

LAB EXERCISE CCTV LOG ANALYSIS

**FAKULTI TEKNOLOGI MAKLUMAT DAN KOMUNIKASI
UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

PHYSICAL SECURITY & ELECTRONIC SURVEILLANCE

BITS 2423

SEMESTER 2

SESSION 2020/2021

STUDENT NAMES:

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1.0 Learning Outcomes

By the end of this course, students will be able to:

1. Identify the CCTV log format and timestamp of the CCTV log
2. Identify the person-in-charge (PIC) who responsible for viewing, copying and saving the CCTV log for forensic investigation
3. Understand the fundamental of recording the incident procedure once the CCTV log has been obtained from cameras (i.e.: IP Camera).
4. Calculate the storage capacity for planning the storage of video allocation.

2.0 Introduction

CCTV Log Analysis laboratory exercise provides an environment for the student to imagine the real situation of CCTV implementation and analysis in the industry. The real situation is the video (evident) has been hacked (05/03/2021, 12:30 noon) to prevent police to implement enforcement to the drug dealer. The process involved dealing with the evidence for forensic investigation and managing the video storage. The student should experience the use of

CCTV Log for the process of video retrieval, video storage, and video analysis for further investigation and act of enforcement.

3.0 Sample of CCTV Log

Section 3.1 provides the sample of CCTV log captured by the IP Camera in the networked environment. Students are required to complete the form as given in section 3.2.

3.1 The recorded CCTV logs

- a) Number of Camera:
6
- b) Storage media reference number:
VD 000001
- c) Storage media type and batch number:
VD 000001.avd // VD 000001.avh
- d) Time/date/person placing storage media in store:
27/2/2021 / 12.26pm / 6 Person
- e) Time/date/person removing from secure storage for use:
5/3/2021 / 11.25am / 6 Person
- f) Time/date/person returning storage media to secure storage after use:
5/3/2021 / 12.55pm / 6 Person
- g) Remark column to cover additional points (e.g. erase/destroy/handed over to police/removed from recording machine):
Removed from the recording machine
- h) Time/date/person responsible for any subsequent removal of the storage media:
5/3/2021 / 12.30pm / 6 Person
- i) Time and date of delivery to the police, identifying the police officer concerned:
5/3/2021 / 1.03 pm / Police Officer:
Yusof Haslam
- j) Time/date/person in charge for delete/erase/destruction/copy/save:
5/3/2021/12.32 pm / 3 Person; Farok bin Amad, Lee Yong Dae and Muthusamy A/L Senuran
- k) Time/date/person in charge for delete/erase/destruction/copy/save:
5/3/2021 / 12.35 pm / employer; Maznan bin Mazli

3.2 Complete the form

Students are required to fill in the form provided consists of CCTV log details requirements:

- Visitors Log
- CCTV Incident Log
- CCTV Maintenance Log / Fault Reports Log
- CCTV Viewing Log

- Issued Copy of Image Log
- Daily CCTV System Check Log (Operators Log)

Visitors Log

Date	Arrival	Departure	Surname	Init.	Organisation	Position	Signature
27/2/2021							

CCTV Incident Log

Date	Time	Location
05/03/2021	12:30 noon	
Incident Type:		
Hacking		
Recording Number: 1		Live Incident Recording: YES/NO
Name of Person Reporting:		Employer: Maznan Bin Mazli
Description of Incident:		
The video (evident) has been hacked to prevent police to implement enforcement to the drug dealer.		
Response to Incident:		
If Police required, time requested?		Time of Police Arrival:
Yes		1.03pm
Name(s) of attending Police Officer(s):		Registered Number(s):
Yusof Haslam		
If medical assistance required, time requested:		Time of medical assistance arrival:
Name(s) of attending Medical Officer(s):		
Name of Monitoring Room Officer:		Signature:

CCTV Maintenance Log / Fault Reports Log

Date: 5/3/2021	Time : 11.25 am	Engineer:
Reason :		
Maintenance Details :		
Outcome:		

Viewing Log Of CCTV Images

Date of viewing	Time of Viewing	Tape/CD/DVD Identifier	Operator
5/3/2021	1.00pm	CD	Maznan bin Mazli

Name(s) of Person Viewing	Organisational Details
Maznan bin Mazli	Industry employee

Reason for Viewing
Weekly Audit
Outcome If Any: Found tampering of video footage
-

Issued Copy of Image Log

Reason for provision: Legal Proceedings/Subject access/Other			
Date of Creation	Time of Creation	Operator	Tape/CD/DVD Identifier
5/3/2021	12:35pm	Maznan bin Mazli	CD
Crime/Incident No	C001		
Police Officer / Third Party	Yusof Haslam		

Daily CCTV System Check Log

Building/Dept/Unit:

Date	Time	Operator	Date/Time Checked	Stamp	Cameras & Recording Quality Checked
5/3/2021					

4.0 Calculation of Storage Requirements

The following equation allows calculating the total amount of storage required for a particular CCTV operation:

- Determine the numbers of cameras (N_c);
- Determine the frame rate (frames per second) at which each camera will be recorded at (R_f); **given - 30.00**
- Determine the average size (in kilobytes) that each compressed frame of video will take up on the hard disk (S_f) after the compression ratio has been applied; **given - 3791**
- Approximate the activity (in percentage) time each camera will be recording at the above frame rate (A); **given - 20%**
- Determine the duration (in days) that video from each camera will be retained (D). **4 days**

Once these values are determined, the following formula can be used to determine the HDD capacity:

$$\text{Capacity (Gigabytes)} = \frac{N_c * R_f * S_f * A * (3600 * 24 * D)}{1000000}$$

Calculate the capacity (gigabytes) = **4716610.56**

A CCTV system's storage capacity is dependent on several factors:

- a. Image size;
- b. Frames per second;
- c. Number of cameras;
- d. Operational hours;

This equation is applicable to scenarios where all closed-circuit cameras produce images of the same size and frame rate over the same operational period. In more complex systems, storage requirements can be calculated for each camera, and totaled to provide the overall system requirements.