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Session 2

Evaluation and Testing

By the end of this session participants will have:

- Examined the importance of testing in the software development cycle.
- Experienced real-life testing scenarios.
- Developed test plans and test cases for a variety of situations.
- Investigated and experienced test-driven development.

LCCS Learning Outcomes

Evaluation and Testing:
L.O.s 2.19, 2.20, 2.21, 2.22.

But also
Design and Developing
L.O. 1.19

Computational Thinking
L.O.s 1.1 - 1.19

Computers and Society
L.O.s 1.11

Computer Science in Practice
L.O.s 3.2 – 3.14

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Talking about Testing

Software Testing ?

In groups of three, discuss the importance of software testing?

Each group to come up with three to five points, which are collated and saved.

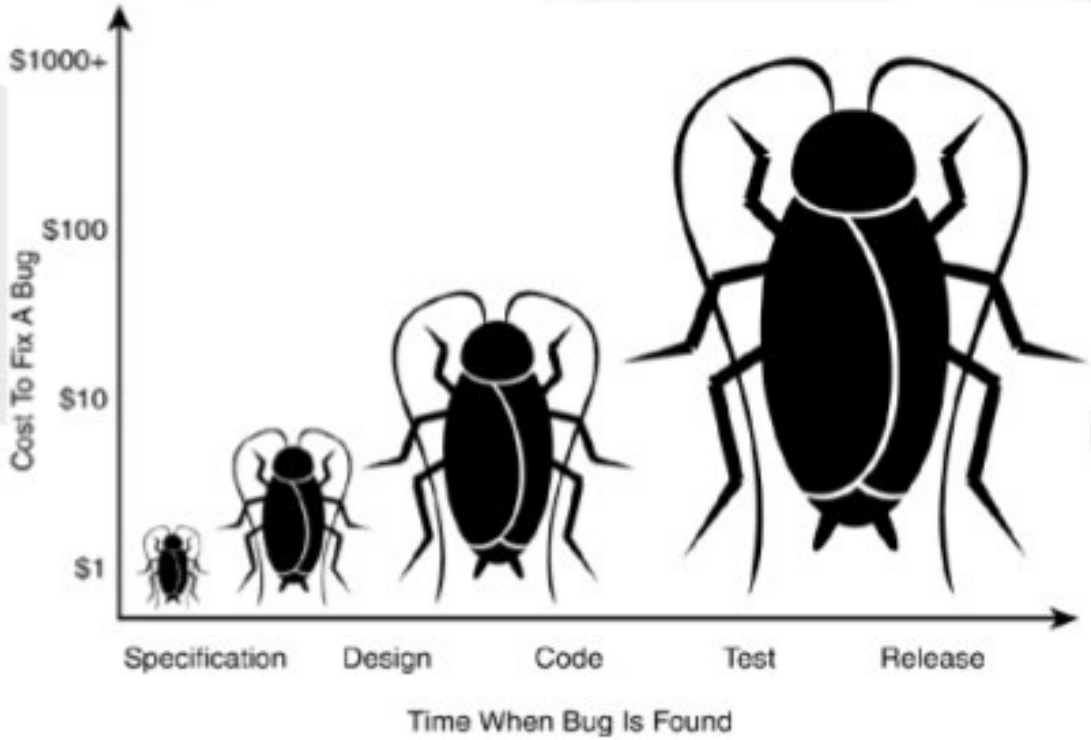
Debrief From Each Group

Software testing: What were your thoughts

Some interesting scenarios

- Windows XP – how many bugs?
- MS Word 97 – French version – what happened?
- Boeing
- Costs
- Norman Whiteside

