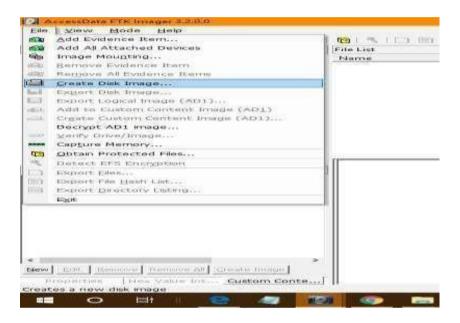
Practical No – 7

Aim: Recovering and Inspecting deleted files

- -Check for Deleted Files
- -Recover the Deleted Files
 - -Analyzing and Inspecting the recovered files

Steps:

1. Open AccessData FTK Imager. Click on File > Create Disk Image.



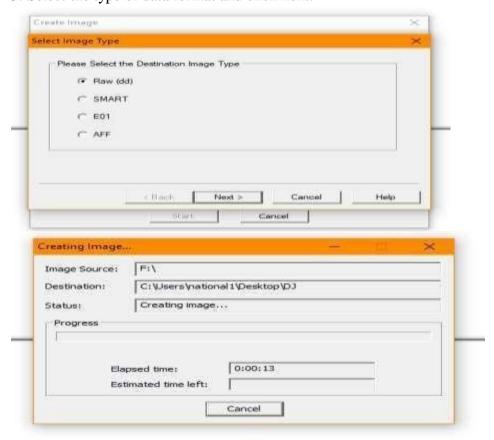
- 2. Type the destination path.
- 3. Click on Logical drive.



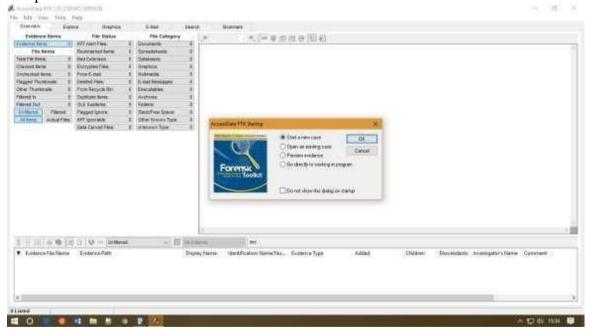
4. Click on Add > Browse.



5. Select the type of data format and click next.



7. Open the Forensic toolkit and click on file > new case.



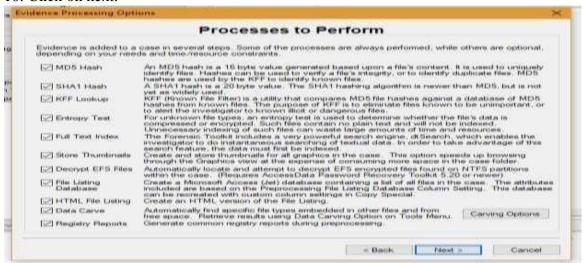
8. Enter the details and click on next.



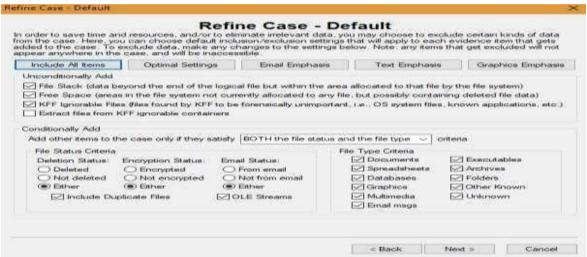
9. Click on next.

	Case Log Options
	he case folder. It gets created automatically by FTK and contains a record of ase. You can choose which type of events you would like to be logged.
You can also add your own comments to the menu item, and you can view the log file by a	log file at any time by selecting "Add Case Log Entry" under the "Tools" electing "View Case Log" under the "Tools" menu item.
Events to go in the Case Log	
☑ Case and evidence events	Events related to the addition and processing of file items when svidence is added or when using Analysis Tools later in the case.
Error messages	Events related to any error conditions encountered during the case.
☑ Bookmarking events	Events related to the addition and modification of bookmarks.
Searching events	Events related to searching. All search queries and resulting hit counts will be recorded.
☑ Data carving / Internet searches	Events related to special data carving or internet keyword searches that are performed during the case.
Other events	Other events not related to the above, such as copying, viewing, and ignoring files.
Other svents	

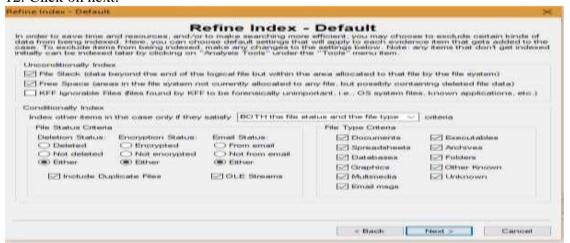
10. Click on next.



11. Click on next.



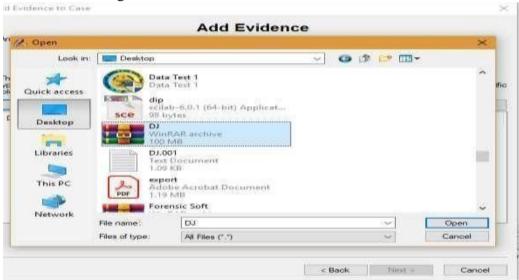
12. Click on next.



