







JENNER HALL FEN

User

Salary

...

Alice

...

Eve

...

...

...

...

10,000 €

2,718 €

**DATA INTEGRITY & ASSOCIATION**











EVER GETS AN INSTANT PROMOTION

**0X123456...**





3,141€

**Problem: Sensitive data can be manipulated.**

# DATA INTEGRITY & ASSOCIATION

0X123456... ✓

**Problem:** Sensitive data can be manipulated.



| User  |                               | Salary   | ... |
|---|-------------------------------|----------|-----|
|   | Alice                         | 3,141€   | ... |
|  | Eve                           | 10,000 € | ... |
| ...   | EVE GETS AN INSTANT PROMOTION |          | ... |

## DATA INTEGRITY & ASSOCIATION

0X123456... ✓

**Problem:** Sensitive data can be manipulated.

**Solution:** Use cryptographic checksums with a secret.

| User   | Salary  | MAC*      |
|--|---------|-----------|
|  Alice | 3,141€  | 0x4711... |
|  Eve  | 2,718 € | 0xabcd... |
| ...  | ...     | ...       |

\* Checksum with a secret: hmac, AEAD, public key signatures