8449111111111

DMS (degrees, minutes, seconds)*

Latitude: ● N ○ S 6 ° 55 ' 38.74 "

Longitude: ● E ○ W 79 ° 50 ' 41.679 "

* World Geodetic System 84 (WGS 84)

One Galle Face, 1A Center Road, Kompannaweediya, Colombo 00100, Sri Lanka

Latitude: 6.927428 | **Longitude:** 79.844911

9. As a result, the image location is captured.

Question

Turn on the location in your phone, and answer the question below.

- File Modification Date/Time : 2023:01:04 15:38:52+05:30
- File Access Date/Time : 2023:01:08 14:04:57+05:30
- File Creation Date/Time : 2023:01:04 15:38:50+05:30
- MIME Type : image/jpeg
- Host Computer : iPhone 11 Pro
- Brightness Value : 10.66631884
- Flash : Off, Did not fire
- Focal Length : 6.0 mm
- GPS Latitude Ref : North
- Profile File Signature : acsp
- GPS Position : 6 deg 55' 38.74" N, 79 deg 50' 41.68" E
- Copyright : Copyright Apple Inc., 2022
- Personal Information of the User
- Lens ID : iPhone 11 Pro back triple camera 6mm f/2
- Blue Matrix Column : 0.1571 0.06657 0.78407

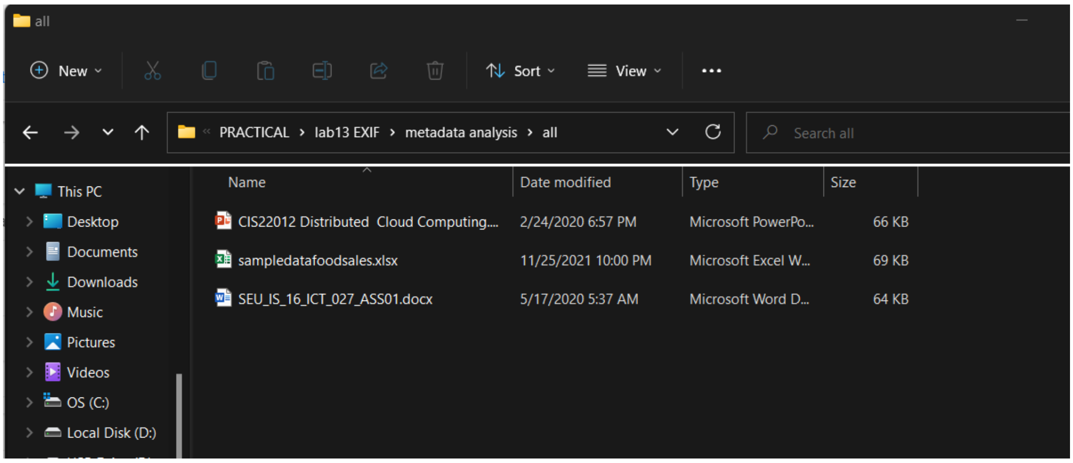
II. Metadata Analysis of the Office Files

Shows the office files which have been retrieved for forensic analysis. In a hypothetical scenario is that, when we have given a few files that our department is wanting more information about these files. These office files happen to be volatile, which means if we try to access them using the associated application, we could append new user information to the metadata of the forensic evidence. So, have chosen these office files without altering any information.

But some applications have created defense against this. Example: Microsoft Office has a viewing only mode. So that no meta data is appended to the file attributes, unless you click on the related document. Whereas, other document haven’t. So, we have to take precautions and perform this type of file analysis, irrespective of the file being associated with MS Office or not due to this reason.

.docx file represent the Word file, .pptx is the PowerPoint presentation file and .xlsx is the Excel Spread sheet file. These are actually containers of XML based file formats developed by Microsoft for representing spread sheet, charts, presentations and word processing documents.

