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CS 405 Module Four

Unit Testing

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To complete this unit testing assignment, I used Visual Studio to build and run a Google Test project for a std::vector<int> collection. I began by replacing the default test.cpp file with one provided by the assignment, which included multiple TODO test prompts and instructions to create additional tests.

I wrote unit tests to confirm that the vector behaves correctly in a variety of cases, such as adding values, resizing, clearing, and accessing values. I used ASSERT\_ macros for critical failures and EXPECT\_ macros for validation that should not terminate the test. I also created two original tests: one positive to check if all random values were in range (0–99), and one negative to confirm that out-of-bounds access throws an exception.

After writing the tests, I compiled and ran them using the Test Explorer. The only failed test was AlwaysFail, which is expected. All other tests passed, verifying correct functionality. This process reinforced my understanding of unit testing, exception handling, and the importance of validating edge cases.

Below is the output for before and after tests were added:

A screenshot of a computer program

AI-generated content may be incorrect.A screenshot of a computer program

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