Quiz03: Architecture, Version Control, Quality Assurance, Code Analysis, Project Management

Due No due date	Points 100	Questions 20	Time Limit None	
Allowed Attempts U	nlimited			

Instructions

Instructions:

In this quiz, we will review a few important concepts we learned after Midterm. The quiz can be taken for multiple times. The highest score will be kept. There is no time limit.

A recommended process:

- 1. Take the quiz for the first time, without using any reference materials. See how much you have learned, and what your muddy points are (if any).
- 2. Read the reference materials, including slides, book chapters, library e-books, etc.
- 3. Take the quiz for another time.

Notes:

• The quizzes are designed to help you review the materials we have covered so far. Please try to get most out of these quizzes/assignments by thinking through the questions.

Take the Quiz Again

Attempt History

	Attempt	Time	Score
KEPT	Attempt 3	28 minutes	83 out of 100 *
LATEST	Attempt 3	28 minutes	83 out of 100 *
	Attempt 2	less than 1 minute	2 out of 100 *
	Attempt 1	27 minutes	43 out of 100 *

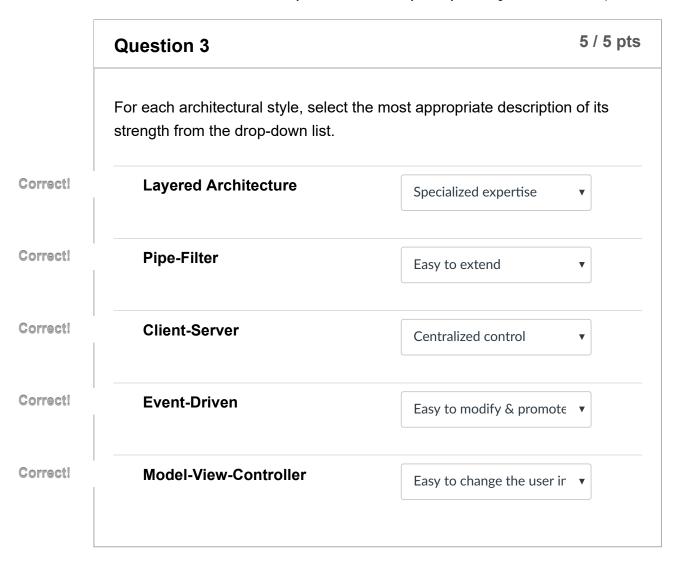
^{*} Some questions not yet graded

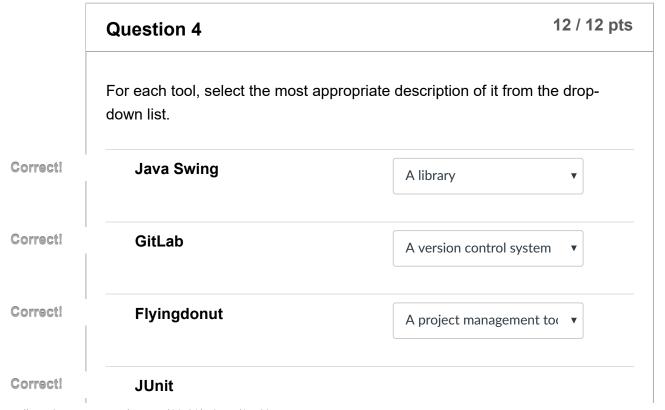
Score for this attempt: **83** out of 100 * Submitted May 9 at 3:47am

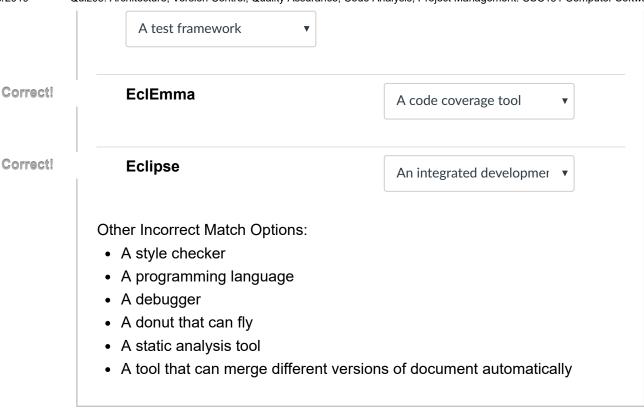
This attempt took 28 minutes.