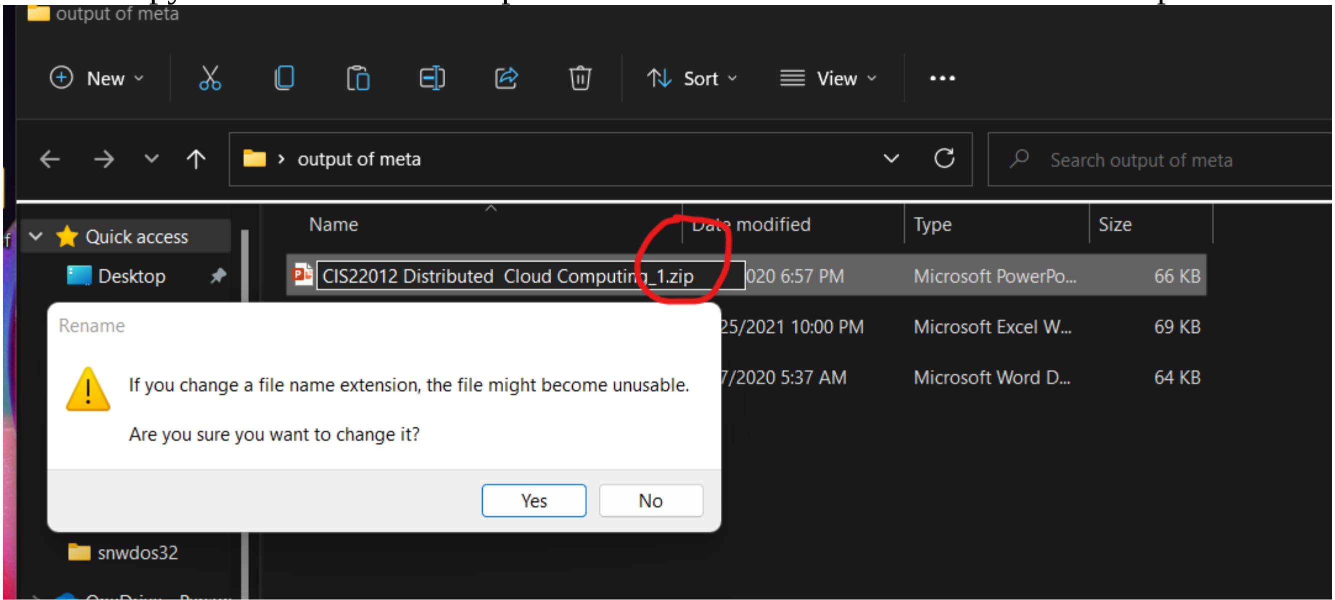
1. Copy the original files and paste them by not altering the originals as shown below.



Name	Date modified	Type	Size
CIS22012 Distributed Cloud Computing...	2/24/2020 6:57 PM	Microsoft PowerPo...	66 KB
sampledatafoodsales.xlsx	11/25/2021 10:00 PM	Microsoft Excel W...	69 KB
SEU_IS_16_ICT_027_ASS01.docx	5/17/2020 5:37 AM	Microsoft Word D...	64 KB

2. Rename all the files with ".zip" extension as shown below.

for this copy the above 3 files and paste it into a another folder and make it as zip

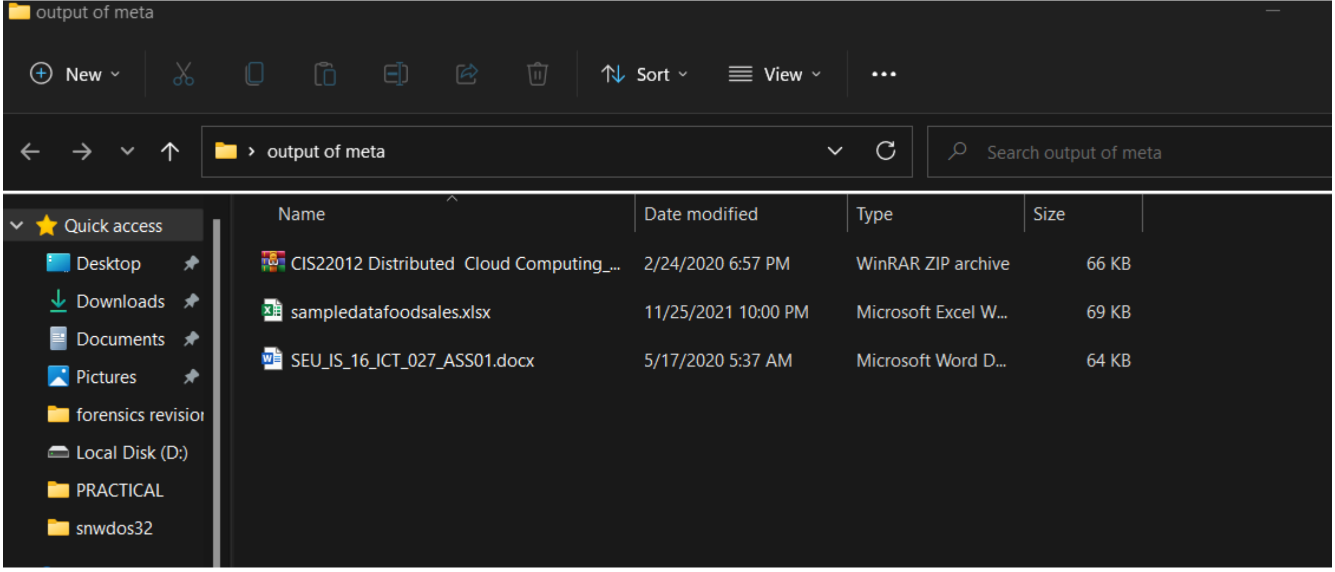


Name	Date modified	Type	Size
CIS22012 Distributed Cloud Computing_1.zip	020 6:57 PM	Microsoft PowerPo...	66 KB
	25/2021 10:00 PM	Microsoft Excel W...	69 KB
	7/2020 5:37 AM	Microsoft Word D...	64 KB

