

Introduction to Software Testing

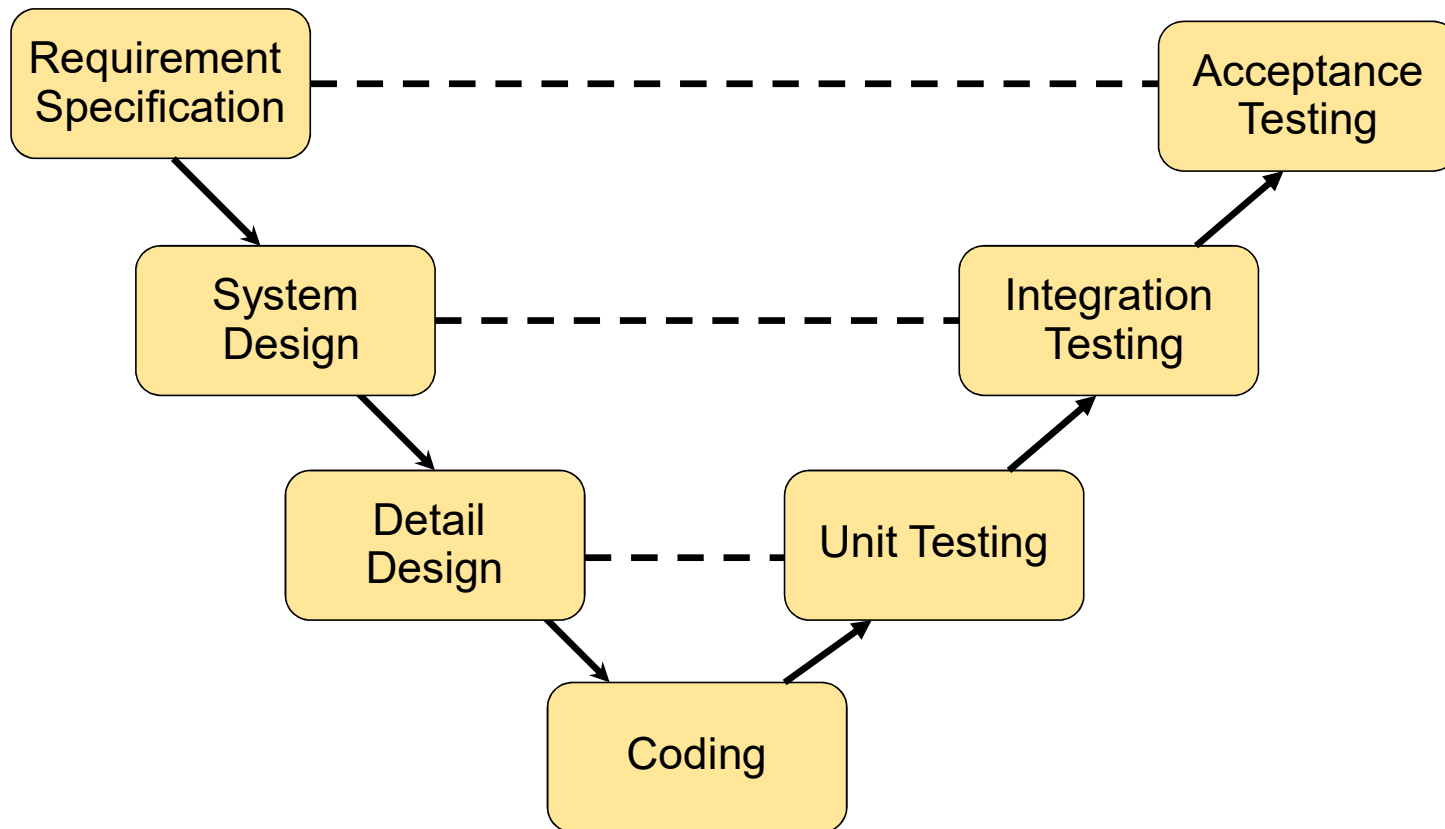
SE323 Software Construction Testing and Maintenance

Try testing the application

- <http://bit.ly/323CE1>

What is important for testing?

V - Model



V Model

- Show the relationship among different artifacts
- Express how the importance among them

What is Software Testing?

- Process of demonstrating that errors are not present
- To show that a program is performed its intended functions correctly
- Process of establishing confidence that a program does what it supposes to do
- Testing is the process of executing a program with the intent of finding error

Software Testing:

Consist of

- *Dynamic* verification of the behavior of a program on a “*finite*” set of test cases, suitably *selected* from the usually infinite executions domain, against the *expected* behavior.
- Dynamic
 - Def for testing : Testing always executes program input
- Finite
 - Limited resource and schedules
 - But the Unlimited test requirement

Software Testing:

Consist of

- *Dynamic* verification of the behavior of a program on a *finite* set of test cases, suitably selected from the usually infinite executions domain, against the expected behavior.
- Selected
 - Test techniques
 - Test cases
- Expected
 - Out come
 - Behavior

Software Testing Consist of:

- *Dynamic* verification of the behavior of a program on a *finite* set of test cases, suitably *selected* from the usually infinite executions domain, against the *expected* behavior.

