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## Group Assignment:

### Research and Tools Analysis with Demonstration

*\*\*This assignment contributes 45% to the overall marks for the module*

**Research progress date:**      **Week 9 –**  
**Presentation date:**              **Week 12 –**  
**Due date:**                              **Week 14 –**

#### Learning Outcomes:

Discuss current trends in security threats and countermeasures in terms of ethics and consequences (A2, PLO4)	<b>Section 1</b> Group Component
Propose appropriate tools and techniques to meet specific security objectives (A3, PLO6)	<b>Section 2</b> Individual Component

#### Instructions:

This group assignment consists of **TWO (2)** sections; with each section designed to address a specific Learning Outcome. Maximum of 3 persons are allowed in a group. No one is allowed to work individually.

<b>Section:</b>	<b>Task:</b>	<b>Marks Allocation:</b>
Section 1	Research	45%
Section 2	Tools Analysis with Demonstration	55%

#### Section 1: Research

*Word Count: Approximately 1000 words per student*

This is to strengthen your comprehension and research skills relevant to the topic area. Please be sure to refer to reliable resources. You should use your own words (based your understanding of the sources), with proper academic writing and citation of references.

Topics are listed below. Please choose only **ONE (1)** topic per group.

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**Topic Areas:**

<b>Research Area</b>	<b>Possible Sub-topics (but not limited to)</b>	<b>Possible Tools (but not limited to)</b>
- Threat Intelligence	<ul style="list-style-type: none"><li>- Operating system / application vulnerability databases</li><li>- Reporting requirements and where to find the latest attack descriptions / cases</li><li>- Managed Security Service Providers (MSSP)</li></ul>	<ul style="list-style-type: none"><li>- “Pen Testing” tools</li><li>- Vulnerability scanners</li><li>- Security control checklists</li></ul>
Windows or Android	<ul style="list-style-type: none"><li>- Firewall</li><li>- Anti-virus</li><li>- Full-disk encryption</li><li>- Access Control</li></ul>	<ul style="list-style-type: none"><li>- Standard tools</li><li>- Freeware / third-party tools</li><li>- Sys internals (Windows)</li><li>- Authentication (fingerprint, voice, face, etc.)</li></ul>
Encryption and PKI	<ul style="list-style-type: none"><li>- Evolution of SSL and TLS</li><li>- CA services and digital certificate management</li><li>- Cryptography and cryptanalysis techniques</li></ul>	<ul style="list-style-type: none"><li>- Application libraries for different types of systems</li><li>- CA tools for self-signed certificates</li><li>- Code libraries (C#, Java, Python, PHP ... // Visual Studio, Eclipse, GitHub ...)</li></ul>

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## Section 2: Tools Analysis with Demonstration

*Word Count: Approximately 1200 words per student*

This is to assess your ability to analyse selected software tools and demonstrate the usage and features of the tool for specific purposes.

**Minimum requirement is ONE tool per person.** Choose any relevant tool for analysis according to the topic selected in Section 1. Then come up with appropriate justification for selecting the tool (for example: best of class, classic, newest) and detailed analysis plans. These plans should cover all possible aspects in analysing the tool in terms of its features, user interface, performance etc.

**Each student is responsible to explore his/her chosen tool and is expected to demonstrate the tool's usage during the presentation.** A comparison table would be helpful in summarizing the findings of the analysis of these tools presented by the group.

**Please make a video of how to use the tool using a program like Cam Studio**

[https://portableapps.com/apps/utilities/camstudio\\_portable](https://portableapps.com/apps/utilities/camstudio_portable)

No audio is necessary, just show how it works – you will find this makes your presentation much smoother.

**1.Wireshark**

**2.Nmap**

**4.Metasploit Framework**

**5.Burp Suite Scanner**

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### **Report Guidelines:**

Document the results of your work in a **professional and systematic** manner, in the form of a research report. **ONE (1)** softcopy and hardcopy of your documentation is to be submitted, with a group section that gives an overview of the topic, and a section with more in-depth analysis for each tool that has been selected for demonstration.

Complete documentation should at least contain the following:

- 1) Cover
  - 2) Table of contents
  - 3) Introduction
  - 4) Write up for Section 1
  - 5) Write ups for Section 2 (2.1, 2.2, 2.3)
  - 6) Conclusion
  - 7) References
  - 8) Workload Matrix
  - 9) Peer evaluation of groupwork (submit separately)
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## Marking Rubric

The assignment will be evaluated based on the following criteria:

