Hands on Demonstration

Cybercrime Training Lab 1

Symposium on Cybersecurity & Information Assurance at FDU

May 1st 2013

30 minutes Elly Goei (3 PM -3:30PM)

30 minutes (3:30 PM- 4 PM)
Professor Eamon P. Doherty Ph.D., CPP, CCE, SSCP

Disclaimer

- This set of slides is for academic purposes only. The techniques showed in this slide set are only one possible set of methods that could be done during an investigation and should only be done in an authorized policy investigation or a law enforcement investigation by qualified authorized individuals.

Eamon Doherty Ph.D., CCE, CPP, SSCP

- Dr. Eamon Doherty is the Cybercrime Training Lab Director as well as an associate professor in Petrocelli College of Continuing Studies at Fairleigh Dickinson University (FDU).

- Dr. Doherty has also created three 1/2 day classes for law enforcement officers and security practitioners and published a variety of those class materials made during a Department of Justice grant. These classes are "PDA Forensics", "Cell Phone Forensics", and "Introduction Electronic Eavesdropping Device and Wiretap Detection."

Eamon P. Doherty Ph.D., CCE, CPP, SSCP
Why Get Certifications?

- CCE is Certified Computer Examiner
- SSCP – Systems Security Certified Practitioner
- CPP – Certified Protection Professional

- Certifications are important for when you go to court and a jury needs to be able to believe you know what you are talking about with regard to digital forensics.

Welcome to Today's Presentation

- I will demonstrate and speak about the following:

- 1. Metadata in Pictures
- 2. Permission to Examine Computers
- 3. Chain of Custody
- 4. Recovering a Password
- 5. Creating a Forensic Image of a Drive

Permission is Needed

We cannot just take a camera and look at its contents. We need to have permission or authority to view the contents.

1. Search Warrant is needed in law enforcement investigation

2. Policy investigation – camera is owned by school or corporation, no expectation of privacy by person using camera

3. Consent – Consent was given by camera owner

Chain of Custody Form

- Any investigation could result in findings that lead to a criminal investigation so it is best to:

- Document everything,
- Don’t allow evidence out of your sight
- Use a chain of custody form
- Use a Paraben Faraday Bag

Consultants

- If you are not sure of how to do this, get a consultant and get advice from:
- IACIS
- HTCIA
- ASIS International
- Kroll Ontrack