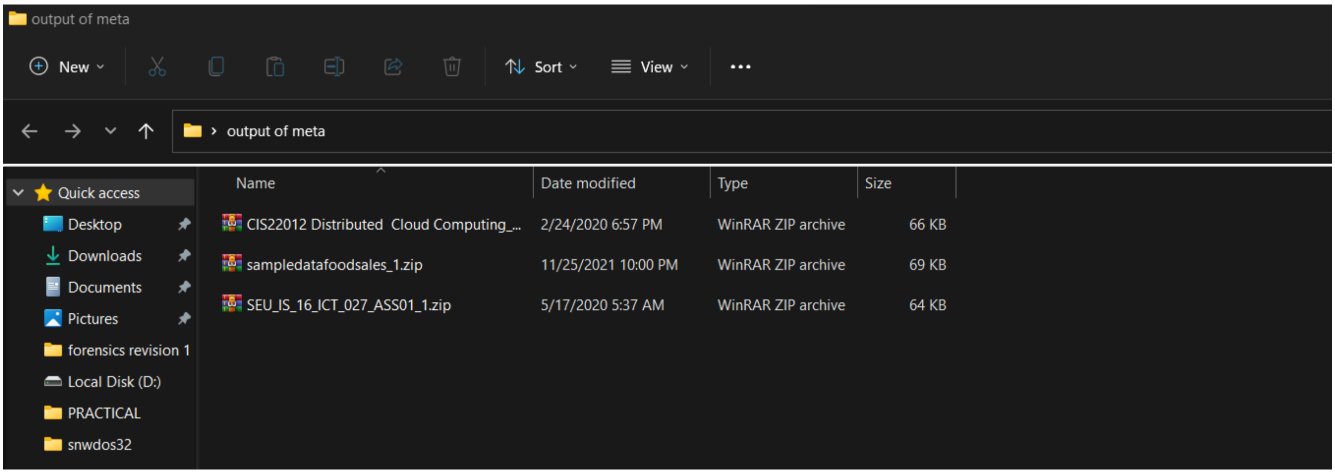
Rename

If you change a file name extension, the file might become unusable.

Are you sure you want to change it?

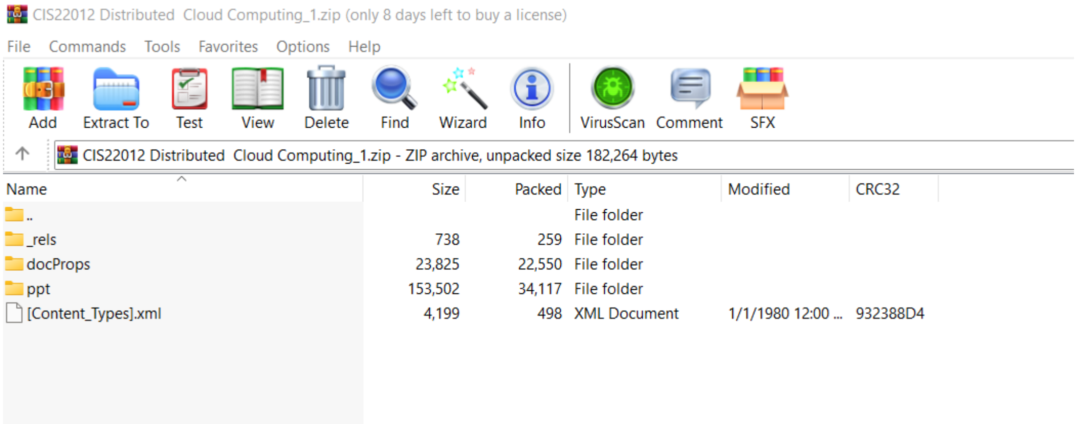


Name	Date modified	Type	Size
CIS22012 Distributed Cloud Computing_...	2/24/2020 6:57 PM	WinRAR ZIP archive	66 KB
sampledatafoodsales.xlsx	11/25/2021 10:00 PM	Microsoft Excel W...	69 KB
SEU_IS_16_ICT_027_ASS01.docx	5/17/2020 5:37 AM	Microsoft Word D...	64 KB



