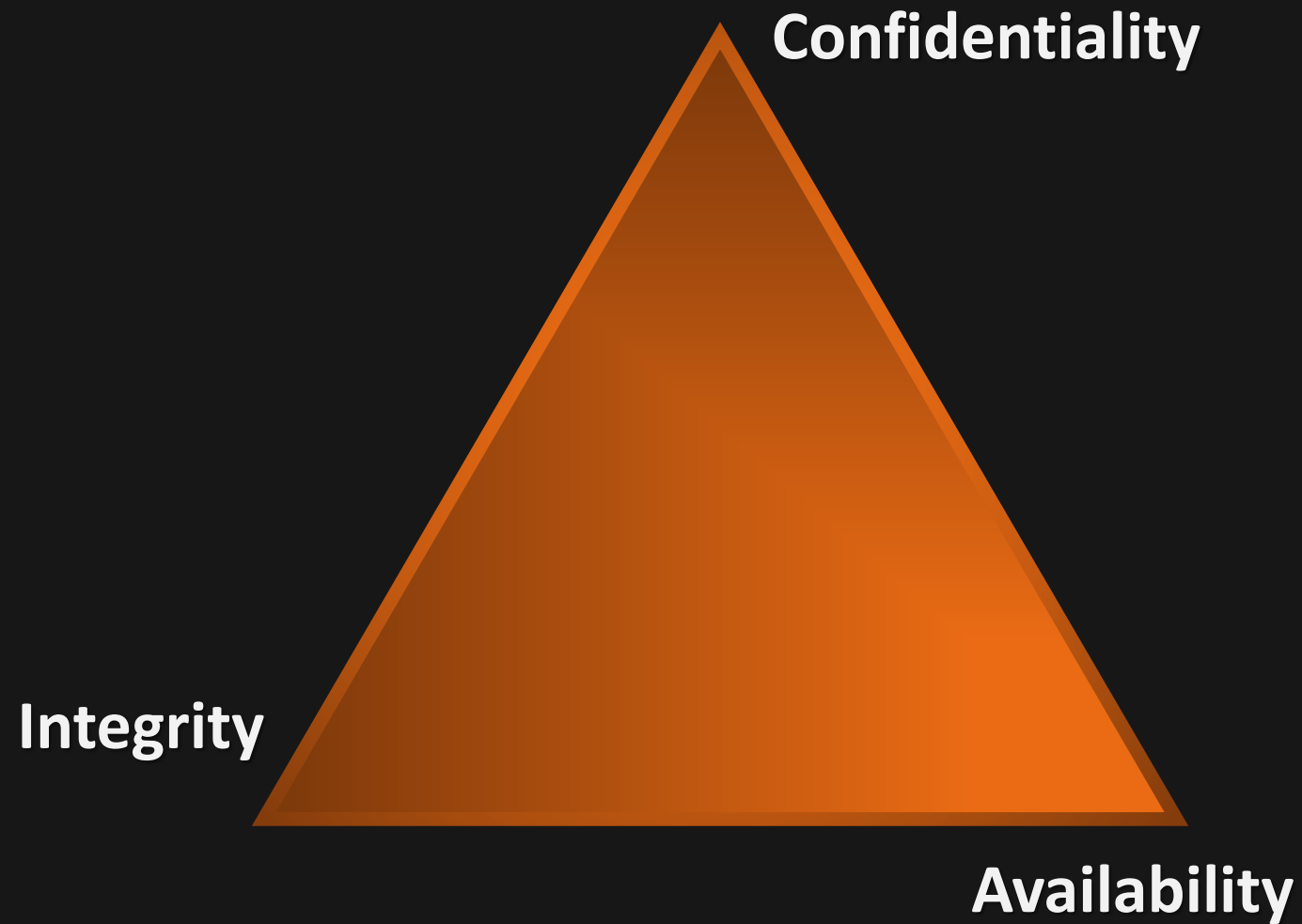# INFORMATION SECURITY

Fundamentals

THE "CIA" Triad

CONFIDENTIALITY

Confidentiality is the concept of the measures used to ensure the protection of the secrecy of data, objects, or resources.

The *goal* of confidentiality protection is to prevent or minimize unauthorized access to data.

Confidentiality focuses security measures on *ensuring* that no one other than the intended recipient of a message receives it or *is able to read it*.

INTEGRITY

Integrity is the concept of protecting the reliability and correctness of data.

Integrity protection prevents unauthorized *alterations* of data.

It ensures that data *remains* correct, unaltered, and preserved.

INTEGRITY

CORRECT   UNALTERED   PRESERVED

INTEGRITY

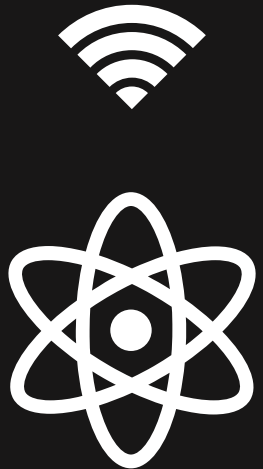**Integrity** is the concept of protecting the reliability and correctness of data.

Integrity protection prevents unauthorized *alterations* of data.

It ensures that data *remains* correct, unaltered, and preserved.

AVAILABILITY

Availability = authorized subjects are granted timely and uninterrupted access to objects.

Often, availability protection controls support *sufficient bandwidth* and *timeliness* of processing as deemed necessary by the organization or situation.

Threats to availability: hardware failure, software errors, environmental disasters, hacking attacks (e.g., DDoS)..

INFORMATION SECURITY

Fundamentals