13. Click on Add Evidence > Acquired Image of Drive > Continue.

dd Evidence to Case		>
Acquired image of di Local drive: Folder: Individual File: The default refinement option types of refinements can also	Add Evidence so can be added to the case. There are several types of evid several formats supported; can be an image of a logical Can be a logical or physical drive. Adds all files in the specified folder, including contents of Adds as single file. NOTE: Disk image files should be act set previously, can be overridden include the exclusion of dis- refresered. These refrirements can include the exclusion of dis- refresered.	of or physical drive of subfolders Ided as acquired images evidence item, and additional ate/size ranges, as well as specific
Add Evidence	Add Evidence to Case X	afine Evidence - Advanced
Display Name	Type of Evidence to Add to Case Acquired Image of Drive Local Drive Contents of a Folder Individual File Continue Cancel	Time Zorie Comment
	« Bach	fluid > Cancel

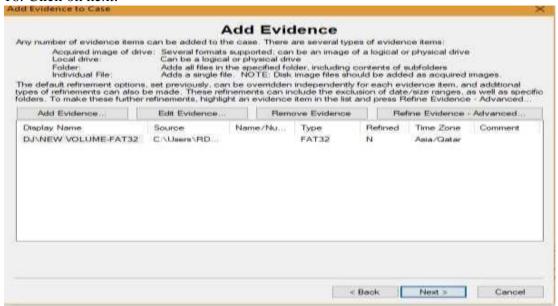
14. Select the image file.



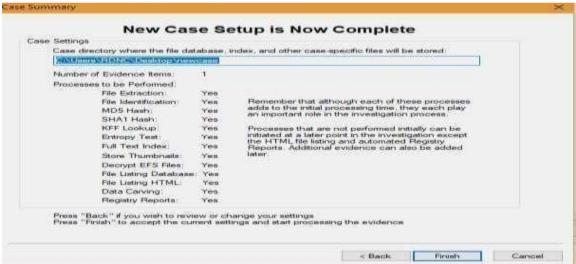
15. Click on OK.

Acquired Image of	ms can be added to the case. There are several types of evidence Evidence Information	teme:	-
Local drive: Folder: Individual File: Individual File: The default refinement op- yoss of refinements can a olders. To make these fur Add Evidence.	Evidence Location: [C:\Users\RDNC\Desktop\DJ.001 Evidence Display Name:	ranges. Evidenc	I images and additional as well as speci e - Advanced
Display Name	E vidence Identification Name/Number:	a Zone	Comment
n	Local Evidence Time Zone: Choose time zone for evidence OR Cenesi		

16. Click on next.

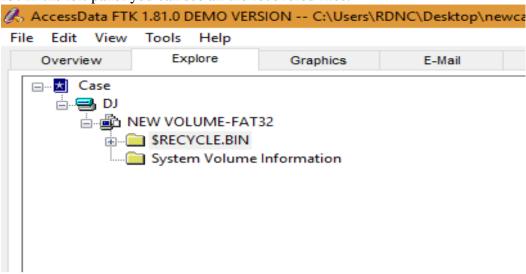


17. Click on Finish.

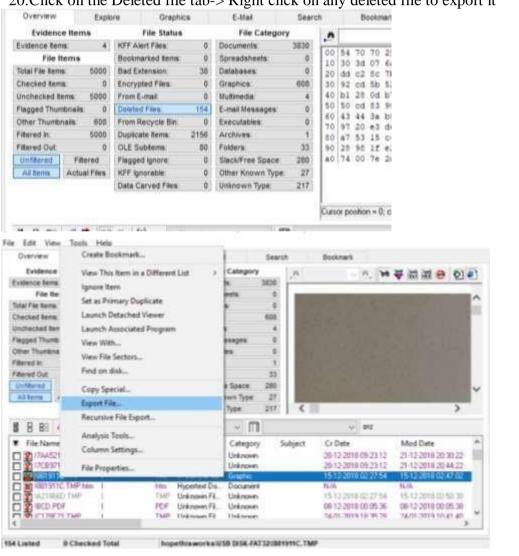


18. Files are being carving.

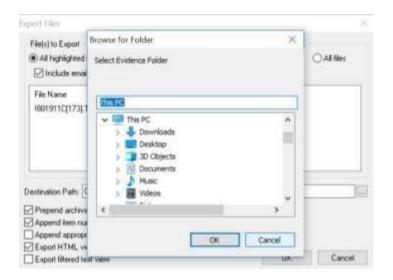
19. In the left panel you can see all the recovered files.

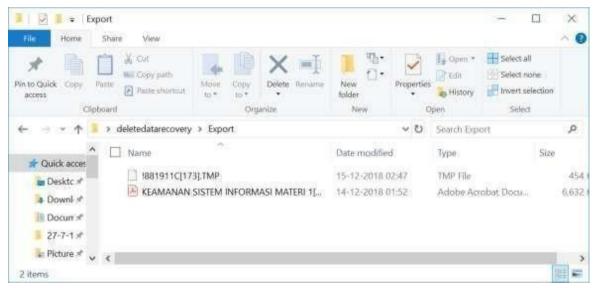


20. Click on the Deleted file tab-> Right click on any deleted file to export it



21. Browse and choose the destination folder to export the deleted file





Class:- TYCS

Practical No - 8

Aim: Acquisition of Cell phones and Mobile devices

Steps:

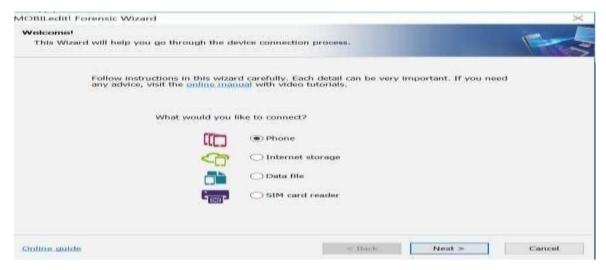
- 1. Download mobiledit forensic tool in mobile.
- 2. Open Mobiledit tool in PC.



