

int team = 4;

11/07/2013

INTRODUCTION

1 TESTING PROCESS

Phase I - Analyze source code to determine which methods to test

Phase II - Begin constructing test cases for methods by creating applicable oracles

Phase III - Build and design automated testing framework

Phase IV - Test by injecting faults into source code

Phase V - Document results through visual presentation

2 REQUIREMENTS

R1 Returns the correct value based on the calculations

R2 Does not compile if the correct number of parameters are not passed in

R3 Each function returns a value only when required

3 TESTED ITEMS

int CalcPct(uint64_t cnt, uint64_t total);

//add all tested items and what each method does

4 REQUIREMENTS TRACEABILITY

Test	R1	R2	R3
<i>int CalcPct</i>	X	X	X

//add all methods here

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5 TESTING SCHEDULE

Time Period	Objective
10/01 - 10/08	<ul style="list-style-type: none">• Write Test Plan• Write up test cases (5)• Define requirements
10/08 - 10/15	<ul style="list-style-type: none">• Begin to design testing framework• Decide what will be tested• Begin presentation design
10/15 - 10/22	<ul style="list-style-type: none">• Write up test cases (20)• Begin writing scripts for testing automation
10/22 - 10/29	<ul style="list-style-type: none">• Complete creating testing framework• Create architectural description• Create 'How To'
10/29 - 11/05	<ul style="list-style-type: none">• Begin designing poster• Begin to create presentation
11/05 - 11/12	<ul style="list-style-type: none">• Use framework to automatically run tests with test cases (25)• Create faults in code and test• Final formatting of presentation• Final details of poster
11/12 - 11/19	All phases complete Present to class

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6 TESTING RECORDING PROCEDURES

The results of each test will be recorded in a document for that specific test case.

7 HARDWARE AND SOFTWARE REQUIREMENTS

- Virtual Machine
- Ubuntu 12.04/ Mint 15
- GCC and G++ versions included in the distos
- Python 2.7

8 CONSTRAINTS

- New users to GNU/Linux
- Entire team not familiar with C
- Working around different work and school schedules

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9 TEST CASES

double CalcPct(uint64_t cnt, uint64_t total);

Inputs	Expected Outcome
0, 0	0.0
1, 0	0.0
0, 1	0.0
1, 1	100.0
2, 1	200.0
1, 0xFFFFFFFFFFFFFFFF(in decimal)	0.0
A, 0	DNC
0, A	DNC
A, A	DNC
,	DNC
, 1	DNC
1,	DNC
-1, -1	1.0 w/ compiler warning

*DNC = does not compile