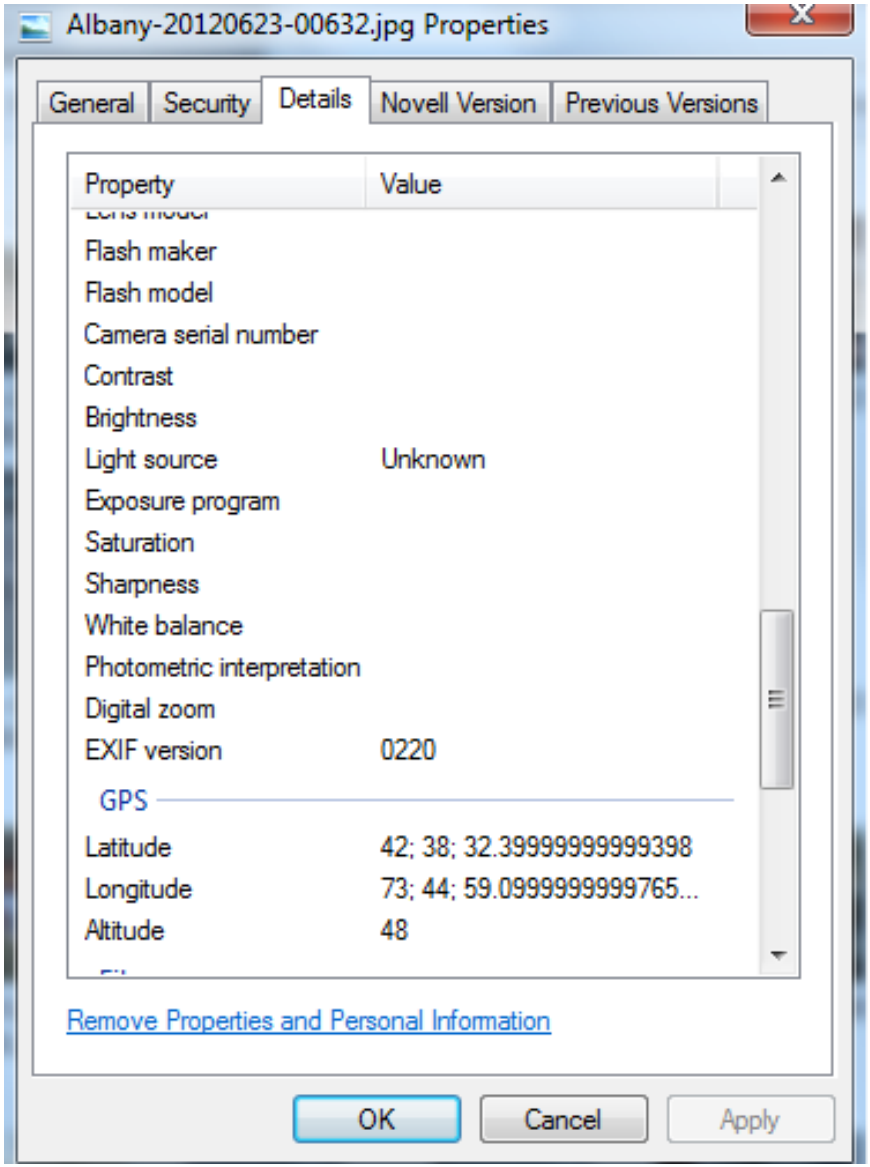
Report Writing

- Please be objective on your reports.

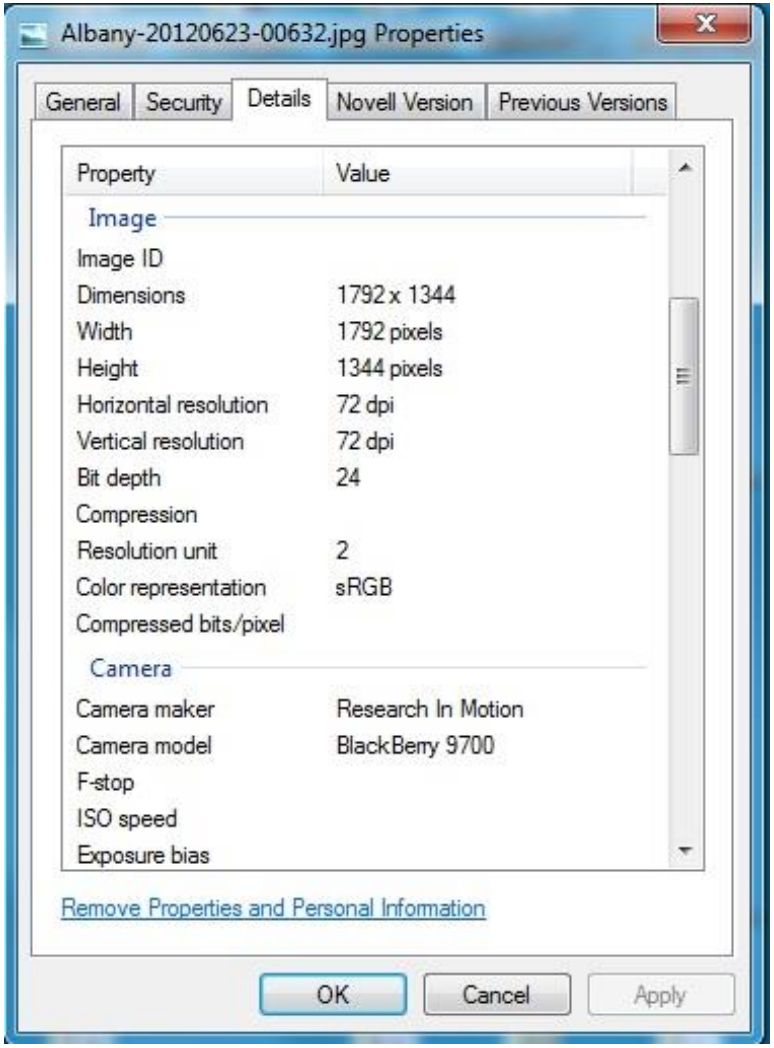
- Please look for evidence to find people innocent (exculpatory evidence) and evidence for use in supporting an allegation.

Digital Picture Forensics
Dr. & Mrs. Doherty – Where?

