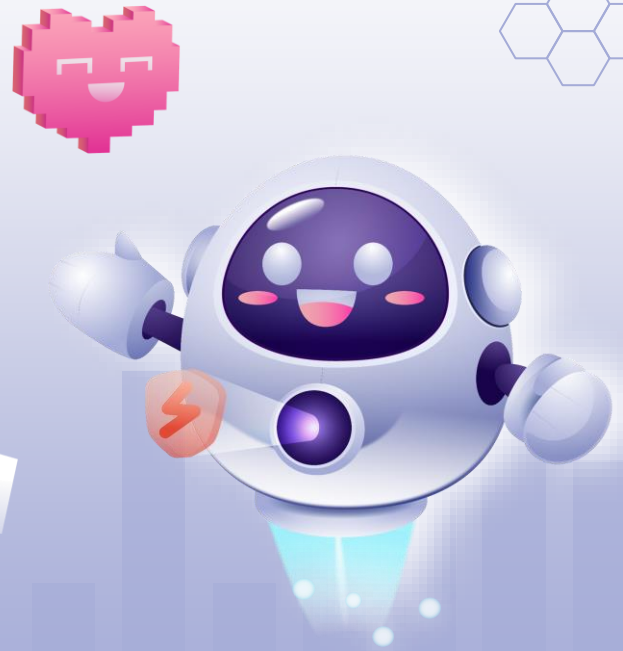
Professional and Social Aspects of Informatic's Engineering

