

Kennice Balmoria
Professor Umphlet
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The CIA Triad

The CIA Triad is a basic model used in cybersecurity to help organizations protect their information. According to the Chai article, the CIA Triad stands for Confidentiality, Integrity, and Availability. The article explains that confidentiality means “preventing sensitive information from unauthorized access attempts” and often uses tools like passwords, encryption, and two-factor authentication to keep data private. Integrity focuses on keeping data “consistent, accurate, and trustworthy,” which means making sure information is not changed by accident or by attackers. Organizations use things like version control, checksums, and backups to protect integrity. Availability means information should be “consistently and readily accessible for authorized parties,” which includes maintaining hardware, updating systems, and using backups and failover systems to prevent downtime.

Along with the CIA Triad, it’s important to understand the difference between authentication and authorization. These two words sound similar, but they do different things. Authentication answers the question: Who are you? This is where a user proves their identity with a password, fingerprint, or ID badge. Authorization answers the question: What are you allowed to do? Even after logging in, a user may only have permission to see certain files or perform certain actions. For example, when you log into online banking, entering your username and password is authentication. Being allowed to view your balance but not the bank’s internal records is authorization.