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CIA Triad, Authentication and Authorization Write Up

In the ever-evolving world of Information Technology, one thing always remains constant: security. The security to access our private documents, the security to ensure that no one outside of ourselves can access such private documents, the security that they shall remain intact should anything unforeseen event happens, and the security that we can readily access them when we need them. This is where three of the IT world comes into play, the CIA Triad, Authentication and Authorization. While these three factors play an important role in such a role, it is important to understand these factors, and the difference between authorization and authentication.

The CIA Triad is an anagram for the words Confidentiality, Integrity, and Availability. Each word plays an important role in the Triad and is essential for ensuring that information is readily available for us. Confidentiality is the first step for the Triad and revolves on making sure that sensitive information is only available for the right people or on the correct systems. In order to achieve this though, encryption is a must. In encryption, sensitive information is turned into a format that can only be read with the right decryption. Following Confidentiality is Integrity, which makes certain that the information is accurate and trustworthy. It protects the unwanted changes to such information, whether that be alterations, corruption or even tampering. Integrity achieves this by using algorithms to create a code for the information. The final part of the Triad is Availability which allows for authorized people to have their information uninterrupted and whenever required. Availability defends against disruptions like denial-of-service attacks through redundancy. In doing so, the system allows for the correct people to view their required information without any kind of hassle.

While understanding the systems of the CIA Triad is important, it’s also important to understand the differences between Authorization and Authentication. While the two go hand in hand with computer systems, they are not one in the same. Authentication boils down to one simple question: “who are you?” This question is asked by all IoT devices to ensure that the correct user is trying to access that specific device. An example of this would be the modern-day computer. Before being able to access any kind of information, the computer will ask the question of who you are. To ensure that the authenticate user is logging in, it can ask for a username and password, or if it is just one user for the computer, just a password.

With Authentication asking the question of “who are you”, Authorization has its own question: “what can you view?” Authorization makes sure that the user or users who access an IoT device can access only the information that pertains to them. An example of this would be an organization’s network system. Logging into the network means that the user is authenticated to access the system. However, the system will ensure that only the information that they are authorized to view will be available to them. Should the user attempt to view something that is outside of their jurisdiction, the system will recognize that and block them from the document.

The world of Information Technology is a variety of systems that ensure many things. The CIA Triad allows users to retrieve their information at any time and protects it from unwanted changes and forceful interruptions. But it is also important to understand that these systems are not all one in the same, much like the difference between authorization and authentication. While it may not seem like something necessary to remember, forgetting which one is which could mean the difference between accessing a vital document or being locked out of a system.

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