LEI 2023/2024

# CyberSecurity and Privacy

## Data storage system



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Vitalie Bologa - 107854

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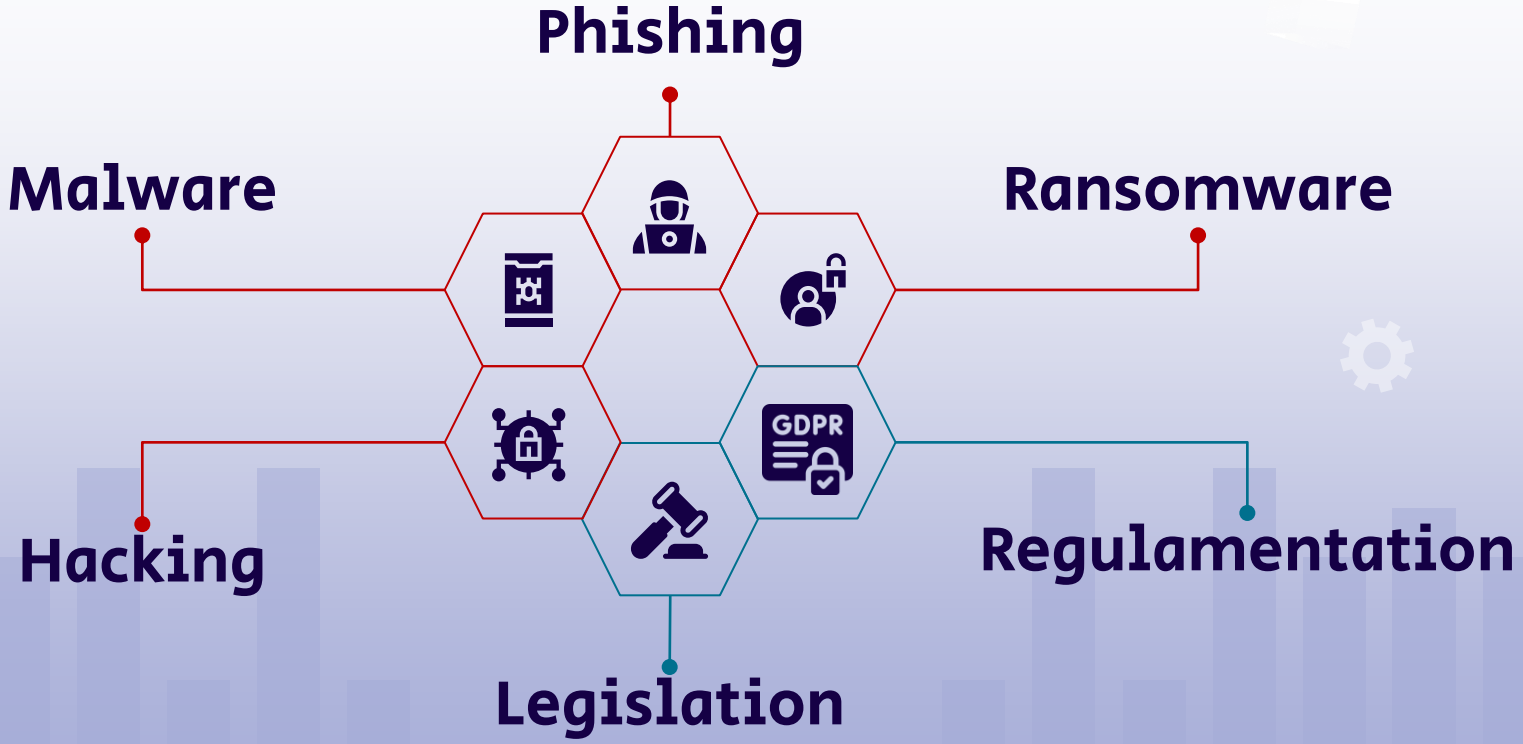
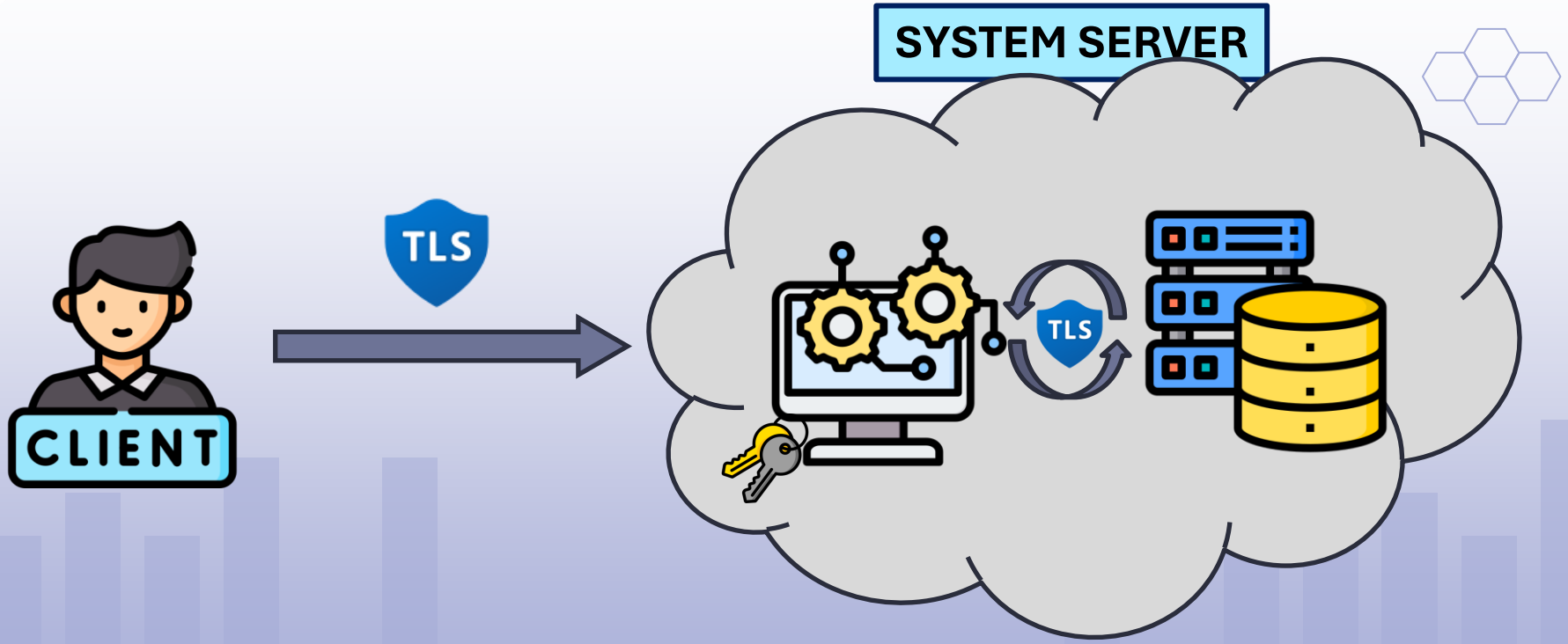
# 01 Challenges of Cybersecurity and Privacy