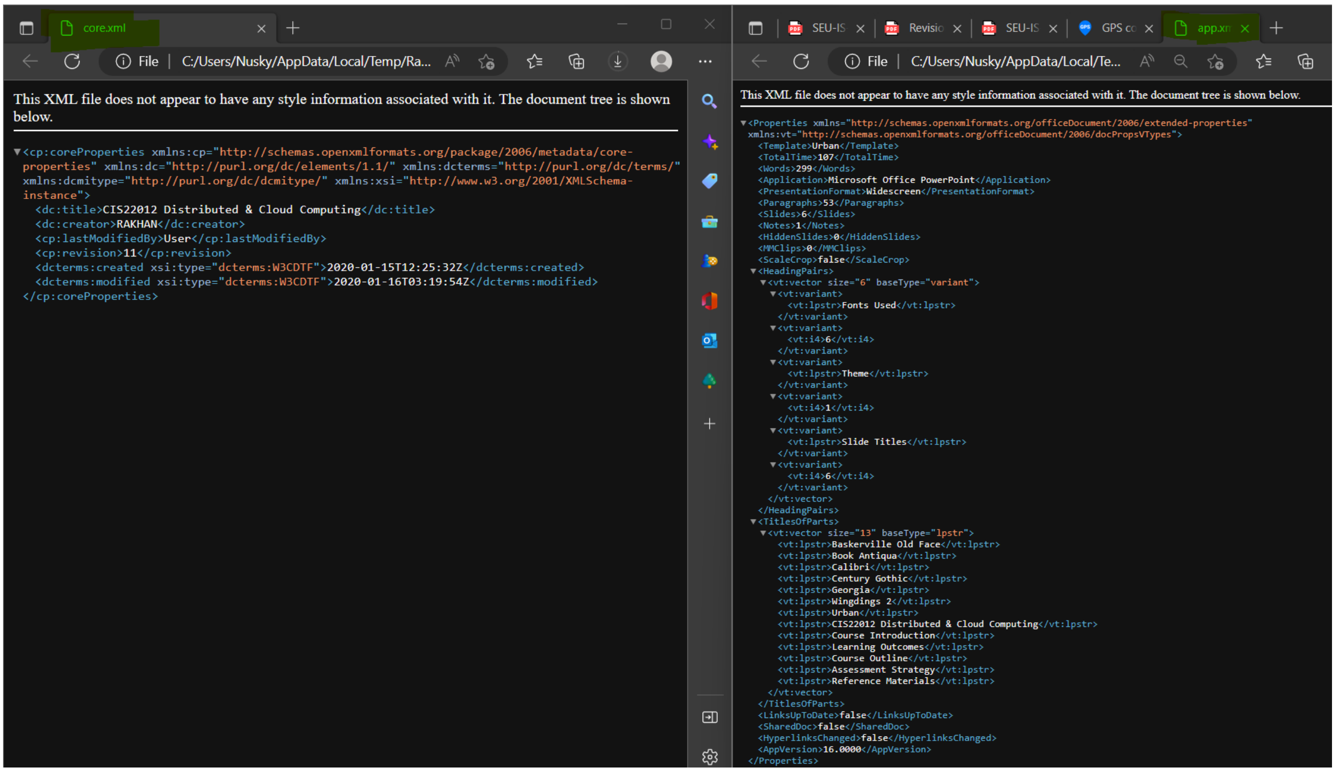
Name	Date modified	Type	Size
CIS22012 Distributed Cloud Computing_...	2/24/2020 6:57 PM	WinRAR ZIP archive	66 KB
sampledatafoodsales_1.zip	11/25/2021 10:00 PM	WinRAR ZIP archive	69 KB
SEU_IS_16_ICT_027_ASS01_1.zip	5/17/2020 5:37 AM	WinRAR ZIP archive	64 KB

3. Navigate to the “docProps” folder → app.xml → core.xml as shown below.



CIS22012 Distributed Cloud Computing_1.zip - ZIP archive, unpacked size 182,264 bytes

Name	Size	Packed	Type	Modified	CRC32
..			File folder		
_rels	738	259	File folder		
docProps	23,825	22,550	File folder		
ppt	153,502	34,117	File folder		
[Content_Types].xml	4,199	498	XML Document	1/1/1980 12:00 ...	932388D4


core.xml
File
C:/Users/Nusky/AppData/Local/Temp/Ra...
SEU-IS
Revisio
SEU-IS
GPS cc
app.xn
File
C:/Users/Nusky/AppData/Local/Te...

This XML file does not appear to have any style information associated with it. The document tree is shown below.