Dynamic Def for testing : Testing always executes program input	Selected Test techniques Test cases
Finite Limited resource and schedules Unlimited test requirement	Expected Out come Behavior

Software Testing: Identify

- Correctness
- Completeness
- Security
- Quality

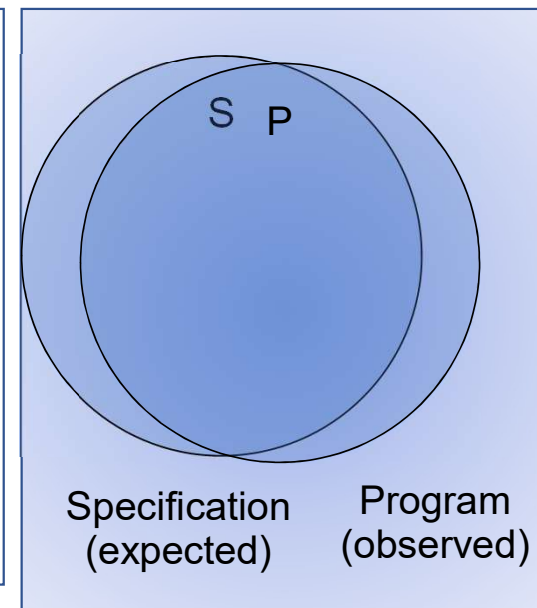
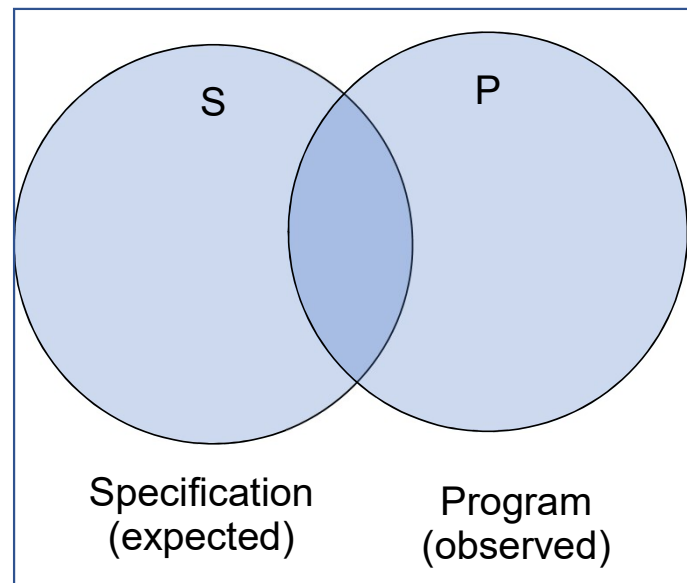
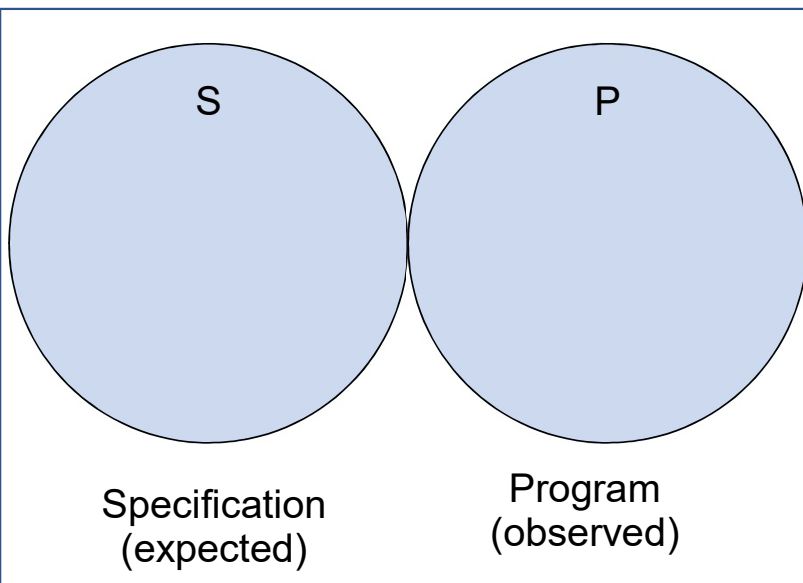
Software Testing: Terminology

- Error
 - Mistake
 - People make mistakes while coding
 - AKA. bugs
- Fault
 - Result of an error
 - AKA. defects