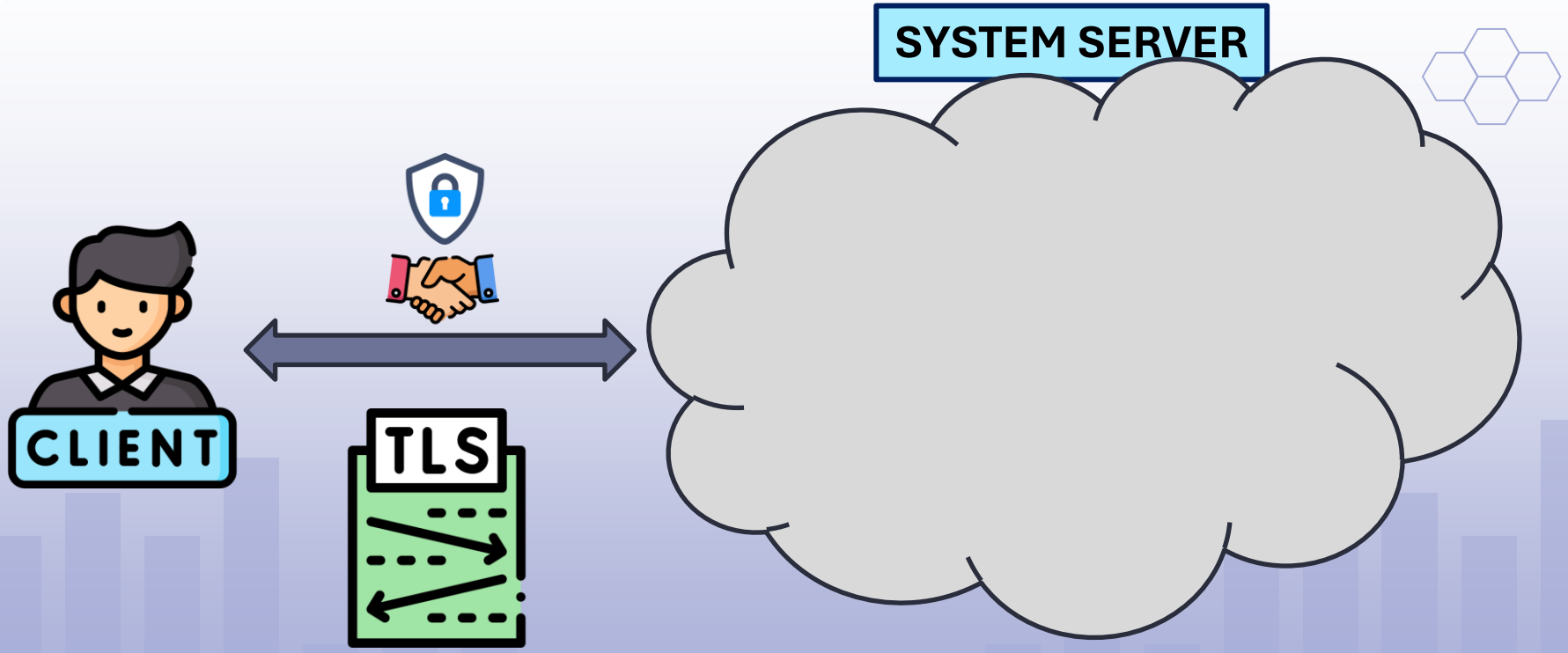
# Robuste Data Storage Systems



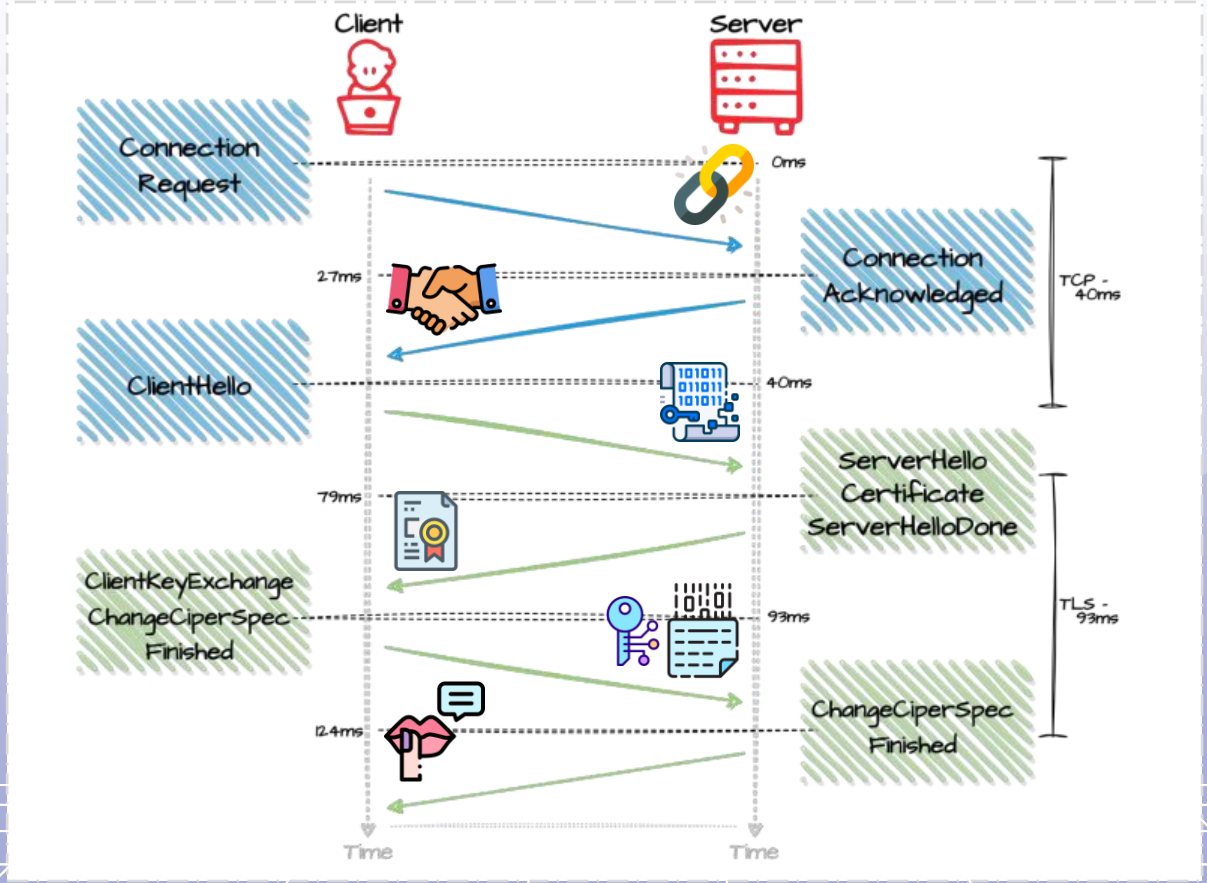
02

# Secure Data Storage System Concept


SYSTEM SERVER
TLS
CLIENT
TLS

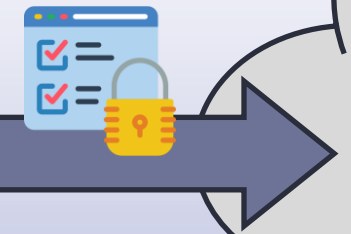

SYSTEM SERVER
CLIENT
TLS

# TLS PROTOCOL




# Key Management

# SYSTEM SERVER



## Generation of Asymmetric Key Pairs

- Private Key
- Public Key

## Secure Key Storage

- Hardware Security Module

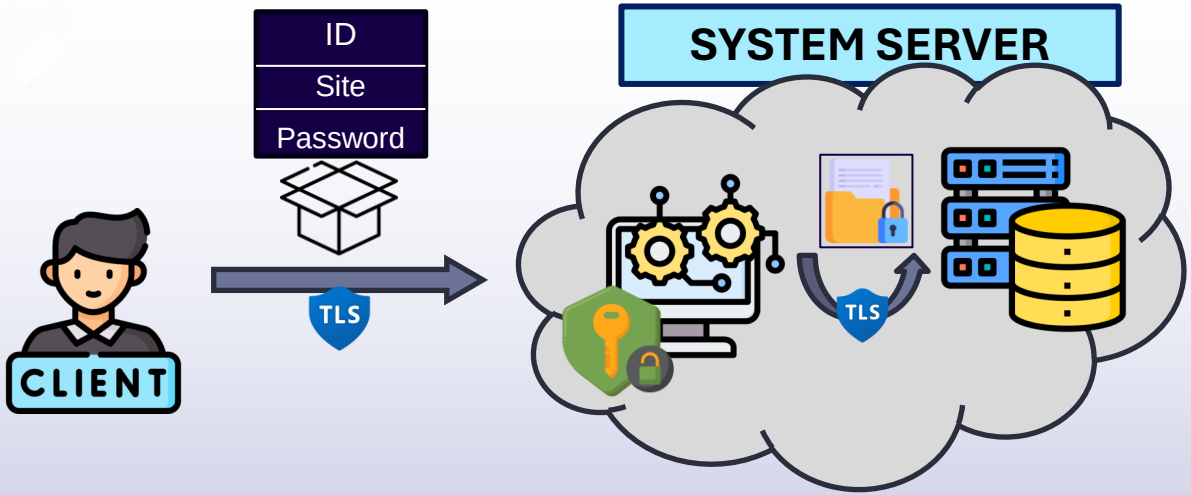
## Key Monitoring and Auditing

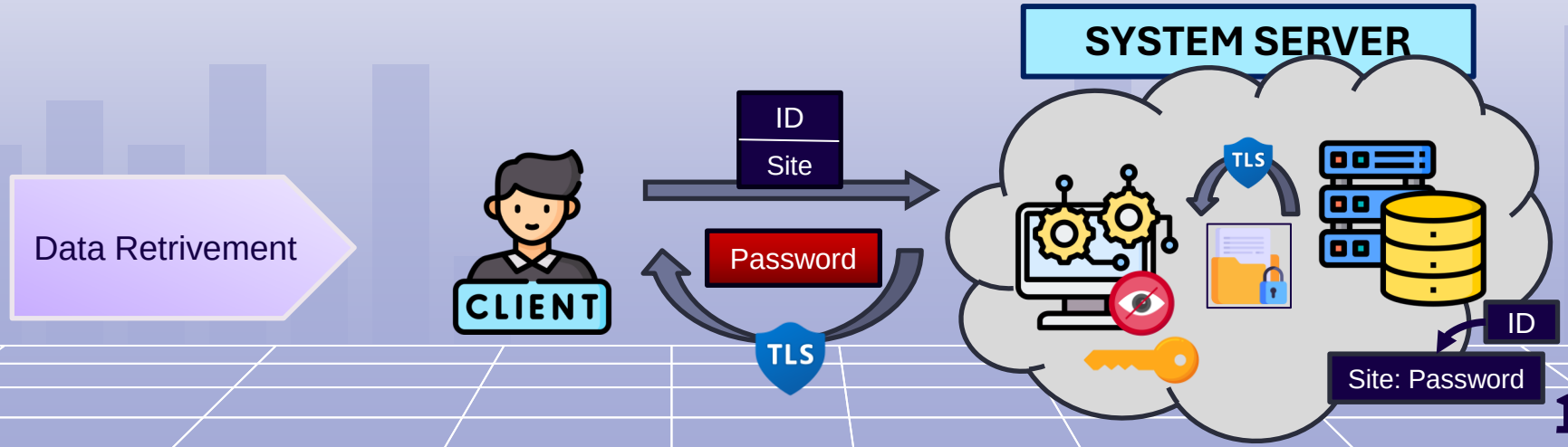
- Acess and Operation Logging

04

# Use Scenario Example

Password Management System


ID
Site
Password
SYSTEM SERVER
CLIENT
TLS
TLS
Data Storage


Data Retrivement