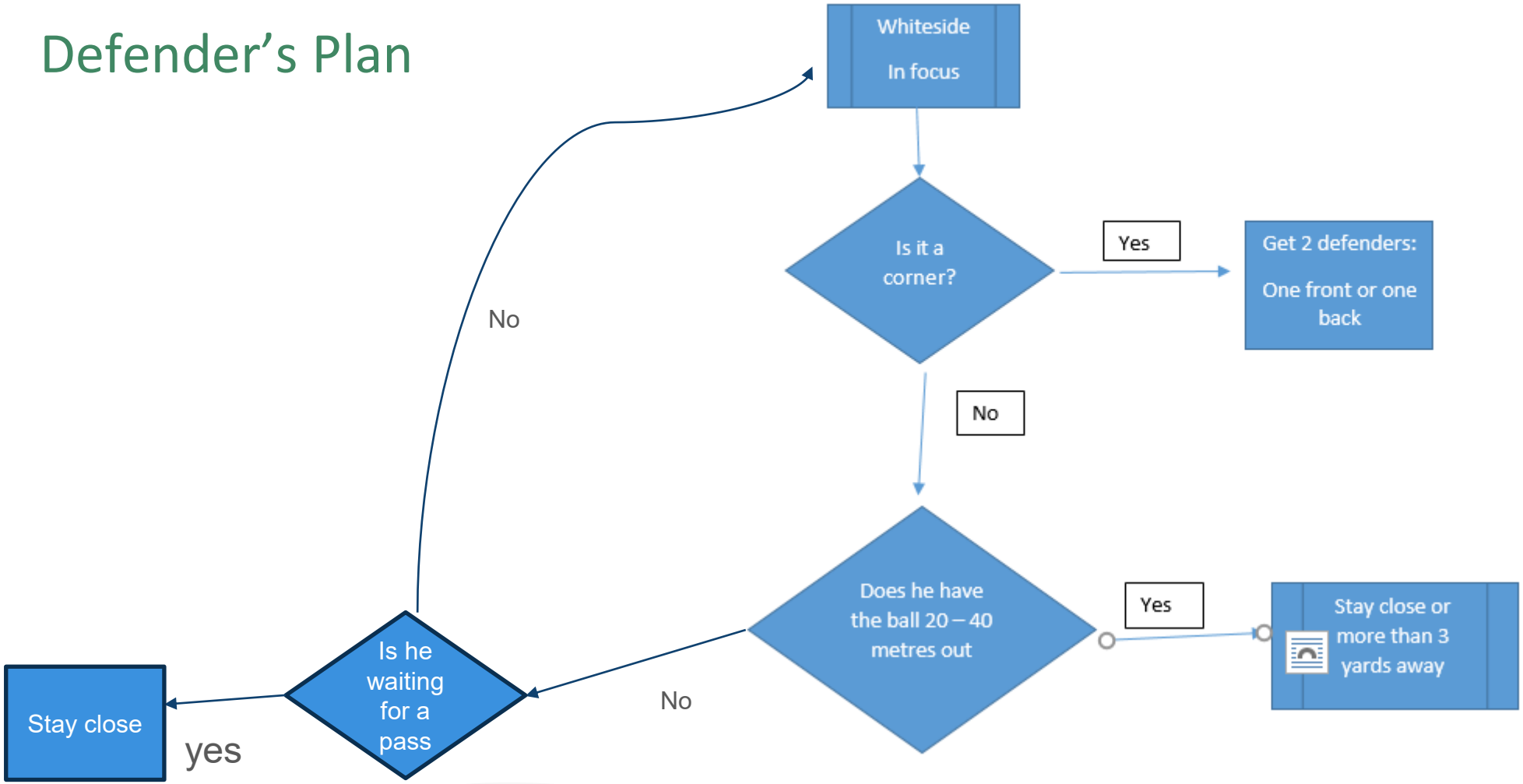
Bug fixing cost



(www.systemsemantics.com)


FA Cup Final 1985 Amazing Goal by Norn
Pause
00:00:00
Select Area
Audio
Record Pointer
Play (k)
0:00 / 1:45
Scroll for details

Defender's Plan



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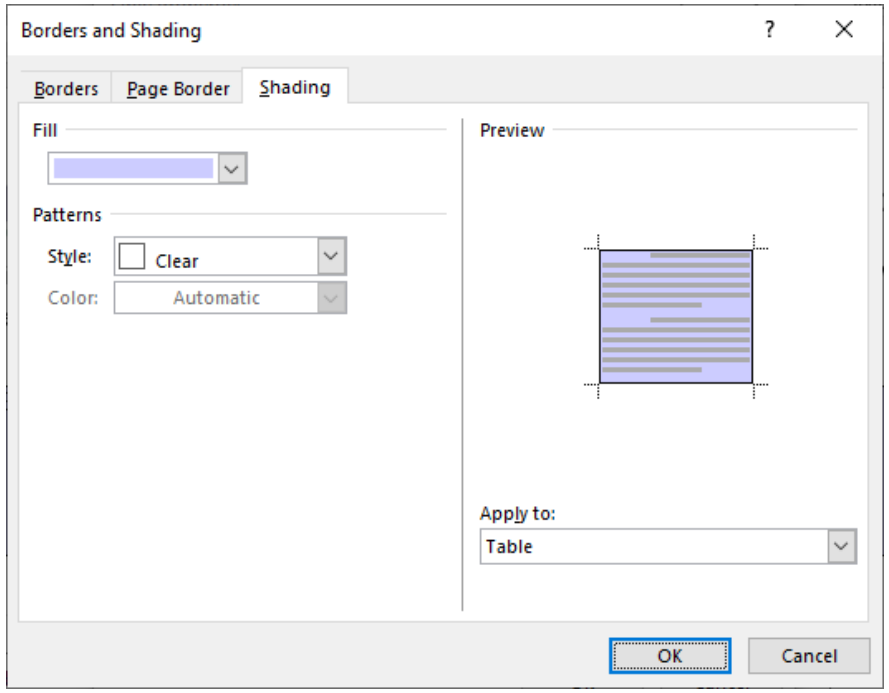
Let’s test 1

