DEAKIN UNIVERSITY

APPLIED SOFTWARE ENGINEERING

ONTRACK SUBMISSION

Test your code

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Outcome	Weight
ULO1	♦♦♦♦♦
ULO2	♦♦♦♦♦
ULO3	♦♦♦♦♦
ULO4	♦♦♦♦♦

Testing is mandatory after development.

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SIT725 – Applied Software Engineering

Task 5.1P – Testing

Web application quality and reliability depends on effective testing methods. Unit testing serves as the base which tests individual components such as functions and classes in isolation to confirm their correct operation. Testing automation is possible through Jest, Mocha and Jasmine tools which enable assertions and mocks for this purpose.

The examination of component interactions during integration testing verifies how modules and APIs and services function together. The level detects problems which unit tests fail to detect when separate pieces are merged. The testing process becomes more efficient using Supertest for API testing and database integration libraries.

End-to-end testing validates the complete user journey through your application, simulating real user behavior from start to finish. The application's complete functionality gets tested through automated browser interactions which are possible with Cypress, Selenium and Playwright frameworks.

A complete testing approach requires the testing pyramid to contain numerous unit tests followed by fewer integration tests and the smallest number of end-to-end tests. The method provides both extensive coverage and operational effectiveness.

The testing process should operate automatically through continuous integration platforms such as GitHub Actions or Jenkins, which execute tests after each code modification to detect potential issues before deployment.

References

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