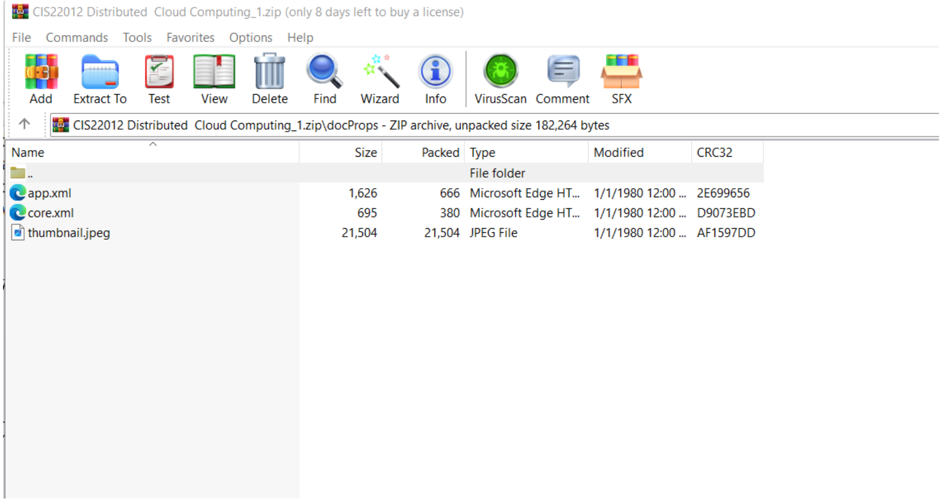
```
▼<cp:coreProperties xmlns:cp="http://schemas.openxmlformats.org/package/2006/metadata/core-
 properties" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:dcterms="http://purl.org/dc/terms/"
 xmlns:dcmitype="http://purl.org/dc/dcmitype/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
 instance">
   <dc:title>CIS22012 Distributed & Cloud Computing</dc:title>
   <dc:creator>RAKHAN</dc:creator>
   <cp:lastModifiedBy>User</cp:lastModifiedBy>
   <cp:revision>11</cp:revision>
   <dcterms:created xsi:type="dcterms:W3CDTF">2020-01-15T12:25:32Z</dcterms:created>
   <dcterms:modified xsi:type="dcterms:W3CDTF">2020-01-16T03:19:54Z</dcterms:modified>
 </cp:coreProperties>
```