3. Click on connect.



4. Connect your mobile device to the system. Click on phone > next.



5. Click the connection



6. Open the mobiledit tool in phone and click on the type of connection (i.e Wifi) > Copy the IP address and enter it in the PC and click next.

		5202
MOBILedit! Forensic Wizard		×
Wi-Fi detection		
Enter phone's IP address as displayed by the C	onnector application.	
Before continuing please follow the	se Instructions:	
1. Connect phone to the same V	VI-FI network as your PC	
2. Upload the MEFConnector.apl	k file from MOBILedit Application Folder to the pl	hone
3. Install and run MOBILedit For	A THE RESERVE AND A SECURITION OF THE RESERVE AND A SECURITION	
4. Enter the IP address as displa	yed on your phone: 192 , 168 , 9 , 1	1वन
Online guide	≈ Back Next >	Cancel

7. It shows the phone which is connected. Click on next.

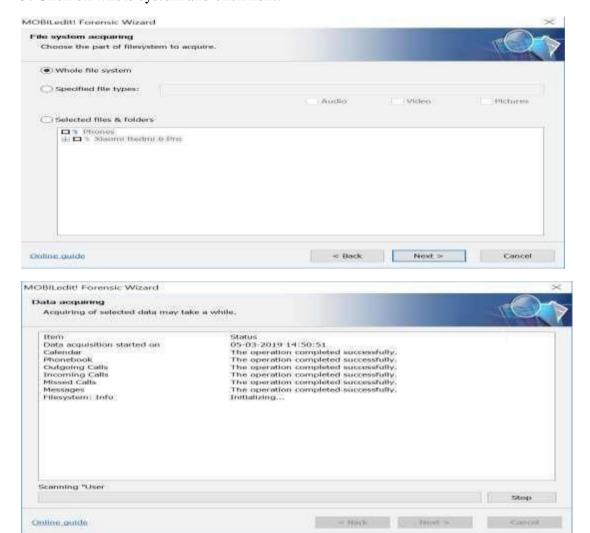
DBILedit! Forensic Wiza					
'i-Fi connected phone Available WI-Fi connecte			calact abanates		
Available Wi-Fi Connecte	ed phones a	ire listed below. Please	select phone(s).		/10/18
Model Ma		Port IP:192.168.9.144			
Refresh			Why is my ph	one not listed?	

8. Click on next.

Data acquire se	ttings		
Please set the f Data will be sto	ollowing options for data acqu red in the "Cases" folder.	iring.	
Device Label:	XIaomi Redmi 6 Pro		
Device Name:	Xiaomi Redmi 6 Pro	Device Evidence Number:	
Owner Name:		Owner Phone Number:	
Phone Notes:		W SERMON AMERICAN MEDICAL MEDI	
Device Capabili	EVOID .		
Phonebook Organizer Messages Files	ties		^
Phonebook Organizer Messages	ties		~
✓ Phonebook ✓ Organizer ✓ Messages ✓ Files ✓ User Files ✓ Media			
		Communication L	
✓ Phonebook ✓ Organizer ✓ Messages ✓ Files ✓ User Files ✓ Media		Communication L	J

Semester - VI

9. Click on whole system and click next.



10. Click on case and click next.

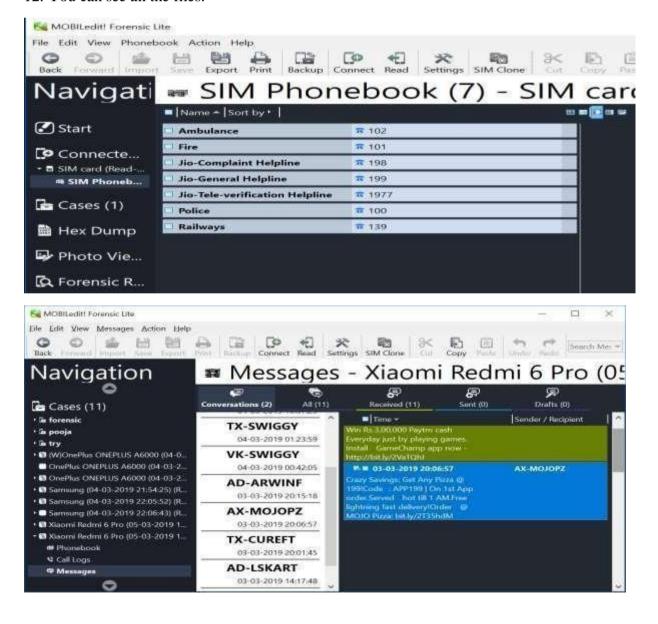
AOBILedit! Forensic Wizard	>
Casses Organize obtained device data.	
Select the group you wish to store backup in:	
Cases Cases < New Case >	

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11. Click on your device in the left panel.



12. You can see all the files.



Class:- TYCS

Practical No - 9

Aim: Email Forensics

- Mail Service Providers
- Email protocols
- Recovering emails
- Analyzing email header

Mail Service Providers

An email service provider (ESP) is a company that offers email marketing or bulk email services. An ESP may provide tracking information showing the status of email sent to each member of an address list. ESPs also often provide the ability to segment an address list into interest groups or categories, allowing the user to send targeted information to people who they believe will value the correspondence.

Here are nine features to look for when you select your business email service:

Spam Filter - Spam messages are a huge time waster. You don't want to spend your valuable time reading them. That's why you want an email service that has a system in place to detect and filter out inbox spam.

Reliability - Your business email provider needs to be up and running when you need it. Your email should always be available. Email downtime could result in lost or unhappy customers.