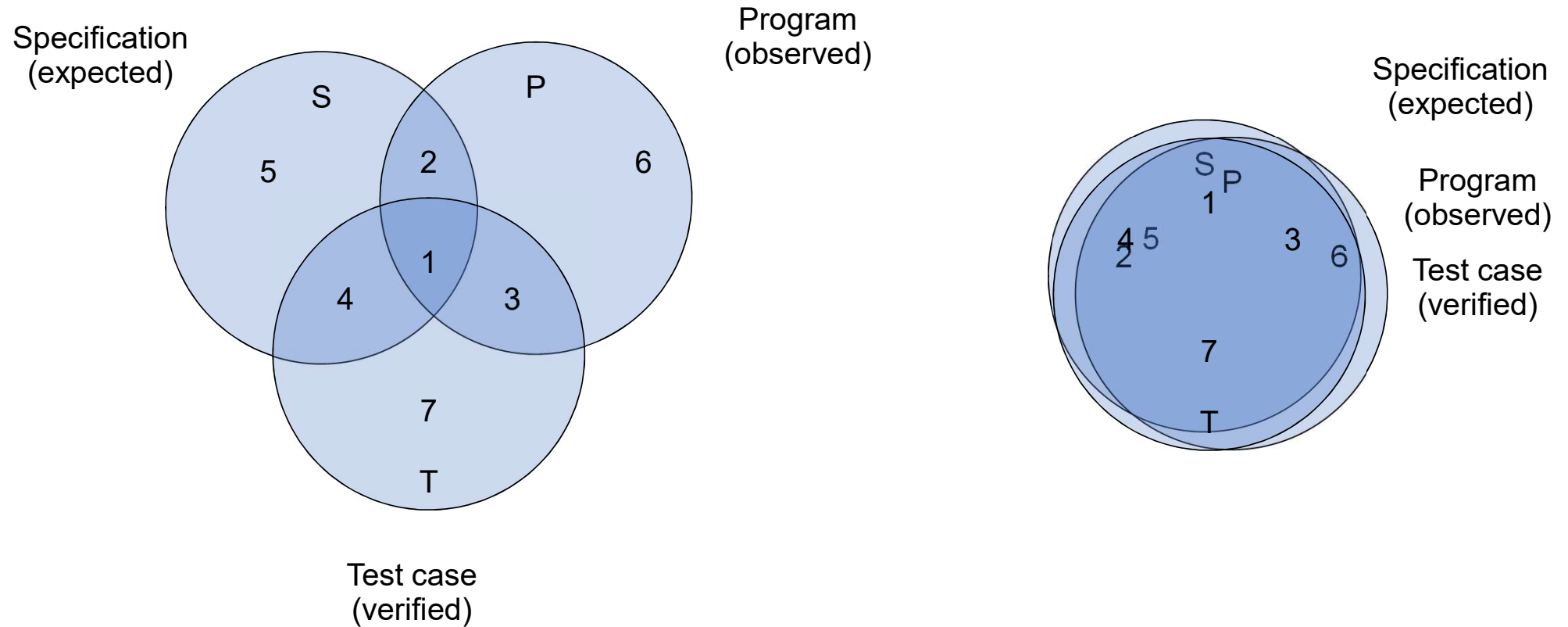
Software Testing: Terminology

- Failure
 - Occur when a fault execute
- Incident
 - When a failure occurs
- Test
 - To find failures
 - Demonstrate correct execution
- Test cases
 - Identity of test set

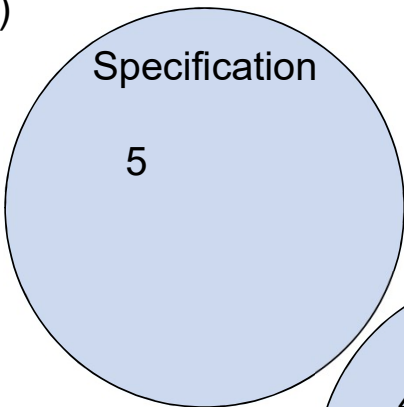
Software Testing: Program Behavior



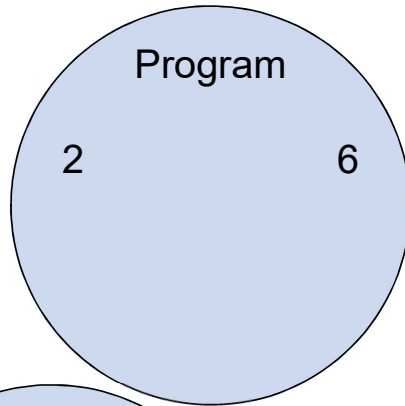
Software Testing: Program & Test Behavior



Specification
(expected)



Program
(observed)



Test case
(verified)