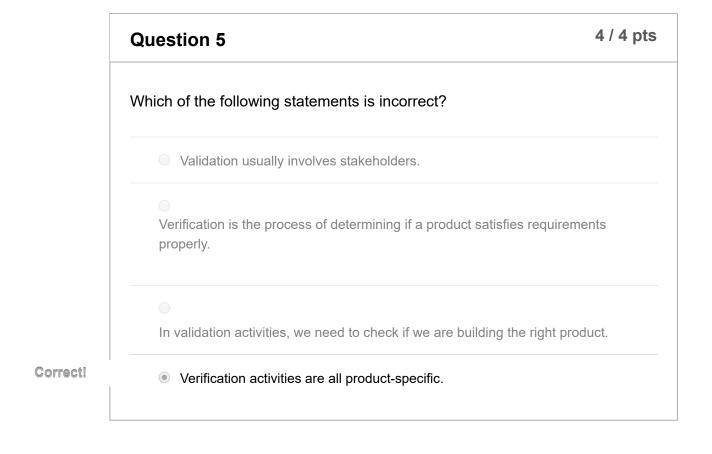
	Question 1	l / 4 pts
	In a Client-Server architecture, how to differentiate the server from all client(s)? (Multiple Answers)	
Correct!	✓ Client(s) initiate requests	
Correct!	Server responds to requests	
	All external devices are clients	
	Just guess	

	Question 2	5 / 5 pts
	For each architectural style, select the weakness from the drop-down list.	ne most appropriate description of its
Correct!	Layered Architecture	Inefficient communication ▼
Correct!	Pipe-Filter	Forces lowest-common-d∈ ▼
Correct!	Client-Server	"Single" point of failure ▼
Correct!	Event-Driven	Difficult to synchronize ▼
Correct!	Model-View-Controller	Frequent updates may de{ ▼









Question 6

4 / 4 pts

Please read the following sub program:

```
1 // This method should return the number of
 2 // occurrences of 0 in arr
 3 *public static int numZero(int[] arr) {
       int count = 0;
                                                   // S1
 5
       int i = 0;
                                                   // S2
 6
 7
       if (arr.length != 0 && arr != null)
                                                   // S3
 8
 9
            while (i < arr.length)</pre>
                                                   // S4
10
                if (arr[i] == 0)
                                                   // S5
11
12
                                                   // S6
                     count++;
13
                                                   // S7
                i++;
14
15
            return count;
                                                   // S8
16
        } else
17
            System.out.println("Invalid Input");// S9
18
       return count;
                                                   // S10
19 }
```

What is the Cyclomatic Complexity of this program?

3				

5				

2			

Correct!

• 4

6

Question 7 4 / 4 pts

Given an input {0, 1, 2} to *numZero* method in Question 6, how much statement coverage can be achieved?

5/9/2019	Quiz03: Architecture, Version Control, Quality Assurance, Coo	de Analysis, Project Management: CSC131 Computer Software Engr - SECT
	70%	
	90%	
Correct!	80%	
	100%	
	Question 8	4 / 4 pts
	Given an input { } (an empty array) to number much branch coverage can be achieve	
	O 5/6	
	O 4/6	
Correct!	1/6	
	O 2/6	
	O 3/6	
	O 6/6	
	Question 9	4 / 4 pts
	Here is the same subprogram again:	

```
1 // This method should return the number of
 2 // occurrences of 0 in arr
 3 *public static int numZero(int[] arr) {
       int count = 0;
                                                   // S1
       int i = 0;
 5
                                                   // S2
 6
 7
       if (arr.length != 0 && arr != null)
                                                   // S3
 8
 9
                                                   // S4
            while (i < arr.length)</pre>
10
11
                if (arr[i] == 0)
                                                   // S5
12
                                                   // S6
                    count++;
13
                                                   // S7
                i++;
14
15
                                                   // S8
            return count;
16
       } else
17
            System.out.println("Invalid Input");// S9
18
                                                   // S10
       return count;
19 }
```

There is a fault embedded in the program. Which of the following inputs can reveal the fault?

Correct!