Integration - Some email services work well with other business tools such as calendars, and productivity suites. If your business relies heavily on such tools, consider an email package that integrates with the other tools you already use.

Security - With email hacks being a regular news item, you want your business email provider to offer strong measures to keep your accounts secure. You need to keep your messages safe and don't want any unauthorized use of your email account.

Ease of Use - As your business grows, more of your staff members need to create and use email accounts. Reduce staff training time by selecting an email service provider that's easy to use.

Archive Capabilities - The best business email providers provide a way for you to save, store, and organize your email messages and drafts. For many businesses, keeping an accurate and well-organized record of business communication is vital.

Advanced Features - When running a small business, advanced email features such as the ability to recall sent messages or schedule tasks within email can be important. Which advanced features are most important depends on your unique business needs.

Reputation - Your business email service provider needs to have a good reputation. Remember, your email address is one of the first pieces of information prospective clients see.

Storage - When selecting an email service provider, keep in mind the amount of storage space included with your account. You don't want to run out of space.

Types of Popular Email Service Providers are as follows:

1. Gmail:

One of the most popular and best email service providers, Gmail is used for personal and business communications alike. According to statistics reported by TechCrunch in 2016, over a billion people use Gmail.

Gmail has a good reputation and includes many advanced features such as the Undo Send feature and Email Forwarding. Since this service is owned by search engine giant, Google, naturally it includes a powerful search utility and filter system.

Google has also added strengthened security measures such as two-step verification and powerful spam filters to make it less likely that your account is hacked or that you receive junk messages. Finally, it integrates cleanly with popular productivity tools including Google Calendar and Google Docs.

2. Outlook

Microsoft's Outlook.com email provider is a strong option if you're looking for the best email provider. Statistics from Microsoft show that Outlook had over 400 million users in 2016.

This popular email package has the support and resources of tech giant Microsoft behind it. Outlook.com offers advanced features such as Clutter, which finds emails that are likely of low priority and separates them from your inbox. Another advanced Outlook.com feature is the ability to Undelete, or recover an email after you've accidentally discarded a message. Outlook integrates well with popular software including other Microsoft products.

3. iCloud Mail

iCloud email is a possible email choice if you frequently access your email package from your Apple mobile device. Apple employs several security features to make sure that your iCloud account is not compromised including two-step verification or two-factor authentication. There's also a spam filter.

4. Yahoo Mail

Yahoo! was one of the early Internet companies, dating back to 1994. Yahoo! Mail is popular with many users. In 2016, it was announced that the company was acquired by Verizon.

Despite the recent changes to Yahoo! ownership, you can still sign up for a Yahoo! Mail account. Some Yahoo! Mail features you can benefit from if you choose it as your email provider include:

Auto deletion of Trash messages after 90 days

Huge storage capacity (1 TB)

Built-in web search tool, calendar, and notepad

Spam filters and SSL encryption

5. AOL Mail

AOL is another early Internet company. In the 1980s the company was known as America Online. It was purchased by Verizon in 2015. The email component of the organization remains a popular and strong service that has earned its place on this list of the best email services.

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Key AOL Mail features include advanced spam filters and virus protection. It's also known for the ability to personalize your email address with the MyAddress feature that lets you select your own email domain name.

6. Zoho Mail

Although Zoho Mail has several premium levels available, there is also a free level available that allows you to have up to 25 users. For many small businesses, this will be enough—so we have included the email service on our list of the best free email providers.

With the free level of Zoho Mail, you are limited to 5 GB of storage per user. It does include antivirus protection and spam filtering. This email service integrates with other Zoho productivity tools such as calendar, tasks, and notes.

Email Protocols

E-mail Protocols are set of rules that help the client to properly transmit the information to or from the mail server

The most commonly used Email protocols on the internet - POP3, IMAP and SMTP. Each one of them has specific function and way of work.

POP3

Post Office Protocol version 3 (POP3) is a standard mail protocol used to receive emails from a remote server to a local email client. POP3 allows you to download email messages on your local computer and read them even when you are offline. Note, that when you use POP3 to connect to your email account, messages are downloaded locally and removed from the email server. This means that if you access your account from multiple locations, that may not be the best option for you. On the other hand, if you use POP3, your messages are stored on your local computer, which reduces the space your email account uses on your web server.

By default, the POP3 protocol works on two ports:

Port 110 - this is the default POP3 non-encrypted port

Port 995 - this is the port you need to use if you want to connect using POP3 securely

IMAP

The Internet Message Access Protocol (IMAP) is a mail protocol used for accessing email on a remote web server from a local client. IMAP and POP3 are the two most commonly used Internet mail protocols for retrieving emails. Both protocols are supported by all modern email clients and web servers.

While the POP3 protocol assumes that your email is being accessed only from one application, IMAP allows simultaneous access by multiple clients. This is why IMAP is more suitable for you if you're going to access your email from different locations or if your messages are managed by multiple users.

By default, the IMAP protocol works on two ports:

Port 143 - this is the default IMAP non-encrypted port

Port 993 - this is the port you need to use if you want to connect using IMAP securely

SMTP

SMTP stands for Simple Mail Transfer Protocol. It was first proposed in 1982. It is a standard protocol used for sending e-mail efficiently and reliably over the internet. Simple Mail Transfer Protocol (SMTP) is the standard protocol for sending emails across the Internet.

