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Need help?

English (en)

Started on	Monday, 22 March 2021, 19:14
State	Finished
Completed on	Monday, 22 March 2021, 19:41
Time taken	27 mins
Grade	**90.00** out of 130.00 (**69**%)

Question 1

Correct

Mark 10.00 out of 10.00

Somebody wrote a **bad** code that ***does not fail fast*** (from the Lecture 3):

```java
public static int dayOfYear(int month, int dayOfMonth, int year) {
    if (month == 2) {
        dayOfMonth += 31;
    } else if (month == 3) {
        dayOfMonth += 59;
    } else if (month == 4) {
        dayOfMonth += 90;
    } else if (month == 5) {
        dayOfMonth += 31 + 28 + 31 + 30;
    } else if (month == 6) {
        dayOfMonth += 31 + 28 + 31 + 30 + 31;
    } else if (month == 7) {
        dayOfMonth += 31 + 28 + 31 + 30 + 31 + 30;
    } else if (month == 8) {
        dayOfMonth += 31 + 28 + 31 + 30 + 31 + 30 + 31;
    } else if (month == 9) {
        dayOfMonth += 31 + 28 + 31 + 30 + 31 + 30 + 31 + 31;
    } else if (month == 10) {
        dayOfMonth += 31 + 28 + 31 + 30 + 31 + 30 + 31 + 31 + 30;
    } else if (month == 11) {
        dayOfMonth += 31 + 28 + 31 + 30 + 31 + 30 + 31 + 31 + 30 + 31;
    } else if (month == 12) {
        dayOfMonth += 31 + 28 + 31 + 30 + 31 + 30 + 31 + 31 + 30 + 31 + 31;
    }
    return dayOfMonth;
}
```

Assume today is **January 3, 2019**;
which means that the correct *dayOfYear* for this date is 3,
since it's the third day of the year.

Now **another programmer** calls that method with arguments as follows:

```java
dayOfYear(1, 3, 2019)
```

Choose the **correct** statement:

Select one:

● a. The programmer did not make a mistake.
The method gave the right answer.

○ b. The programmer made a mistake.
The method gave the right answer, luckily.

○ c. The programmer made a mistake.
The method gave the wrong answer, quietly.

d. The programmer made a mistake.

○ The method detected a static error.

○ e. The programmer made a mistake.
The method detected a dynamic error.

Your answer is correct.

The correct answer is: The programmer did not make a mistake.
The method gave the right answer.

Question 2

Incorrect

Mark 0.00 out of 10.00

Now **another programmer** calls that method with arguments as follows:

```
dayOfYear(0, 3, 2019)
```

Choose the **correct** statement:

Select one:

○ a. The programmer did not make a mistake.
The method gave the right answer.

○ b. The programmer made a mistake.
The method gave the right answer, luckily.

○ c. The programmer made a mistake.
The method gave the wrong answer, quietly.

○ d. The programmer made a mistake.
The method detected a static error.

● e. The programmer made a mistake.
The method detected a dynamic error.

Your answer is incorrect.

The correct answer is: The programmer made a mistake.
The method gave the right answer, luckily.

Question 3

Incorrect

Mark 0.00 out of 10.00

Now **another programmer** calls that method with arguments as follows:

```
dayOfYear(3, 1, 2019)
```

Choose the **correct** statement:

Select one:

● a. The programmer did not make a mistake.
The method gave the right answer.

○ b. The programmer made a mistake.
The method gave the right answer, luckily.

○ c. The programmer made a mistake.
The method gave the wrong answer, quietly.

○ d. The programmer made a mistake.
The method detected a static error.

e. The programmer made a mistake.

○ e. The programmer made a mistake.
The method detected a dynamic error.

Your answer is incorrect.

The correct answer is: The programmer made a mistake.
The method gave the wrong answer, quietly.

Question 4

Correct

Mark 10.00 out of 10.00

Now **another programmer** calls that method with arguments as follows:

```
dayOfYear("January", 3, 2019)
```

Choose the **correct** statement:

Select one:

○ a. The programmer did not make a mistake.
The method gave the right answer.

○ b. The programmer made a mistake.
The method gave the right answer, luckily.

○ c. The programmer made a mistake.
The method gave the wrong answer, quietly.

● d. The programmer made a mistake.
The method detected a static error.

○ e. The programmer made a mistake.
The method detected a dynamic error.

Your answer is correct.

The correct answer is: The programmer made a mistake.
The method detected a static error.

Question 5

Correct

Mark 10.00 out of 10.00

Now **another programmer** calls that method with arguments as follows:

```
dayOfYear(2019, 1, 3)
```

Choose the **correct** statement:

Select one:

○ a. The programmer did not make a mistake.
The method gave the right answer.

○ b. The programmer made a mistake.
The method gave the right answer, luckily.

● c. The programmer made a mistake.
The method gave the wrong answer, quietly.

○ d. The programmer made a mistake.
The method detected a static error.

○ e. The programmer made a mistake.
The method detected a dynamic error.

Your answer is correct.

The correct answer is: The programmer made a mistake.
The method gave the wrong answer, quietly.

