Introduction to Testing

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Key Concepts

- Testing
- Test Case
- Test Driver

Testing Defined Formally

- The definition of testing according to the standard is that testing is the process of analyzing a software item to detect the differences between existing and required conditions (that is defects/errors/bugs) and to evaluate the features of the software item (ANSI/IEEE STD 1059) courtesy https://sites.google.com/site/swtestingconcepts/home/what-is-software-testing
- The process of operating a system or component under specified conditions, observing or recording the results, and making an evaluation of some aspect of the system or component (IEEE/ANSI STD 610.12-1990)
- The process of analyzing a software item to detect the difference between existing and required conditions (that is, BUGS) and to evaluate the features of the software items (IEEE/ANSI STD 829-1983)
- Testing can only detect the presence of defects it cannot prove that an application is free of defects

What is a Test Case?

- A test case specifies the state and environment, test inputs and conditions, and expected result for the unit/function/system under test
- The goal of the test case is to determine if the unit/function/system satisfies requirements or works as intended

What is a Test Driver?

- A test driver is a function or utility program that applies test cases to the unit/function/system under test

References

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- J.R. Hanly & E.B. Koffman, *Problem Solving and Program Design in C (7th Ed.)*, Addison-Wesley, 2013
- Roger Pressman, *Software Engineering: A Practitioner's Approach* (fifth edition), McGraw-Hill, 2001

Collaborators

- Jack Hagemeister