View Meta Data Inside Picture



MetaData – Right Click on Picture, Select Properties – Camera Details



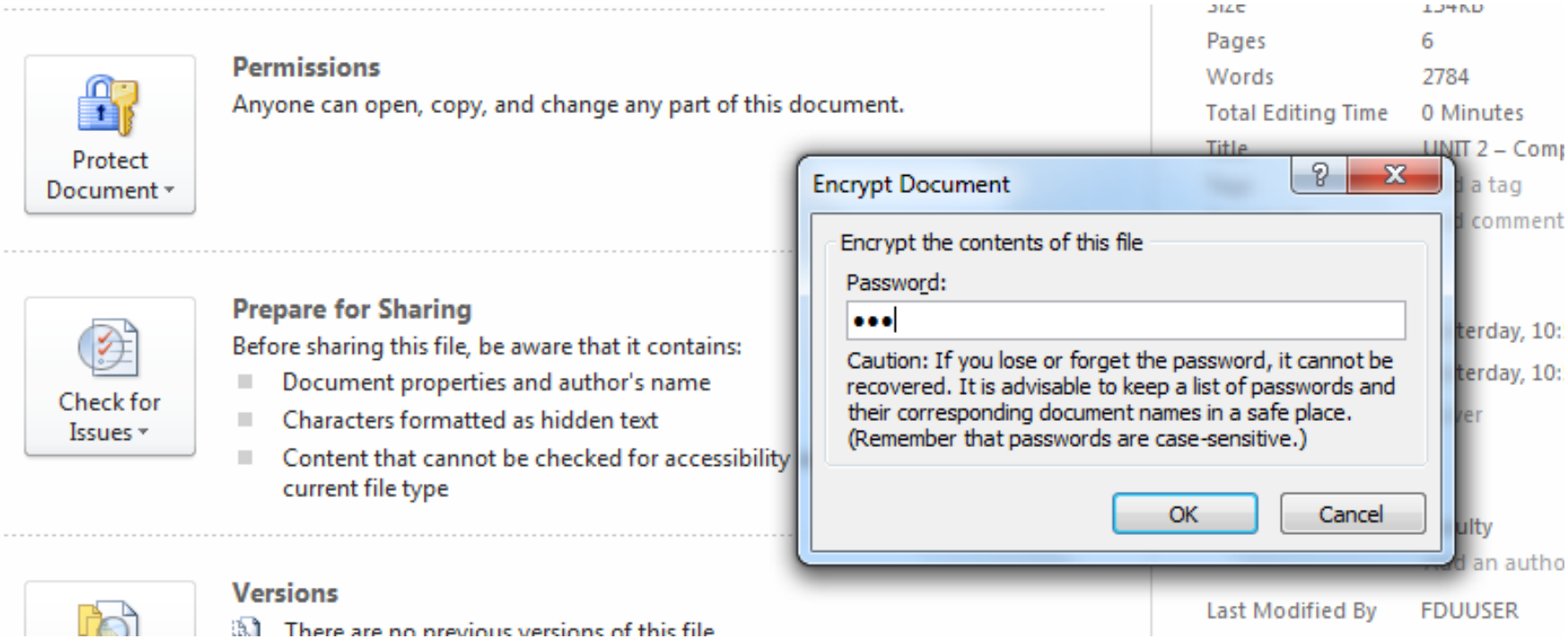
Create Map with www.gpsvizualizer.com

A Password Protected File May Need to Be Opened in an Investigation

- **Brute Force Attack** Can Be Used (every combination of characters and numbers) it is good if your computer uses an NVDIA Card which acts like another CPU or computer

- **Dictionary Attack** – Tries every word in the dictionary. Hundreds of languages are available.

Advanced Office Password Recovery From Elcomsoft Can Be Used



Forensic Image of a Drive

We need to make an exact byte for byte copy and verify it with an MD5 Hash.

1. The forensically wiped drive goes inside the Logic Cube Device.

2. The suspect's drive connects on the outside of the Logic Cube.

3. The investigator creates an exact copy of the suspect's drive and the drives are verified to be the same with an MD5 Hash.

Use Helix to Image a Drive

1. Please put the CD with Helix in the live system.

2. Please Run Helix and connect an external USB Drive.

3. The destination is the external USB SSD Flash drive and the source is the suspect's hard drive.

4. Please select "Acquire" and create the image of memory or a disk drive.

5. The original drive is preserved, the copy is examined.

The End

Thank you for attending the presentation.