Question 6

Incorrect Mark 0.00 out of 10.00

We should not use global variables.

Making a variable into a constant can eliminate the risk of global variables.

What keyword should be added to such global variables to make them constants ?

Answer: local ✗

The correct answer is: final

Question 7

Incorrect Mark 0.00 out of 10.00

In the 1990s, the Ariane 5 launch vehicle, designed and built for the European Space Agency, self-destructed 37 seconds after its first launch.

The reason was a control software bug that went undetected. The Ariane 5's guidance software was reused from the Ariane 4, which was a slo rocket. When the velocity calculation converted from a 64-bit floating point number (a double in Java terminology, though this software wasn't written in Java) to a 16-bit signed integer (a short), it overflowed the small integer and caused an exception to be thrown.

The exception handler had been disabled for efficiency reasons, so the guidance software crashed. Without guidance, the rocket crashed too. cost of the failure was $1 billion.

What ideas does this story demonstrate?
Choose the **correct** option.

Select one:

- ○ a. High-quality safety-critical software cannot have residual bugs.
- ● b. Testing all possible inputs is the best solution to this problem.
- ○ c. Static checking could have detected this bug.
- ○ d. Software exhibits discontinuous behavior, unlike many physically-engineered systems.

Your answer is incorrect.

The correct answer is: Software exhibits discontinuous behavior, unlike many physically-engineered systems.

Question 8

Correct Mark 10.00 out of 10.00

Consider the following specification:

```
/**
```

```
 * Reverses the end of a string.
 *
 *                          012345                     012345
 * For example: reverseEnd("Hello, world", 5) returns "Hellodlrow ,"
 *                               <----->                    <----->
 *
 * With start == 0, reverses the entire text.
 * With start == text.length(), reverses nothing.
 *
 * @param text    non-null String that will have its end reversed
 * @param start   the index at which the remainder of the input is reversed,
 *                requires 0 <= start <= text.length()
 * @return input text with the substring from start to the end of the string reversed
 */
public static String reverseEnd(String text, int start)
```

Which of the following is the **best partitions** for the **start** parameter?

Select one:

- ● a. start = 0, 0 < start < text.length(), start = text.length()
- ○ b. start = 0, start = 5, start = 100
- ○ c. start < 0, start = 0, start > 0
- ○ d. start < text.length(), start = text.length(), start > text.length()

Your answer is correct.

The correct answer is: start = 0, 0 < start < text.length(), start = text.length()

Question 9

Correct

Mark 10.00 out of 10.00

Consider the following specification:

```
/**
 * Reverses the end of a string.
 *
 *                          012345                     012345
 * For example: reverseEnd("Hello, world", 5) returns "Hellodlrow ,"
 *                               <----->                    <----->
 *
 * With start == 0, reverses the entire text.
 * With start == text.length(), reverses nothing.
 *
 * @param text    non-null String that will have its end reversed
 * @param start   the index at which the remainder of the input is reversed,
 *                requires 0 <= start <= text.length()
 * @return input text with the substring from start to the end of the string reversed
 */
public static String reverseEnd(String text, int start)
```

Which of the following is the **best partitions** for the **text** parameter?

Select one:

- ● a. text.length() = 0; text.length()-start is odd; text.length()-start is even
- ○ b. text contains some letters; text contains no letters, but some numbers; text contains neither letters nor numbers
- ○ c. text.length() < 0; text.length() = 0; text.length() > 0
- ○ d. text is every possible string from length 0 to 100

Your answer is correct.

The correct answer is: text.length() = 0; text.length()-start is odd; text.length()-start is even

Question 10

Correct

Mark 10.00 out of 10.00

Select the **incorrect** statement about Covering the Partitions:

Select one:

● a. For the BigInteger `multiply` example, using cover each part approach, we can choose 5 test cases.

○ b. The full cartesian approach may not be the best because it could produce too many and redundant test cases.

○ c. The cover each part approach may not be the best because the function may behave differently for a certain combination of inputs.

○ d. For the `max` example, using full Cartesian approach, we can choose less than 75 test cases because not all combinations are possible.

Your answer is correct.

The correct answer is: For the BigInteger `multiply` example, using cover each part approach, we can choose 5 test cases.

Question 11

Correct

Mark 10.00 out of 10.00

In designing the test suite for the Recursive Reverse String problem,
we include the empty string as a test case.

Which testing principle do we use?

Select one:

● a. Choose the boundaries in the partition.

○ b. Divide the input space into subdomains.

○ c. Choose one test case from each subdomain.

○ d. Choose one test case from every legal combination of the partition.

Your answer is correct.

The correct answer is: Choose the boundaries in the partition.

Question 12

Correct

Mark 10.00 out of 10.00

When you write the recursive step of your recursive method,
which part of your code that must be reached by it ?

Answer: base case ✓

The correct answer is: the base case

Question 13

Correct

Mark 10.00 out of 10.00

In solving a problem recursively, you can define a/an helper method ✓ that uses an arbitrary number of parameters.

Finish review

◂ Lab 3 Recording

Jump to...

Lab Exercise 3.1 Check Substri