**ISEC-615 - Fundamentals of Cybersecurity**

**Cybersecurity Principles Assignment No. 1.**

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As the world continues to advance into the Digital Era the topic of cyber security becomes a more prevalent force. Now-a-days cybersecurity threats are an ever increasing risk for Government, Business, and for the consumer. Every day malicious forces are trying to adapt and overcome these cybersecurity defenses for either financial or political gain. But, what is cybersecurity? The [National Initiative for Cybersecurity Careers and Studies](https://niccs.us-cert.gov/) defines cybersecurity as **“**The activity or process, ability or capability, or state whereby information and communications systems and the information contained therein are protected from and/or defended against damage, unauthorized use or modification, or exploitation.”( Niccs Glossary,2019). Cybersecurity is a pretty unanimous term across all regions and are neighbors to the east in the United Kingdom define Cybersecurity as “a subset of information security. It specifically focuses on protecting computer systems and their components – including hardware, software and data – and digital infrastructure from attack, unauthorized access or being otherwise damaged or made inaccessible. Data centers, websites, programs, servers, or accounts can all be exploited through a cyber-attack.”(ItGovernanceUK, 2019). As from government entities the corporate sector also has their input on what cybersecurity defines. Paloalto networks defines cybersecurity as “a set of techniques used to protect the integrity cyber networks, programs and data from attack, damage or unauthorized access.”(What is cybersecurity Paloalto 2019.)

In Cybersecurity there is the basic principles of CIA, confidentiality, integrity, and availability. These principles all intertwine and directly correlate all with each other. To introduce the relationships between these principles me must first understand what each of them mean. To begin, Portland based software company Tripwire describes confidentiality as Tripwire describes confidentiality as “The correct level of access should be given to only those people and processes that need it to complete their duties. If no access is required then none should be given.” (EdonNov,2105). Essentially,

No body should be able to see what they have no business in. That brings us to the concept of integrity, IT education platform Techopedia states that integrity is “This means that any changes to the information by an unauthorized user are impossible (or at least detected), and changes by authorized users are tracked.” (Staff, T 2017.) For example if you and a colleague both request the same document from an internal resource, but both get back different documents. How would you know which is the correct document? Integrity solves this issue. Lastly this brings us to availability, It has been said that availability is “data that can be accessed when needed. A problem such as a hardware failure or a hacking attack might prevent access to data. Security professionals must have solutions to ensure data can be accessed when a problem such as one of these occurs. ” (Lavendaer, L ,2019 pg47)

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