



COM 3529

SOFTWARE TESTING & ANALYSIS

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1.2 A Bug's Life

From Faults to Failures

1. The program location containing the **fault** is **reached** during execution
2. The **fault** **infects** the state of the program
3. The **infection** **propagates** to the output, causing a **failure**



1. The program location containing the fault is **reached** during execution

2. The fault **infects** the state of the program

3. The infection **propagates** to the output, causing a failure

Reachability

Infection

Propagation

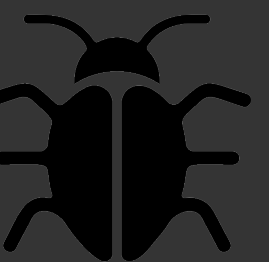




Reachability

Infection

Propagation



1. The program location containing the **fault** is reached during execution



Fault

2. The fault **infects** the state of the program



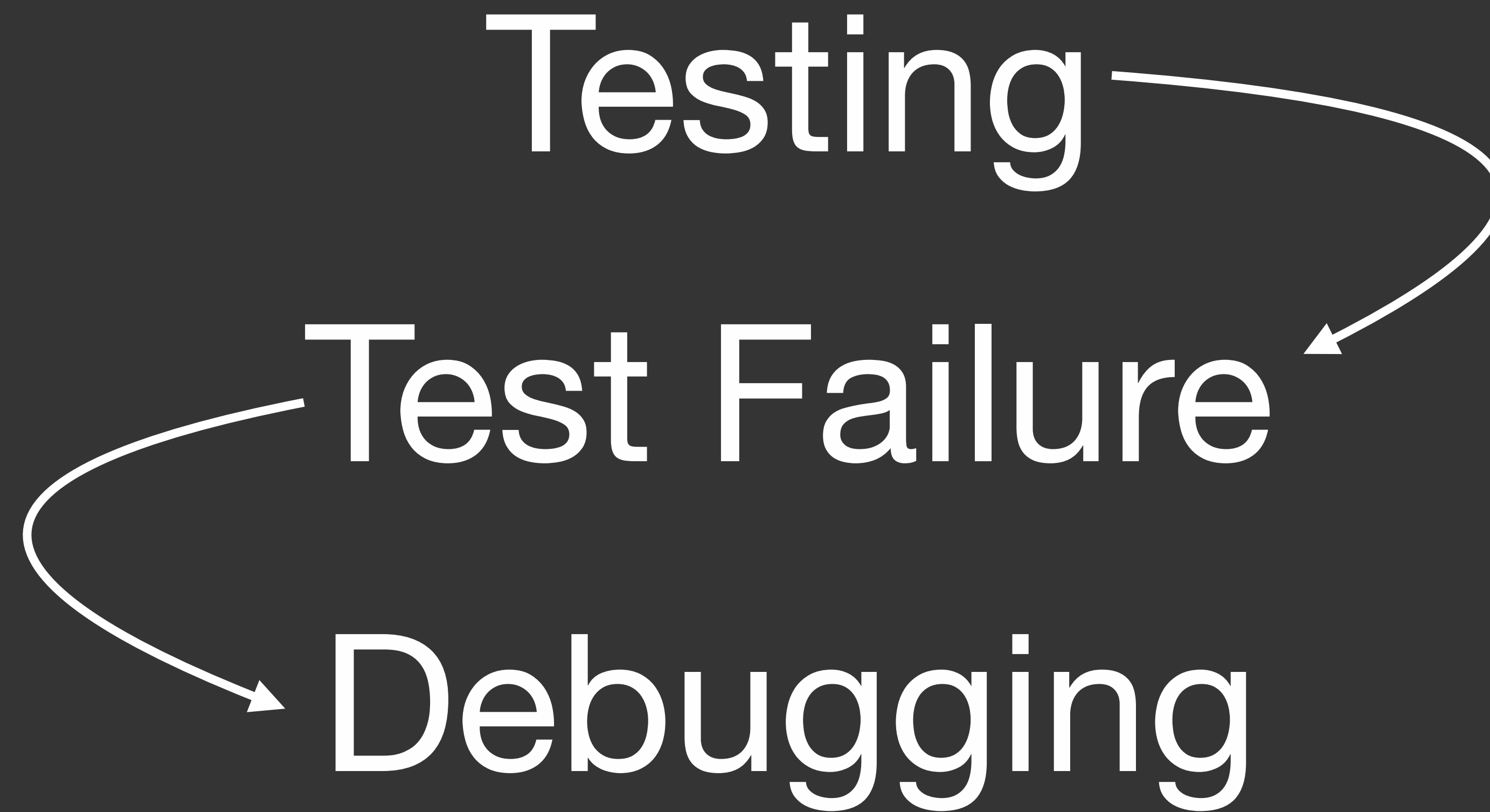
Infection

3. The infection propagates to the output, causing a **failure**



Failure





Reachability

Infection

Propagation

Revealability



Reachability

Infection

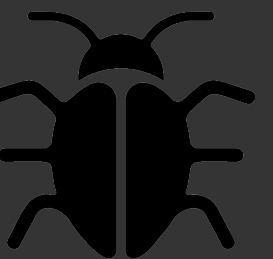
Propagation

Revealability



Ingredients of a Test Case

1. The inputs necessary to put the software into the appropriate state for testing
2. The actual test case values
3. The expected results of the test
4. Reset of the system state



Test Suite

Test Case

Test Case

Test Case

Test Case

Test Case

Test Case

Test Case

Test Case

Test Case