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
▼<Properties xmlns="http://schemas.openxmlformats.org/officeDocument/2006/extended-properties"
 xmlns:vt="http://schemas.openxmlformats.org/officeDocument/2006/docPropsVTypes">
   <Template>Urban</Template>
   <TotalTime>107</TotalTime>
   <Words>299</Words>
   <Application>Microsoft Office PowerPoint</Application>
   <PresentationFormat>Widescreen</PresentationFormat>
   <Paragraphs>53</Paragraphs>
   <Slides>6</Slides>
   <Notes>1</Notes>
   <HiddenSlides>0</HiddenSlides>
   <MMClips>0</MMClips>
   <ScaleCrop>false</ScaleCrop>
  ▼<HeadingPairs>
    ▼<vt:vector size="6" baseType="variant">
      ▼<vt:variant>
         <vt:lpstr>Fonts Used</vt:lpstr>
       </vt:variant>
      ▼<vt:variant>
         <vt:i4>6</vt:i4>
       </vt:variant>
      ▼<vt:variant>
         <vt:lpstr>Theme</vt:lpstr>
       </vt:variant>
      ▼<vt:variant>
         <vt:i4>1</vt:i4>
       </vt:variant>
      ▼<vt:variant>
         <vt:lpstr>Slide Titles</vt:lpstr>
       </vt:variant>
      ▼<vt:variant>
         <vt:i4>6</vt:i4>
       </vt:variant>
     </vt:vector>
   </HeadingPairs>
  ▼<TitlesOfParts>
    ▼<vt:vector size="13" baseType="lpstr">
       <vt:lpstr>Baskerville Old Face</vt:lpstr>
       <vt:lpstr>Book Antiqua</vt:lpstr>
       <vt:lpstr>Calibri</vt:lpstr>
       <vt:lpstr>Century Gothic</vt:lpstr>
       <vt:lpstr>Georgia</vt:lpstr>
       <vt:lpstr>Wingdings 2</vt:lpstr>
       <vt:lpstr>Urban</vt:lpstr>
       <vt:lpstr>CIS22012 Distributed & Cloud Computing</vt:lpstr>
       <vt:lpstr>Course Introduction</vt:lpstr>
       <vt:lpstr>Learning Outcomes</vt:lpstr>
       <vt:lpstr>Course Outline</vt:lpstr>
       <vt:lpstr>Assessment Strategy</vt:lpstr>
       <vt:lpstr>Reference Materials</vt:lpstr>
     </vt:vector>
   </TitlesOfParts>
   <LinksUpToDate>false</LinksUpToDate>
   <SharedDoc>false</SharedDoc>
   <HyperlinksChanged>false</HyperlinksChanged>
   <AppVersion>16.0000</AppVersion>
 </Properties>
```

4. Finally, the metadata of the files are shown.

5. By viewing the thumbnail image, can get the preview.



CIS22012 Distributed Cloud Computing_1.zip (only 8 days left to buy a license)
File Commands Tools Favorites Options Help
Add
Extract To
Test
View
Delete
Find
Wizard
Info
VirusScan
Comment
SFX

CIS22012 Distributed Cloud Computing_1.zip\docProps - ZIP archive, unpacked size 182,264 bytes

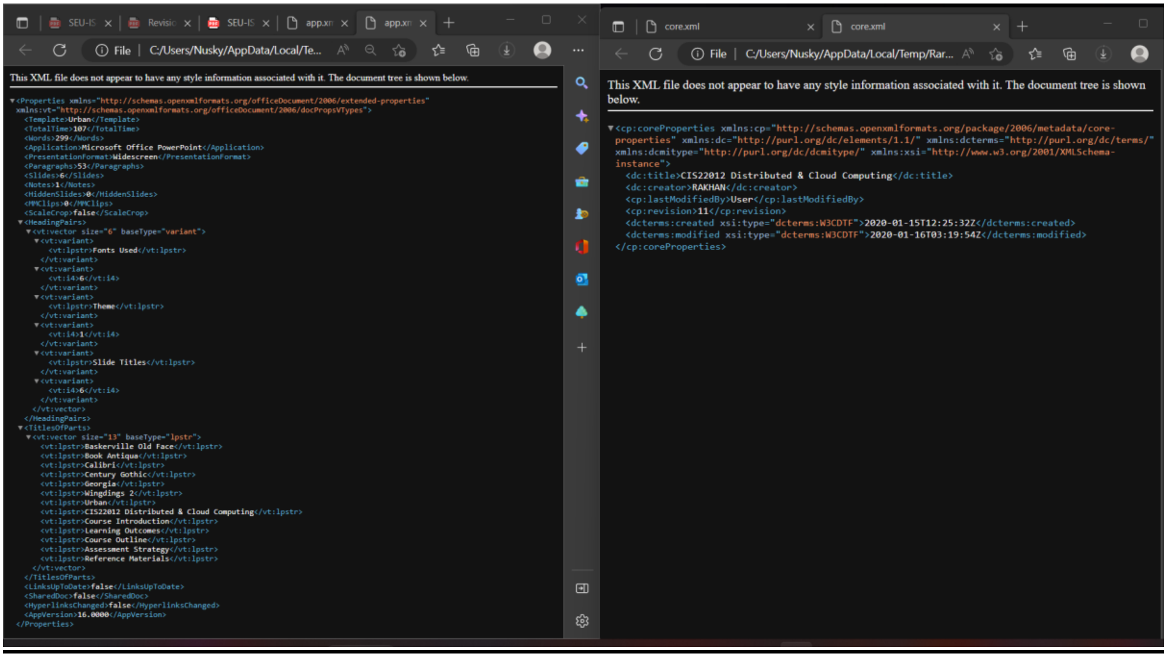
Name	Size	Packed	Type	Modified	CRC32
..			File folder		
app.xml	1,626	666	Microsoft Edge HT...	1/1/1980 12:00 ...	2E699656
core.xml	695	380	Microsoft Edge HT...	1/1/1980 12:00 ...	D9073EBD
thumbnail.jpeg	21,504	21,504	JPEG File	1/1/1980 12:00 ...	AF1597DD

Question

Get a .docx, .xlsx and .pptx file of your own analyze the metadata of it and answer the questions given below.

6. From the above **.ppt**, **.docx** and **.xlsx** file got the following information of meta data.

For powerpoint presentation



SEU-IS
Revisio
SEU-IS
app.xm
app.xm
File
C:/Users/Nusky/AppData/Local/Te...
core.xml
core.xml
File
C:/Users/Nusky/AppData/Local/Temp/Rar...

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
▼<Properties xmlns="http://schemas.openxmlformats.org/officeDocument/2006/extended-properties"
 xmlns:vt="http://schemas.openxmlformats.org/officeDocument/2006/docPropsVTypes">
   <Template>Urban</Template>
   <TotalTime>107</TotalTime>
   <Words>299</Words>
   <Application>Microsoft Office PowerPoint</Application>
   <PresentationFormat>Widescreen</PresentationFormat>
   <Paragraphs>53</Paragraphs>
   <Slides>6</Slides>
   <Notes>1</Notes>
   <HiddenSlides>0</HiddenSlides>
   <MMClips>0</MMClips>
   <ScaleCrop>false</ScaleCrop>
 ▼<HeadingPairs>
  ▼<vt:vector size="6" baseType="variant">
   ▼<vt:variant>
      <vt:lpstr>Fonts Used</vt:lpstr>
    </vt:variant>
   ▼<vt:variant>
      <vt:i4>6</vt:i4>
    </vt:variant>
   ▼<vt:variant>
      <vt:lpstr>Theme</vt:lpstr>
    </vt:variant>
   ▼<vt:variant>
      <vt:i4>1</vt:i4>
    </vt:variant>
   ▼<vt:variant>
      <vt:lpstr>Slide Titles</vt:lpstr>
    </vt:variant>
   ▼<vt:variant>
      <vt:i4>6</vt:i4>
    </vt:variant>
   </vt:vector>
  </HeadingPairs>
 ▼<TitlesOfParts>
  ▼<vt:vector size="13" baseType="lpstr">
     <vt:lpstr>Baskerville Old Face</vt:lpstr>
     <vt:lpstr>Book Antiqua</vt:lpstr>
     <vt:lpstr>Calibri</vt:lpstr>
     <vt:lpstr>Century Gothic</vt:lpstr>
     <vt:lpstr>Georgia</vt:lpstr>
     <vt:lpstr>Wingdings 2</vt:lpstr>
     <vt:lpstr>Urban</vt:lpstr>
     <vt:lpstr>CIS22012 Distributed & Cloud Computing</vt:lpstr>
     <vt:lpstr>Course Introduction</vt:lpstr>
     <vt:lpstr>Learning Outcomes</vt:lpstr>
     <vt:lpstr>Course Outline</vt:lpstr>
     <vt:lpstr>Assessment Strategy</vt:lpstr>
     <vt:lpstr>Reference Materials</vt:lpstr>
   </vt:vector>
  </TitlesOfParts>
  <LinksUpToDate>false</LinksUpToDate>
  <SharedDoc>false</SharedDoc>
  <HyperlinksChanged>false</HyperlinksChanged>
  <AppVersion>16.0000</AppVersion>
</Properties>
```