Null

{}

(0, 0)

(0)

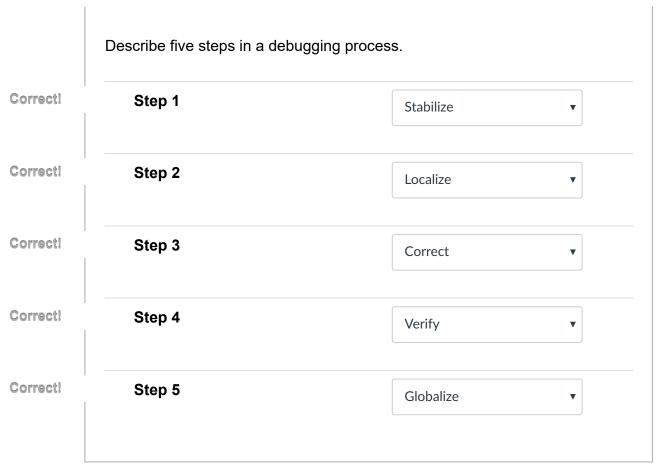
Question 10 What is the actual fault in the above program? null pointer exception It does not check if input is null before making reference call to the input It does not check if input is null

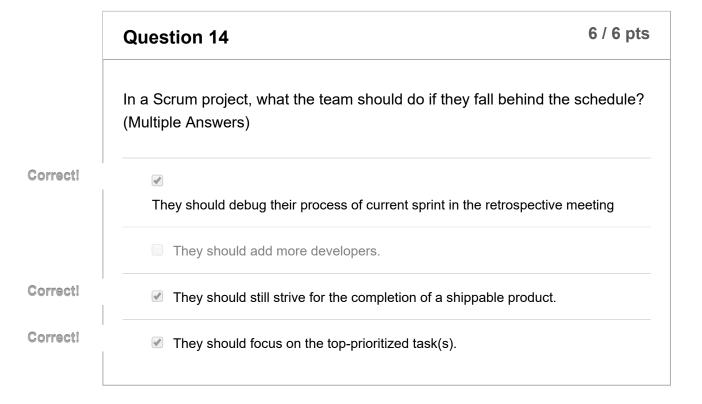
Input is null

	Question 11	4 / 4 pts
	Suppose we don't know the source code of method <i>numZero</i> , but w would like to test the program as a blackbox. What input would you (Multiple Answers)	
Correct!		
Correct!	✓ A very big integer array	
Correct!	An array with one integer only	
Correct!		

	Question 12	4 / 4 pts
	Which of the following statements is incorrect?	
	 System testing may involve real users. 	
	 Unit & Integration testing are usually performed by programmers 	
	 Regression testing is a process re-running all existing tests. 	
Correct!	Unit & Integration testing are validation activities.	

Question 13	5 / 5 pts





Question 15 10 / 10 pts

Why do we need to specify acceptance criteria for each task/card on Flyingdonut?

Your Answer:

Because as a team, all the members need to be on the same page, which means having the same understanding for the project requirement. By specifying acceptance criteria, each member can read, review, and decide on how to complete the project by dividing and assigning different tasks. Creating tasks/cards and providing comments also helps members in the team to ask questions on the parts that are not clear.

Question 18

Not yet graded / 3 pts

Why do we need to do regression testing, after the code has already passed all unit testing?

Your Answer:

It is suggested that programmers should thoroughly test a fix to ensure that it really does correct the defect they intend to correct. Furthermore, because of the likelihood of introducing a new fault, programmers should rerun all tests to try to detect this occurrence. Therefore, doing regression testing is important. Also, nowadays, there are many unit testing and integration testing tools available and can automate regression testing, so there is no reason for programmers not to do frequent regression testing.

Question 19

Not yet graded / 8 pts

In your project, what software engineering knowledge have you used? You may elaborate through the following aspects:

Process:

Architectural styles:

Design Patterns:

Tools:

Your Answer:

Process: Prototyping

Architectural styles: Model-View-Controller, Layered

Design Patterns: Composite, Observer, Strategy

Tools: JavaSwing, GitLab, FlyingDonut, Eclipse, Discord, JUnit Testing

Question 20

Not yet graded / 1 pts

As we are approaching the end of the semester, do you have any memorable moment you had with this class? If yes, please share one.

Your Answer:

I really enjoy the class. I learned a lot about product planning and development. The Pirex project is fun and challenging.

Quiz Score: 83 out of 100