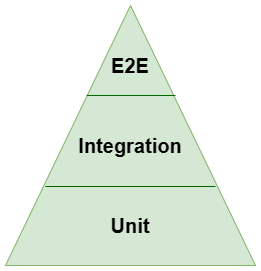
Week 5 – In The “Node”

1. A callback function is a function passed to another function as an argument, (GeeksforGeeks, 2022). An error-first callback in Node.js is a callback function that accepts either an error object or data object from a successful operation. The function accepts an error as its first argument and data as its second argument. A coded example can be found in examples.js.
2. Promises are objects that notify when an asynchronous action either successfully completes or fails, (MDN, 2023). Chaining can be done to control the flow of callback executions using .then syntax off promises, as well as .catch to catch and handle errors. This helps solve the problem of having many nested callback functions. A coded example can be found in examples.js.
3. A test pyramid is a model that breaks types of code testing apart into categories, (Leung, 2019). Generally, the top of the pyramid represents the smallest number of tests, as well as the slowest tests. The bottom represents the largest number of, and fastest, tests. Ideally, a test pyramid represents a comprehensive suite of code testing. The testing pyramid below has end-to-end tests at the top, then integration tests, and finally unit tests at the bottom.



1. For 2021, The OWASP Foundation recognized injection as having the third position in their list of the top ten web application security risks, (OWASP, 2021). Injection refers to a user entering code, such as SQL to retrieve unauthorized data, via an unsecure application. An application built with node.js and express.js, or any technology, could be at risk for injection if the application does not validate or sanitize data entered by a user.
2. In terms of cybersecurity, the National Institute of Standards and Technology, or NIST, plays a notable role, (NIST, 2023). The NIST develops industry cybersecurity standards and guidelines, including the “Framework for Improving Critical Infrastructure Cybersecurity”. This framework can be downloaded from the NIST website.

References

GeeksforGeeks. (2022, February 16). *Error-First Callback in Node.js*. GeeksforGeeks. https://www.geeksforgeeks.org/error-first-callback-in-node-js/

MDN. (2023). *Promise - JavaScript*. MDN. https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global\_Objects/Promise

Leung, J. (2019, May 21). *The Test Pyramid*. Medium. https://betterprogramming.pub/the-test-pyramid-80d77535573

OWASP. (2021). *Injection*. OWASP. https://owasp.org/Top10/A03\_2021-Injection/

NIST. (2023). *Cybersecurity*. NIST. https://www.nist.gov/cybersecurity