Let’s Test

Plan and implement a test plan for a real-life test scenario:



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Types of Testing / Writing test cases

Teachers research and report:

1. Functional v non-functional testing
2. Unit vs Integration (System Testing)
3. White v black box testing.
4. Designing a test plan.
5. Writing test cases.
6. Test-driven development
7. Testing in Waterfall / Agile / V-shaped modeldevelopment

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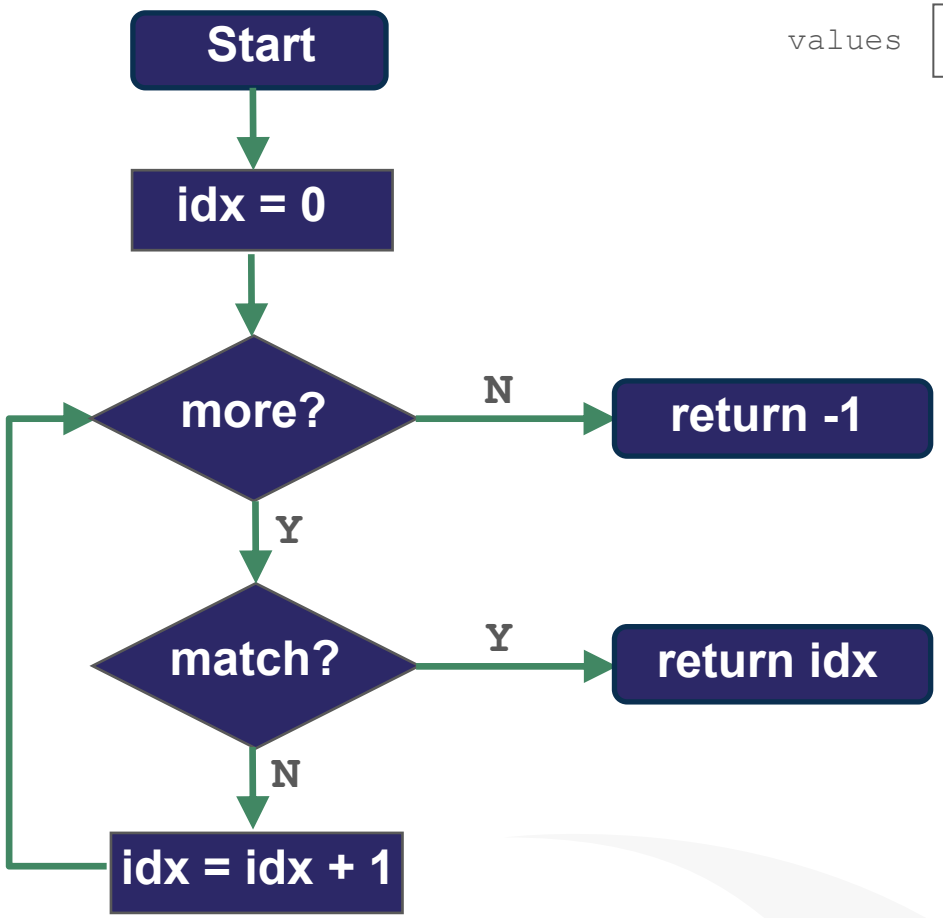
Let’s test 2

Linear Search



idx	0	1	2	3	4	5	6
values	21	17	-1	26	22	-5	24

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Testing Cycle

Testing Cycle:

- Requirements Analysis
- Test
  - Planning
  - Development
  - Execution
  - Reporting

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Test-driven development

Test-driven development:

1. Run a test
2. Run all tests and see if new test fails
3. Write the code
4. Run tests
5. Refractor code
6. Repeat

KISS: Keep it simple stupid.

YAGNI: You aren’t gonna need it.

“Fake it till you make it” (Kent Blake): Write only code needed to pass tests.

TDD / Agile / Waterfall / V-model Development:

Does TDD fit in the Agile framework?

Is TDD the same as Agile development?

Is Waterfall development relevant?

What is the V-model in testing?

How does the role of testing change, according to these methodologies?

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Let’s test 3

Develop Test cases and Implement:

www.cupannua.com