By default, the SMTP protocol works on three ports:

Port 25 - this is the default SMTP non-encrypted port

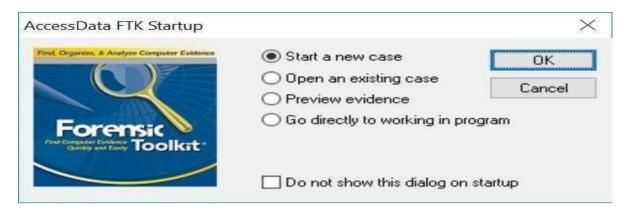
Port 2525 - this port is opened on all SiteGround servers in case port 25 is filtered (by your ISP for example) and you want to send non-encrypted emails with SMTP

Port 465 - this is the port used if you want to send messages using SMTP securely

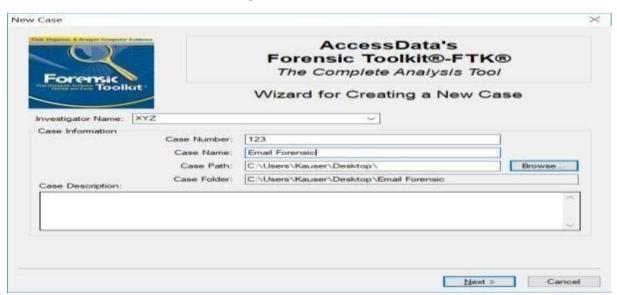
Recovering email using AccessData FTK:

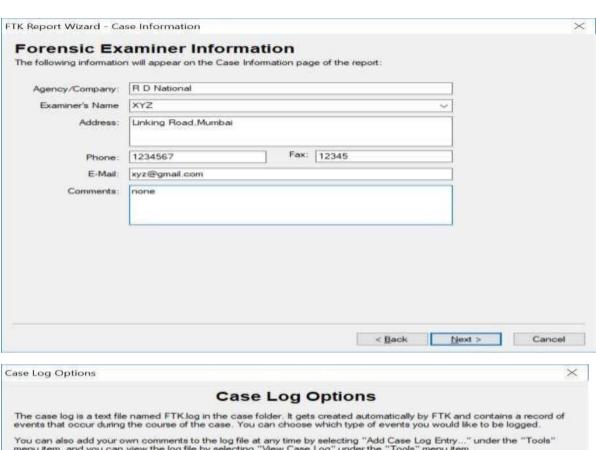
1. Start AccessData FTK by right-clicking the AccessData FTK desktop icon, clicking Run as administrator, and clicking Continue in the UAC message box (if you're using Vista). If you're prompted with a warning message and/or notification (see Figure below), click OK as needed to continue. If asked whether you want to save the existing default case, click Yes.

KFF Library Error	×	
The KFF Hash Library file was not found (KFF function disabled). You will need to install the KFF Library. The install for the KFF Library can be downloaded at www.accessdata.com under the downloads section.	60	
(If your hash database is stored in a custom location, please go to Tools Preferences and tell FTK where to find it.)		
Press OK to continue loading FTK without KFF functionality.		
OK Cancel		

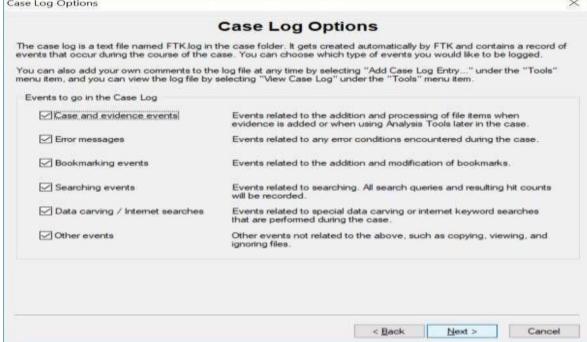


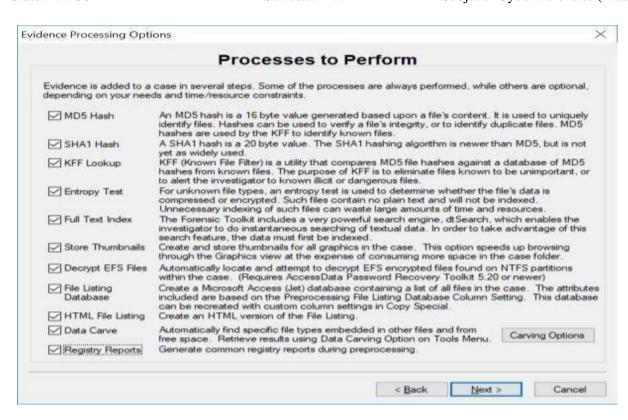
- 2. When the AccessData FTK Startup dialog box opens, click Start a new case, and then click OK.
- 3. In the New Case dialog box, type your name for the investigator name, and type the case number and case name. Click Browse, navigate to and click your work folder, click OK, and then click Next.
- 4. In the Case Information dialog box, enter your investigator information, and then click Next.
- 5. Click Next until you reach the Refine Case Default dialog box, shown in Figure below.
- 6. Click the Email Emphasis button, and then click Next.
- 7. Click Next until you reach the Add Evidence to Case dialog box, and then click the Add Evidence button.
- 8. In the Add Evidence to Case dialog box, click the Individual File option button (see Figure below), and then click Continue.
- 9. In the Select File dialog box, navigate to your work folder, click the Jim_shu's.pst file, and then click Open.
- 10. In the Evidence Information dialog box, click OK.

