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Welcome to this session:
Logging

The session will start shortly...

Questions? Drop them in the chat.
We'll have dedicated moderators
answering questions.

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What is Safeguarding?

Safeguarding refers to actions and measures aimed at protecting the human rights of adults, particularly vulnerable individuals, from abuse, neglect, and harm.

To report a safeguarding concern reach out to us via email:
safeguarding@hyperiondev.com

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Live Lecture Housekeeping:

- The use of disrespectful language is prohibited in the questions, this is a supportive, learning environment for all - please engage accordingly.

- No question is daft or silly - ask them!

- For all non-academic questions, please submit a query: www.hyperiondev.com/support

- To report a safeguarding concern reach out to us via email: safeguarding@hyperiondev.com

- If you are hearing impaired, please kindly use your computer's function through Google chrome to enable captions.

Stay Safe Series:

Mastering Online Safety One Week/step at a Time

While the digital world can be a wonderful place to make education and learning accessible to all, it is unfortunately also a space where harmful threats like online radicalisation, extremist propaganda, phishing scams, online blackmail and hackers can flourish.

As a component of this BootCamp the *Stay Safe Series* will/is designed to guide you through essential measures in order to protect yourself & your community from online dangers, whether they target your privacy, personal information or even attempt to manipulate your beliefs.

Security Tip

Verify Your Browser Extensions

Before installing browser extensions, verify their legitimacy and permissions.

- Why? Some malicious extensions can steal sensitive data or track your activity.
- How? Check reviews, download only from official stores, and ensure the developer is reputable.
- Pro Tip: Regularly audit your extensions and remove those you no longer use.

Stay safe while browsing! 🌐🔒

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Logging

Learning Outcomes

- ❖ Explain the role of logging in software systems

- ❖ Identify different logging strategies

- ❖ Identify logging best practices

- ❖ Discuss security considerations within logging.

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Software Engineering

Have you ever encountered an issue in a program that was difficult to diagnose? How did you approach finding the problem, and could logging have helped?

What is Logging?

- Logging is the process of recording events, messages, and errors in a system.
- Used for debugging, monitoring, performance analysis, and security auditing.

Why is Logging Important?

- Debugging
- Monitoring
- Security
- Compliance

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Types of Logs

- Application logs
- System logs
- Security logs
- Audit logs

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Logging Levels

- **DEBUG** - Detailed information for development
- **INFO** - General system events
- **WARNING** - Something unusual, but not critical
- **ERROR** - A problem affecting functionality
- **CRITICAL** - A serious error causing system failure

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Logging Strategies

- Centralised Logging
- Rotating Logs
- Real-time Monitoring

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Best Practices

- Use structured logging (e.g., JSON format).
- Avoid excessive logging to reduce noise.
- Never log sensitive data (passwords, API keys).
- Rotate logs to manage file size.
- Implement log retention policies.

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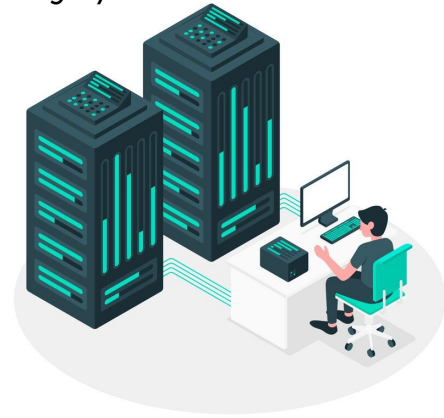
Logging in Large Systems

- Managing log volumes
- Log correlation across microservices
- Real-time processing and anomaly detection

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Security & Compliance in Logging

- Security Risks:
  - Logging sensitive data
  - Log injection attacks
  - Log tampering

- Compliance Requirements:
  - GDPR
  - PCI-DSS
  - HIPAA

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Best Practices for Secure Logging

- Encrypt sensitive logs.
- Implement access controls for logs.
- Store logs in a tamper-proof storage.
- Regularly review logs for anomalies.

Recap

- Logging is essential for debugging, monitoring, security, and compliance.

- Use best practices to ensure logs are useful and secure.

- Understand different logging levels and types.

- Implement centralized logging for large-scale systems.

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Please have a look at the poll notification and select an option.

What is the primary purpose of logging in software development?

A. To store all user activity indefinitely
B. To help developers debug and monitor applications
C. To replace error handling mechanisms
D. To slow down system performance

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Please have a look at the poll notification and select an option.

Which of the following is NOT a recommended logging best practice?

A. Avoid logging sensitive data
B. Use structured logging
C. Log everything, including passwords and API keys
D. Rotate logs to manage file size

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Q & A SECTION

Please use this time to ask any questions relating to the topic, should you have any.

Thank you for attending

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