Section 1: Research (PLO4 - Interpersonal Skills)						
Marking Criteria	0-7 (Fail) ( F )	8-9 (Marginal Fail) ( D )	10-12 (Pass) ( C- C C+ )	13-14 (Credit) ( B B+ )	15-20 (Distinction) ( A A+ )	Marks Awarded
<b>Report Format</b>	Serious deficiencies in vocabulary & grammar, table of contents, page numbering, line spacing, consistent font	Noticeable deficiencies in vocabulary & grammar, table of contents, page numbering, line spacing, consistent font	Acceptable vocabulary & grammar, table of contents, page numbering, line spacing, consistent font	Few and minor deficiencies in vocabulary & grammar, table of contents, page numbering, line spacing, consistent font	Near perfect vocabulary & grammar, table of contents, page numbering, line spacing, consistent font	
<b>Report Structure</b>	Serious deficiencies in introduction & conclusion, diagram labelling, numbered section titles/subtitles, citations and references	Noticeable deficiencies in introduction & conclusion, diagram labelling, numbered section titles/subtitles, citations and references	Acceptable introduction & conclusion, diagram labelling, numbered section titles/subtitles, citations and references	Few and minor deficiencies in introduction & conclusion, diagram labelling, numbered section titles/subtitles, citations and references	Near perfect introduction & conclusion, diagram labelling, numbered section titles/subtitles, citations and references	
<b>Quality of Research</b>	Serious deficiencies in level of depth in the description of the topic and its importance	Noticeable deficiencies in level of depth in the description of the topic and its importance	Acceptable level of depth in the description of the topic in the context of security threats and countermeasures	Good level of depth in the description of the topic and current trends in security threats and countermeasures	Excellent in level of depth in the description of the topic and current trends in security threats and countermeasures	
<b>Breadth and Selection of Sources</b>	Serious deficiencies in the selection of sources and consideration of their credibility	Noticeable deficiencies in the selection of sources and consideration of their credibility	Acceptable level of breadth in the selection of sources and consideration of their credibility	Few and minor deficiencies in the selection of sources and consideration of their credibility	Excellent level of breadth in the selection of sources and consideration of their credibility	
<b>Teamwork</b>	No research progress report, Work Breakdown/ Peer Evaluation shows minimal effort to collaborate	Poor research progress report, Work Breakdown/ Peer Evaluation shows lack of engagement	Acceptable research progress report, Work Breakdown/ Peer Evaluation shows division of tasks	Research progress report shows early engagement, Work Breakdown./ Peer Evaluation shows collaborative effort	Research progress report shows substantial early progress, Work Breakdown./ Peer Evaluation shows excellent collaborative effort	
<b>Total Marks - Section 1</b>						<b>/ 100</b>

## Section 2: Tools Analysis with Demonstration

### (PLO6 - Digital Skills)

Marking Criteria	0-7 (Fail) (F)	8-9 (Marginal Fail) (D)	10-12 (Pass) (C- C C+)	13-14 (Credit) (B B+)	15-20 (Distinction) (A A+)	Marks Awarded
<b>Selection of Tool</b>	Little or no evaluation provided to justify selection of the tool	Only general or superficial evaluation of alternative tools provided	Adequate justification for selecting the tool based on product reviews	Clear criteria used to justify selecting the tool based on comparison with others	Clear criteria used to justify selecting the tool based on analysis of objectives and alternatives	
<b>Review of Features</b>	Write-up shows no familiarity with accessing and using basic features of the tool	Write-up shows little familiarity with accessing and using basic features of the tool	Write-up shows good familiarity with accessing and using most features of the tool	Write-up shows investigation and experimentation with features of the tool	Write-up shows thorough investigation and experimentation with all features of the tool	
<b>Technical Evaluation</b>	Write-up shows little or no familiarity with techniques used in a simple tool	Write-up shows basic familiarity with techniques used in a simple tool	Write-up shows understanding of standard features and underlying techniques	Write-up includes selection of interesting features and underlying techniques	Write-up highlights unique features and underlying techniques	
<b>Critical Evaluation</b>	Little or no evaluation of the usefulness of the tool for meeting security objectives	General or superficial evaluation of the usefulness of the tool for meeting security objectives	Acceptable evaluation of the usefulness of the tool for meeting a specific security objective	Good evaluation of the strengths and weaknesses of the tool relative to specific security objectives	Thorough evaluation of the strengths and weaknesses of the tool relative to specific security objectives	
<b>Presentation &amp; Demo</b>	Poor quality of visual aids / video, unable to explain and demonstrate accessing and using features of the tool	Marginal quality of visual aids / video, superficial or incomplete explanation and demonstration of accessing and using features of the tool	Acceptable quality of visual aids / video, able to explain and demonstrate accessing and using features of the tool	Creative use of visual aids / video, good explanation and demonstration of accessing and using features of the tool	Creative use of visual aids / video, in-depth explanation and demonstration of accessing and using features of the tool	
<b>Total Marks - Section 2</b>						<b>/100</b>

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Total Marks Section 1 * 0.45	
Total Marks Section 2 * 0.55	
Final Mark	
Additional Comments :	

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