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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Software Testing (course)Course
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- ☐ Lecture 15 -
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- ☐ Lecture 16 -
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Week 4 : Assignment 4

The due date for submitting this assignment has passed.

Due on 2024-08-21, 23:59 IST.

Assignment submitted on 2024-08-19, 10:59 IST

1) If a particular method *A* in a class sends a message using an exclusive buffer to a method *B* in another class, which type of interface does this constitute? **1 point**

- ☐ Class interface.
- ☐ Buffer interface.
- ☒ Message passing interface.
- ☐ Shared interface.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Message passing interface.

2) In a call graph that represents all the function or method calls, what does edge coverage achieve? **1 point**

- ☒ Edge coverage tests for executing every call at least once.
- ☐ Edge coverage tests for executing all the paths that contain calls at least once.
- ☐ Edge coverage tests for sending data on call interfaces.
- ☐ Edge coverage tests for calling every function or method in any order.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Edge coverage tests for executing every call at least once.

3) Which of the following best defines a coupling du-path? **1 point**

Design and Integration Testing (unit? unit=38&lesson=40)

☐ Lecture 17 - Design Integration Testing and Graph Coverage (unit? unit=38&lesson=41)

☐ Lecture 18 - Specification Testing and Graph Coverage (unit? unit=38&lesson=42)

☐ Lecture 19 - Graph Coverage and Finite state Machines (unit? unit=38&lesson=43)

☐ Practice: Week 4: Assignment 4 (Non graded) (assessment? name=203)

☒ **Quiz: Week 4 : Assignment 4 (assessment? name=216)**

☐ Week 4 Feedback Form: Software Testing (IIITB) (unit? unit=38&lesson=174)

Week 5 ()

- ☐ A coupling du-path is from a coupled definition of a variable to the corresponding use.
- ☐ A coupling du-path is from the last definition of a variable to the first use of the same variable.
- ☐ A coupling du-path is from a definition of a variable to its use such that there is no definition in between.
- ☒ A coupling du-path is from a last definition of a variable to any use across a call interface.

No, the answer is incorrect.

Score: 0

Accepted Answers:

A coupling du-path is from the last definition of a variable to the first use of the same variable.

4) State true or false: While testing for data flow in call interfaces, we need not consider only the last definition and the first use of a particular variable. **1 point**

- ☒ True.
- ☐ False.

No, the answer is incorrect.

Score: 0

Accepted Answers:

False.

5) While testing for sequencing constraints on specifications using graphs, what kind of test paths are typically used? **1 point**

- ☒ Test paths are defined to satisfy the sequencing constraints.
- ☐ Test paths are defined to violate the sequencing constraints.
- ☐ Test paths are dependent on the kind of sequencing constraints, might satisfy them or violate them.
- ☐ Test paths are the sequencing constraints themselves.

No, the answer is incorrect.

Score: 0

Accepted Answers:

Test paths are defined to violate the sequencing constraints.

6) Consider a finite state machine that models the behaviour of a bounded queue data structure that is used in a piece of code. What do the states of the machine represent? **1 point**

- ☐ The states of the finite state machine represent the operations supported by the queue data structure.
- ☐ The states of the finite state machine represent the contents of the queue, one state for every cell in the queue.
- ☐ It is not possible to represent a bounded queue data structure using a finite state machine.
- ☒ The states of the finite state machine represent the contents of the queue, one state when the queue is empty, one state when the queue has only one element, and so on, one state when the queue is full.

Yes, the answer is correct.

Week 6 ()**Week 7 ()****Week 8 ()****Week 9 ()****Week 10 ()****Week 11 ()****Week 12 ()****DOWNLOAD
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()****Live
sessions ()****Books ()**

Score: 1

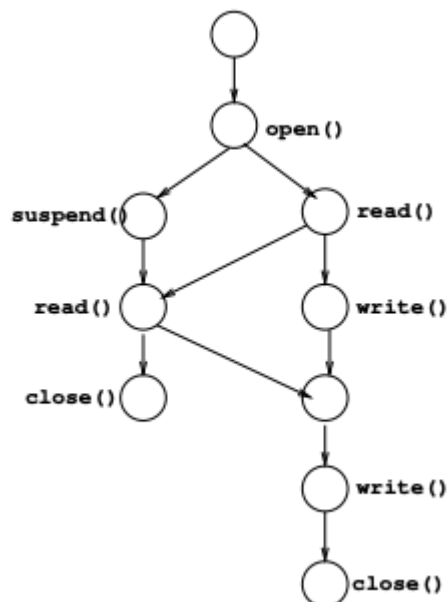
Accepted Answers:

The states of the finite state machine represent the contents of the queue, one state when the queue is empty, one state when the queue has only one element, and so on, one state when the queue is full.

For the next four questions, consider the methods `open()`, `close()`, `read()`, `write()`, and `suspend()` which execute the operations of opening and closing a file, reading from a particular file, writing some data to a particular file and suspending an on-going operation, respectively. The sequencing constraints for the use of these methods are listed below.

- An `open()` method should always be eventually be followed by an invocation of the `close()` method unless there is an invocation of `suspend()` in between.
- `read()` or `write()` methods cannot be invoked without opening a file, i.e., invoking an `open()` method.
- Every `open()` should have at least one `read()` or `write()` following its invocation, before closing the file.

The following graph captures the sequence of method calls regarding the usage of the above methods for a particular piece of code. The nodes that do not have labels represent some part of the code that does not invoke the above methods.



Answer the following questions with reference to a set of test paths that might be written regarding the sequencing constraints for the considered piece of code.

7) State yes or no: Does the sequence of two consecutive invocations of the `write()` **1 point** method violate any of the above sequencing constraints?

- ☐ Yes.
☒ No.

Yes, the answer is correct.

Score: 1

Accepted Answers:

No.

8) State yes or no: Does the path that has two consecutive invocations of the `read()` **1 point** method violate any of the above sequencing constraints?

☐ Yes.

☒ No.

Yes, the answer is correct.

Score: 1

Accepted Answers:

No.

9) Identify a path that violates one of the above sequencing constraints from the paths **1 point** given below.

☐ Path: `open()`, `read()`, `write()`, `write()`, `close()`.

☒ Path: `open()`, `suspend()`, `read()`, `close()`.

☐ Path: `open()`, `read()`, `read()`, `close()`.

☐ Path: `open()`, `read()`, `read()`, `write()`, `close()`.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Path: `open()`, `suspend()`, `read()`, `close()`.

10) Does the edge from `open()` to `suspend()`, representing the suspension of an open operation violate any of the sequencing constraints given above? **1 point**

☐ Yes.

☒ No.

Yes, the answer is correct.

Score: 1

Accepted Answers:

No.