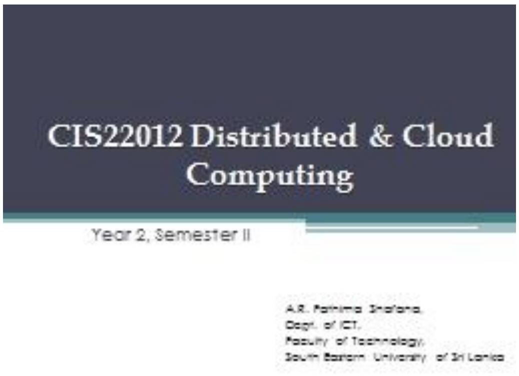
This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
▼<cp:coreProperties xmlns:cp="http://schemas.openxmlformats.org/package/2006/metadata/core-
 properties" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:dcterms="http://purl.org/dc/terms/"
 xmlns:dcmitype="http://purl.org/dc/dcmitype/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
 instance">
   <dc:title>CIS22012 Distributed & Cloud Computing</dc:title>
   <dc:creator>RAKHAN</dc:creator>
   <cp:lastModifiedBy>User</cp:lastModifiedBy>
   <cp:revision>11</cp:revision>
   <dcterms:created xsi:type="dcterms:W3CDTF">2020-01-15T12:25:32Z</dcterms:created>
   <dcterms:modified xsi:type="dcterms:W3CDTF">2020-01-16T03:19:54Z</dcterms:modified>
 </cp:coreProperties>
```

core.xml   app.xml

• Application	- Microsoft Office PowerPoint
• Type	- Presentation slide
• Contents	- 53 Paragraphs
• Slides	- 6
• Title	- CIS22012 Distributed & Cloud Computing

- Author - RAKHAN
- Last modified - User
- Revision number - 11
- Created date and time - 2020-01-15T12:25:32Z
- Modified date and time - 2020-01-16T03:19:54Z
- Preview -

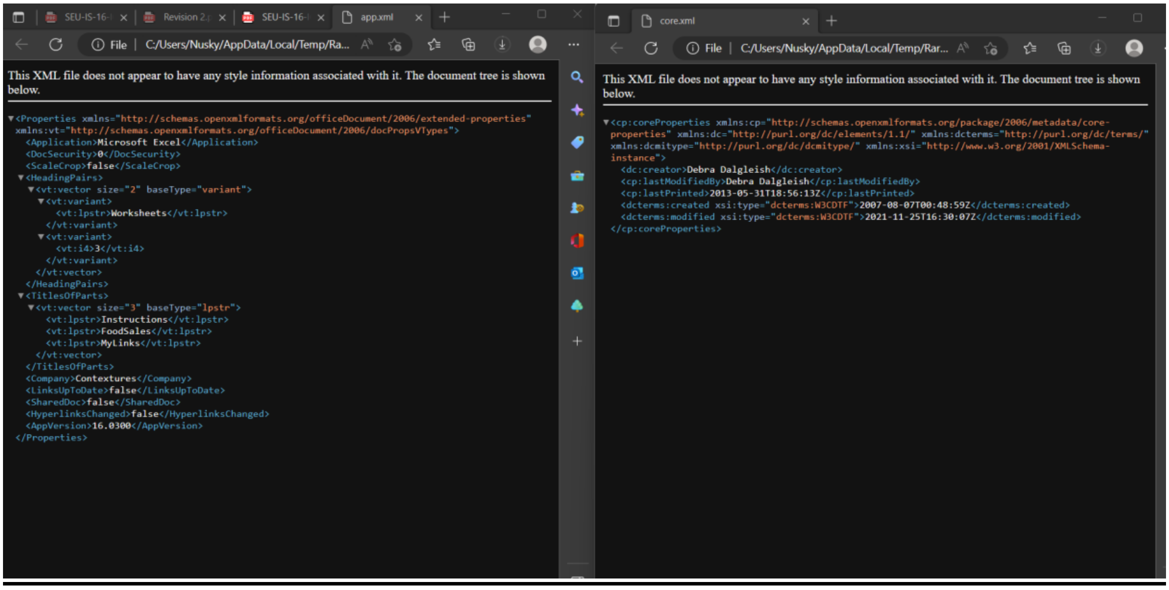


CIS22012 Distributed & Cloud Computing

Year 2, Semester II

A.R. Fathima Shafana,
Dept. of ICT,
Faculty of Technology,
South Eastern University of Sri Lanka

For excel sheet



SEU-IS-16-
Revision 2.p
SEU-IS-16-
app.xml
File
C:/Users/Nusky/AppData/Local/Temp/Ra...
core.xml
C:/Users/Nusky/AppData/Local/Temp/Rar...

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
▼<Properties xmlns="http://schemas.openxmlformats.org/officeDocument/2006/extended-properties"
 xmlns:vt="http://schemas.openxmlformats.org/officeDocument/2006/docPropsVTypes">
   <Application>Microsoft Excel</Application>
   <DocSecurity>0</DocSecurity>
   <ScaleCrop>false</ScaleCrop>
  ▼<HeadingPairs>
    ▼<vt:vector size="2" baseType="variant">
      ▼<vt:variant>
         <vt:lpstr>Worksheets</vt:lpstr>
       </vt:variant>
      ▼<vt:variant>
         <vt:i4>3</vt:i4>
       </vt:variant>
     </vt:vector>
   </HeadingPairs>
  ▼<TitlesOfParts>
    ▼<vt:vector size="3" baseType="lpstr">
       <vt:lpstr>Instructions</vt:lpstr>
       <vt:lpstr>FoodSales</vt:lpstr>
       <vt:lpstr>MyLinks</vt:lpstr>
     </vt:vector>
   </TitlesOfParts>
   <Company>Contextures</Company>
   <LinksUpToDate>false</LinksUpToDate>
   <SharedDoc>false</SharedDoc>
   <HyperlinksChanged>false</HyperlinksChanged>
   <AppVersion>16.0300</AppVersion>
 </Properties>
```