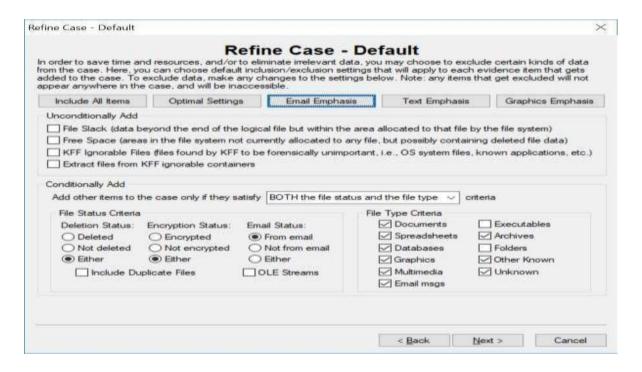


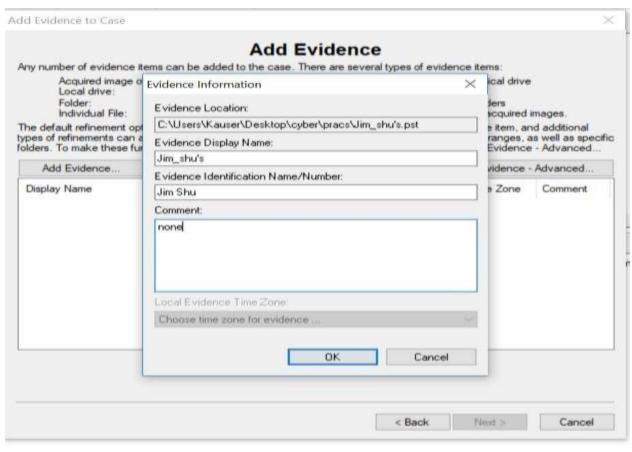


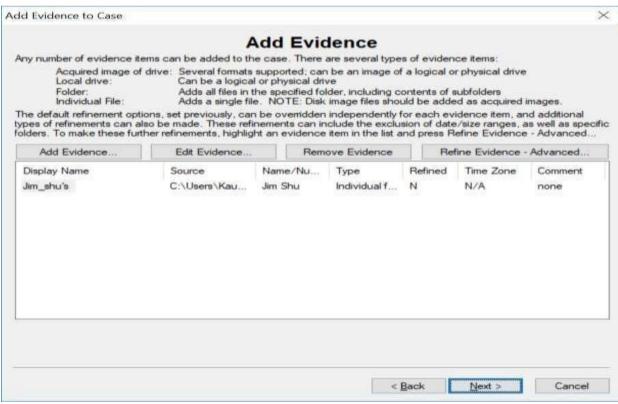
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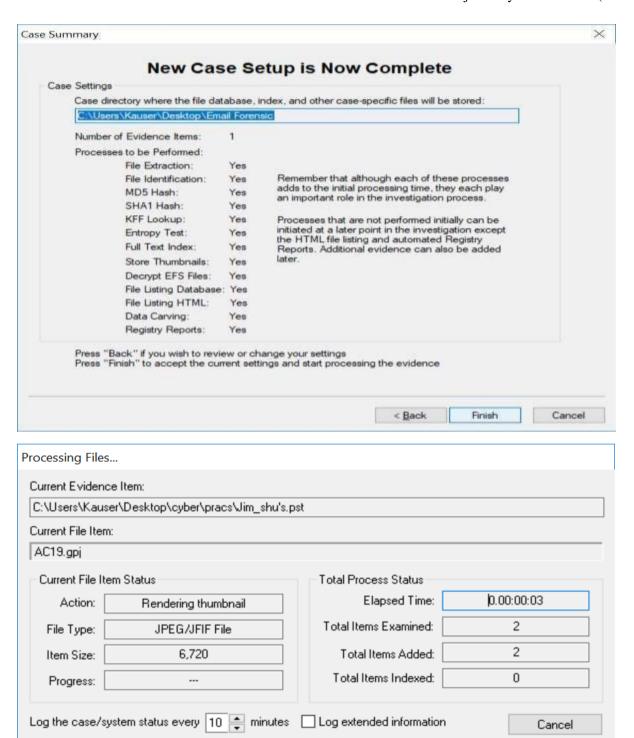




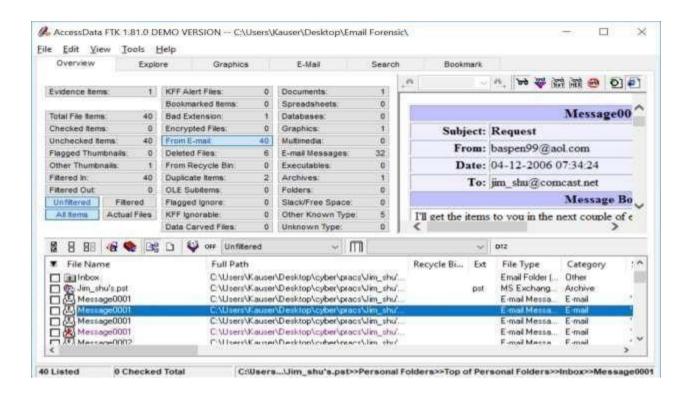




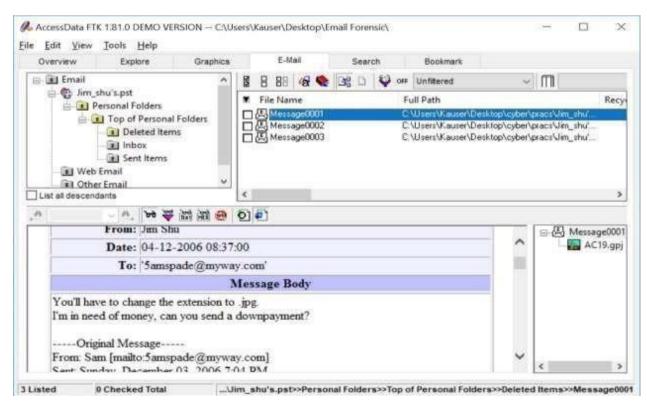




- 11. When the Add Evidence to Case dialog box opens, click Next. In the Case summary dialog box, click Finish.
- 12. When FTK finishes processing the file, in the main FTK window, click the E-mail Messages button, and then click the Full Path column header to sort the records (see Figure below).

