INTEGRATION TESTING

WHAT TO EXPECT

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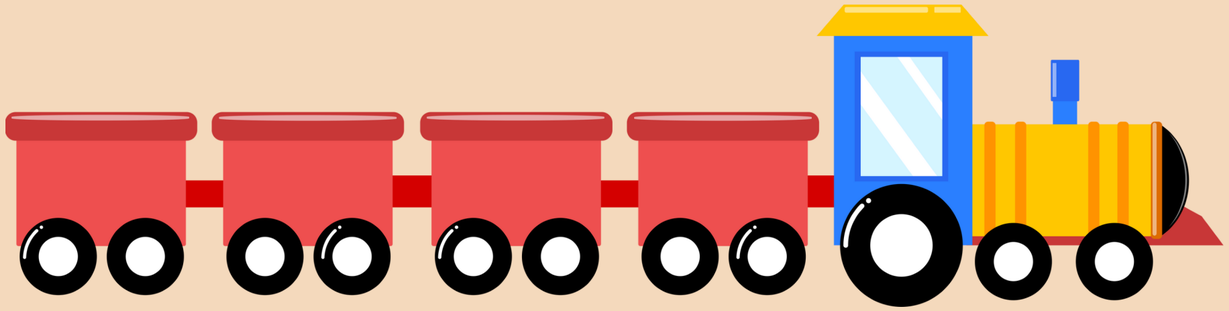
Integration Testing

- Integration testing is a software testing technique that focuses on testing the interaction between different components or modules of an application.

- It ensures that the integrated components work together as expected and fulfill the system requirements.



Why Integration Testing?

- Identify and catch defects early in the development process.
- Validate the communication and data flow between components.
- Verify the behavior of the application as a whole.
- Ensure compatibility and proper integration of different modules.
- Provide confidence in the stability and reliability of the system.

Integration Testing Approaches

- **Big Bang**: All the components are integrated at once, and the entire system is tested as a whole.
- **Top-Down**: Testing starts from the top-level components, simulating the behavior of lower-level components using stubs or mocks.
- **Bottom-Up**: Testing starts from the lower-level components, simulating the behavior of higher-level components using drivers.
- **Sandwich/Hybrid**: Combination of top-down and bottom-up approaches, testing both high-level and low-level components together.
- **Incremental**: Integration is done incrementally, with new components being added and tested in iterations.

Integration Testing Best Practices

- Identify the critical paths and high-risk areas for integration testing.
- Prioritize testing based on the impact and frequency of component interactions.
- Use stubs or mocks to simulate the behavior of dependent components.
- Develop clear and comprehensive test cases that cover various integration scenarios.
- Ensure test environment consistency and repeatability.
- Conduct regular regression testing to catch issues introduced during integration.

Integration Testing Tools 

- **JUnit**: A popular testing framework for Java applications, including support for integration testing.
- **Postman**: A versatile API testing tool that enables integration testing of RESTful APIs.
- **Selenium**: An automation tool commonly used for web application testing, including integration testing of UI components.
- **SoapUI**: Specifically designed for testing SOAP and REST APIs, providing features for integration testing and service simulation.
- **Cucumber**: A behavior-driven development (BDD) tool that supports integration testing through its feature files and step definitions.

See you in Next Video