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
▼<cp:coreProperties xmlns:cp="http://schemas.openxmlformats.org/package/2006/metadata/core-
 properties" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:dcterms="http://purl.org/dc/terms/"
 xmlns:dcmitype="http://purl.org/dc/dcmitype/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
 instance">
   <dc:creator>Debra Dalgleish</dc:creator>
   <cp:lastModifiedBy>Debra Dalgleish</cp:lastModifiedBy>
   <cp:lastPrinted>2013-05-31T18:56:13Z</cp:lastPrinted>
   <dcterms:created xsi:type="dcterms:W3CDTF">2007-08-07T00:48:59Z</dcterms:created>
   <dcterms:modified xsi:type="dcterms:W3CDTF">2021-11-25T16:30:07Z</dcterms:modified>
 </cp:coreProperties>
```

core.xml app.xml

- Application - Microsoft Excel
- Type - Worksheets
- Contents - no Contents for this
- sheets - no sheets for this
- Title - no Title for this
- Author - Debra Dalgleish
- Last modified - Debra Dalgleish
- lastPrinted date and time - 2013-05-31T18:56:13Z
- Created date and time - 2007-08-07T00:48:59Z
- Modified date and time - 2021-11-25T16:30:07Z
- Preview - no preview for this

For word document

app.xml core.xml

Application	- Microsoft Office Word
Type	- Doc
Contents	- 1page
Words	- 160
Title	- no Title for this
Paragraphs	- 2
Author	- NUSKY
Last modified	- NUSKY
Revision number	- 1
Created date and time	- 2020-05-16T23:49:00Z
Modified date and time	- 2020-05-17T00:07:00Z
Preview	- no preview for this