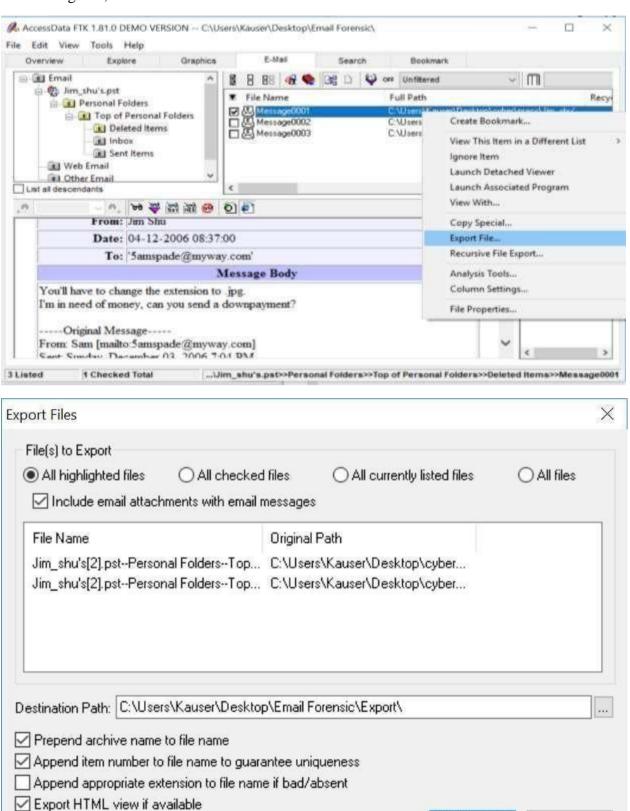


- For email recovery follow following steps:
- 1. Click the E-Mail tab. In the tree view, click to expand all folders, and then click the Deleted Items folder



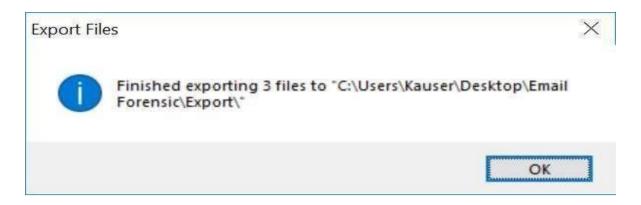
Export filtered text view

2. Right-click Message0010 in the File List pane and click Export File. In the Export Files dialog box, click OK

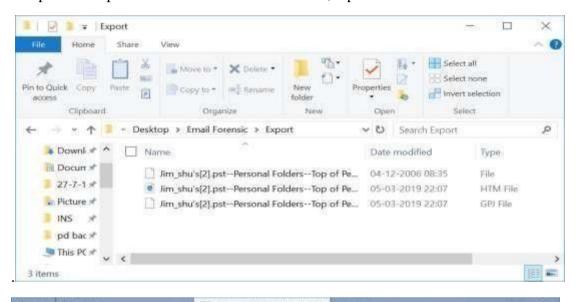


OK

Cancel

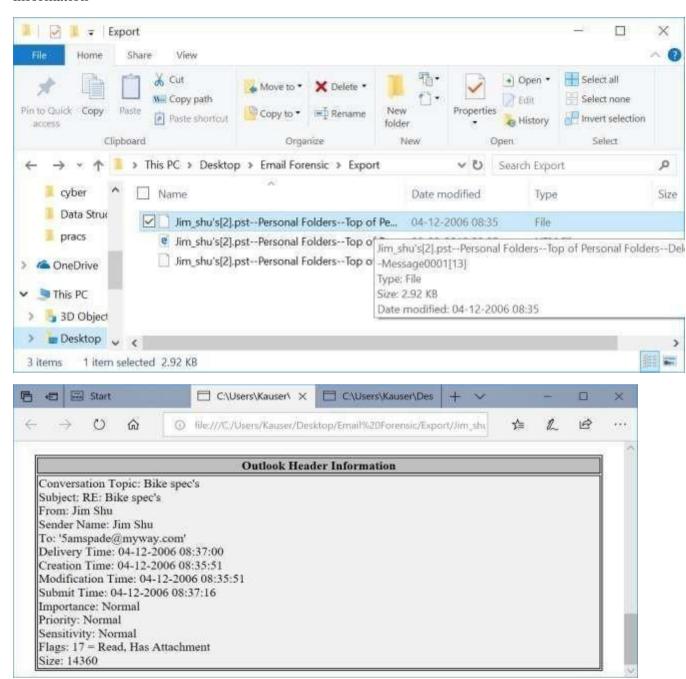


3. Open the Export folder to view the Email Files, Open the HTML file in browser





- > For analyzing header follow following steps:
- 1. Right Click the file type and Rename it to HTML and open in browser to view header information



