Introduction to Testing

Instructor - Andrew S. O'Fallon

CptS 122

Washington State University

Key Concepts

- Testing
- Test Case
- Test Driver

A. O'Fallon, J. Hagemeister

Testing Defined Formally

- 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**

A. O'Fallon, J. Hagemeister

References

- P.J. Deitel & H.M. Deitel, *C++: How to Program* (9th ed.), Prentice Hall, 2014

- 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

A. O'Fallon, J. Hagemeister

Collaborators

- Jack Hagemeister

A. O'Fallon, J. Hagemeister