Automated Testing

What is it

- An automated test is written in code so a computer can execute it. It might test the validity of a single piece of one system, or of several systems working together. Automated tests are written using specialized tools that simulate program or user behaviour.

Key Benefits / Why is this important

- Unlike manual testing, automated tests can be run quickly and frequently, which is crucial for DevOps environments. In a CI/CD pipeline, code changes are automatically tested before they are merged with the main body of work or promoted to a live environment.
- As the codebase evolves, automated tests act as a safety net, allowing developers to verify that new code changes haven't broken existing functionality.
- Tests can be used to ensure consistent behaviour as well as to validate some non-functional requirements. Some testing tools can simulate thousands of users interacting with a system at once, stressing it to prove there is no performance degradation.

Techniques supporting this practice

- Unit Testing
- System Testing
- TDD
- Stress Testing
- Failover Testing
- Chaos Engineering