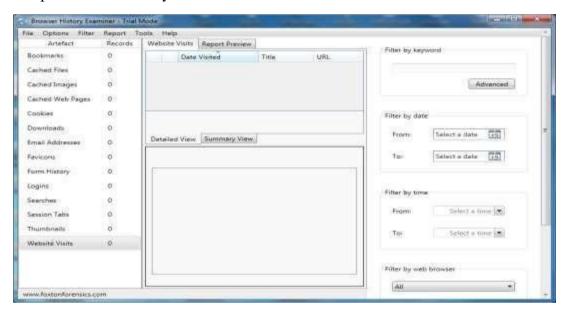
Practical No - 10

Aim: Web Browser Forensics

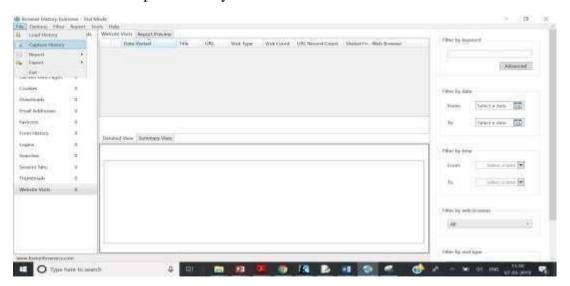
- -Web Browser working
- -Forensics activities on browser
- -Cache / Cookies analysis
- -Last Internet activity

Steps:

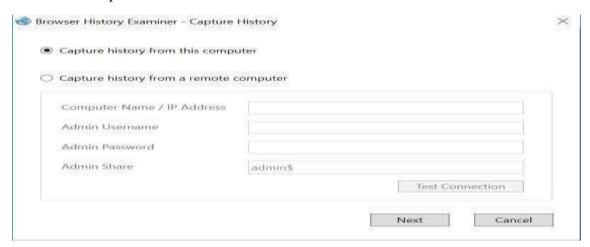
1. Open BrowserHistoryExaminer.



2. Click on file > Capture History.



3. Select the capture folder and click on next.



4. Enter the destination to capture the data.

Jser Profile:	Kauser	Kauser	
Browsers:	✓ Firefox	✓ Chrome	☑ Internet Explorer & Edge
Data:	✓ History	☑ Cache	☐ Archived History
Desti <mark>na</mark> tion:	C:\Users\Kauser\	Desktop\aaaa	

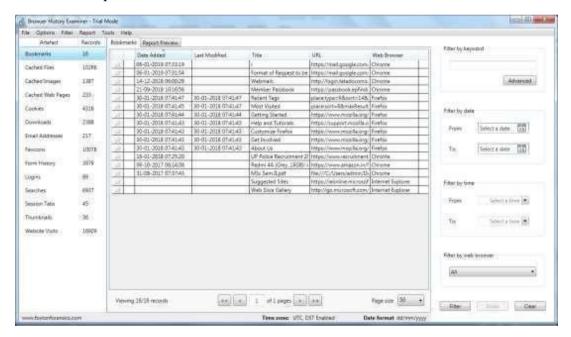
5. The History is been extracting.

Extracting Chrome bookmarks,	
Extracting Internet Explorer bookmarks	
Extracting Edge bookmarks	
Extracting Firefox cookies	
Extracting Chrome cookies	17
Extracting Edge cookies	
Extracting Internet Explorer cookies	E
Extracting Firefox form history	1
Extracting Chrome form history	<u>-</u>
	7

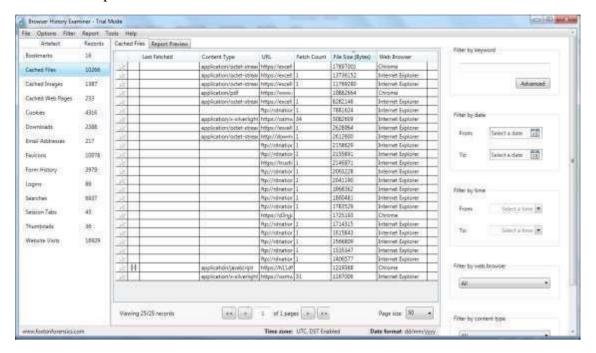
6. The data has been retrieved.



7. On the left panel click on bookmarks.



8. On the left panel click on cached files.

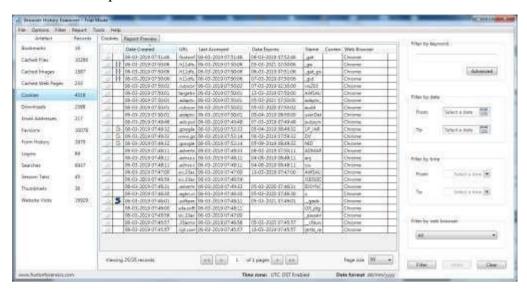


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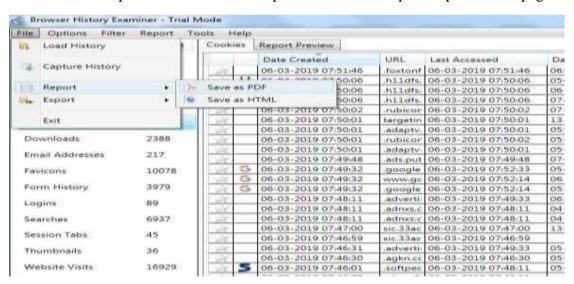
9. On the left panel click on cached images.



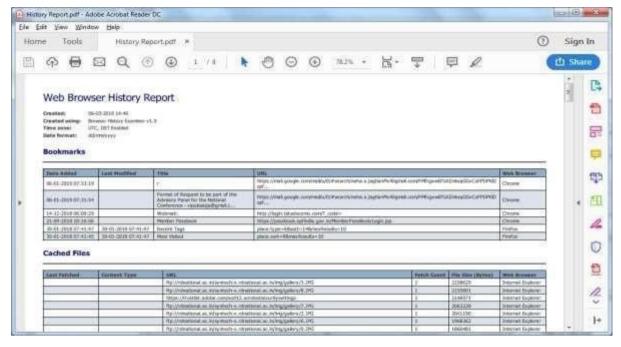
10. On the left panel click on cookies.



11. To Create Reports. Click on file > Report and save the report as pdf or html page.







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