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CYSE 200T

Date: 9/11/2024

The CIA Triad

BLUF

The CIA Triad is the basic framework for cyber security professionals when it comes to data security and policies. This paper explains the basic idea of the CIA triad, how it leads to authentication and authorization, and the way the parts of the CIA triad work together to keep systems safe.

The CIA Triad

The CIA Triad involves three different parts; confidentiality, integrity, and availability. Confidentiality simply means limiting who can see what data and adding security measures to make sure that the data is secure (Chai, 2022). Integrity ensures that data is accurate and that it will not be meddled with or changed without authorization (Moss, 2022). Lastly, availability means that everyone who is authorized to access information can and that the software and hardware are up to date (Moss, 2022).

Authorization vs. Authentication

Authentication and authorization are very important aspects of securing different systems. The term authentication means making sure that a person is who they say they are before giving them access to the information (*Authentication vs. authorization: Key differences*, n.d.). Two-factor authentication is one instance where authentication is used to make sure that the person whose account is being signed into is actually trying to sign into their account (*Authentication vs. authorization: Key differences*, n.d.). Authorization, on the other hand, indicates the process that comes after you identify a person. It makes sure that that person is allowed to access the information and that they are not

overstepping what they are allowed to see (*Authentication vs. authorization: Key differences*, n.d.).

Example

To see how these 5 aspects of cyber security work together, we can look at a debit card and an ATM. When we use an ATM, there are certain measures that the machine and bank use to make sure that information is kept private (Moss, 2022). First, the ATM uses two-factor **authentication** via the actual bank card and the pin code to keep the **confidentiality** of information and to ensure that only the **authorized** person can access it. **Integrity** ensures that the changes that are made on the ATM are also made in the bank itself. Lastly, **availability** is simply providing good access to ATMs so people do not have to go too far out of their way.

Conclusion

Confidentiality, integrity, and availability, which make up the CIA Triad, are very important parts of cyber security when it comes to allowing access to information. The CIA Triad works hand in hand with Authentication and Authorization to guarantee that a person is who they say they are and that they have permission to see the information. Without these models, there would be no such thing as private or reliable information. Individuals could not safely store sensitive information on a device without others accessing that information with ease.

References

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