SYSTEM SERVER
ID
Site
Password
CLIENT
TLS
TLS
ID
Site: Password


# Security and Privacy Features and Guarantees

# Users

## Https protocol
Secure navigation + TLS = Data **Integrity**

## 2FA
Password + SMS verification code

## Data Confidenciality and Security
Data Encription + Protection against non authorized access

## Lawfullness
Explicit and Clear User Consent

## Loyalty
Risk awareness

## Transparency
Clear inform before data treatment + the right to access own data

# Developers

## Secure Code

Secure code to avoid vulnerabilities

## Access Control

Roles: to avoid unauthorized access or improper actions

## Security Tests

To identify and correct vulnerabilities

## Security Education

Aprendization and constant atualization of security aspects

# Administrators

## Monitoring and Incident Response

## Atualizations management

Ensure the most recent security features

## Audit and Compliance

Ensure compliance with policies and regulamentations

## Security Education

# Envolved Entities

## Confidenciality Agreements

Protection of confidencial shared informations

## Secure Communications

## Access Control

## Transparency and Responsability

Responsability over data violation or improper use

# Legal Authorities

## Legal Complience

System complient with all the laws and regulamentations os data privacy

## Controlled Access to Data

According to legal mandates

## User Rights Protection

Guarantee of users right for privacy and personal data protection


# Monitoring and Alerting

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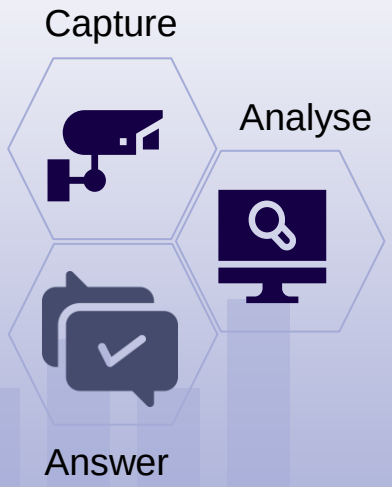
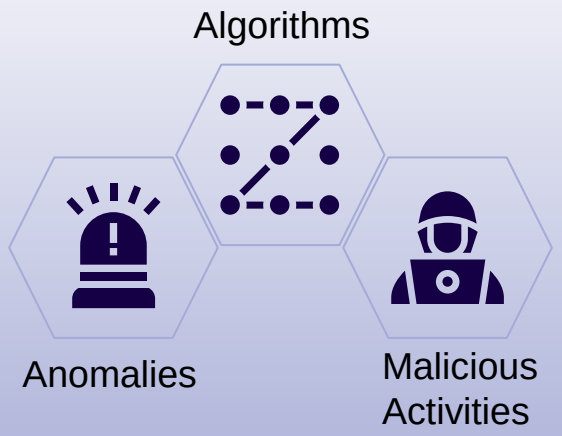
## Continuous Monitoring




## Anomaly and Threat Detection




## Registration and Audit

07

# Backup and Contingency

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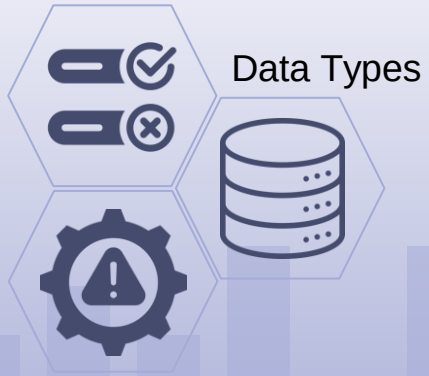
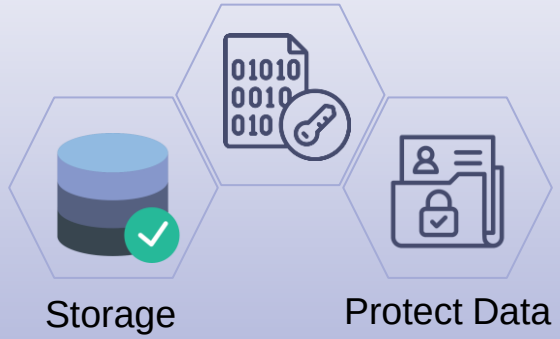
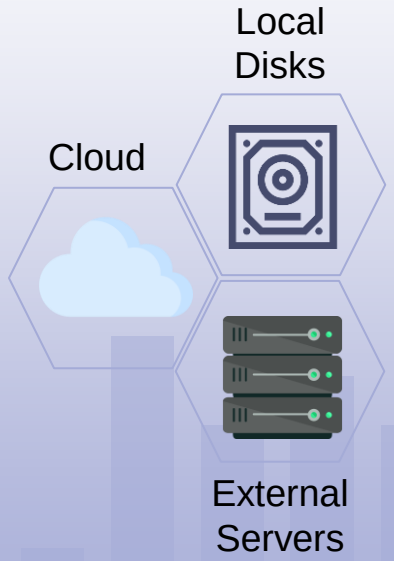
## Backup Policy




## Backup Data Encryption

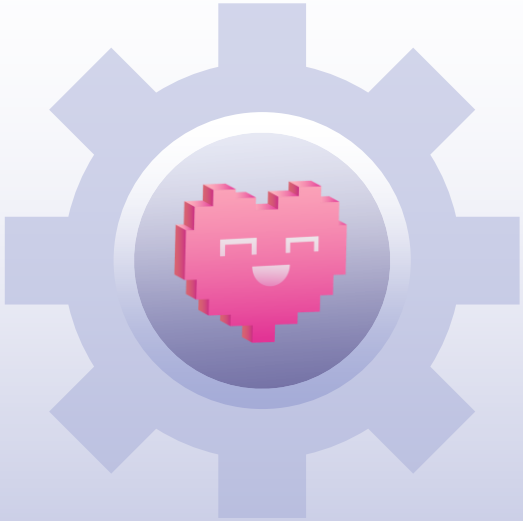



## Redundant and Distributed Storage



# 08

# CONCLUSION



# Thank you!

# QUESTIONS?