
Describe, in as much detail as possible, one course policy that you have not seen in a previous course. If you did not see anything unique, describe the attendance policies for both lecture and lab in as much detail as possible.

Your grade will be based on the clarity and completeness of your answer.

(a) (2 points) Write code that initializes the variable `number` as an `int` with the value 13.

(b) (2 points) What will be stored in the variable `x`:

```
double x = 3/6;
```

(c) (2 points) Explain why the following code produces a compiler error:

```
int i = 3.14;
```

(d) (2 points) Define a **character literal** and provide an example of one.

(e) (2 points) Rewrite the following code replacing the integer literal with a named constant. (You only need to rewrite the lines that change.)

```
System.out.print("Enter the number of hours until you plan to eat next: ");
Scanner in = new Scanner(System.in);
int hours = in.nextInt();
int minutes = hours * 60;
System.out.println("You plan to eat in approximately " + minutes + " minutes");
```

Rewrite the following switch statement using if and/or if/else statements.

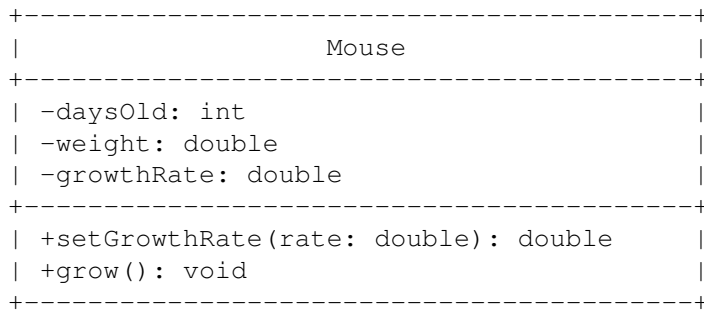
```
int i = 0;
double x = 3.0;
boolean b = true;
int number = in.nextInt();
switch number {
    case 3:
        i += 3;
    case 5:
        x -= 13.2;
        break;
    case 7:
    case 1:
        b = false;
        break;
    default:
        x = i;
}
```

1. (3 points) Explain what is meant by a **fully qualified name**. Give an example.

2. (7 points) Write a program that asks the user to enter a phrase and then displays the number of letters (upper- or lower-case) entered.

```
public class Quiz4 {  
    public static void main(String[] ignored) {
```

Implement the `Mouse` class described in the following UML diagram:



- `setGrowthRate()` – should assign the new growth rate and return the previously stored growth rate.
- `grow()` – should increase the age of the mouse by one day and cause the mouse to increase/decrease in weight in keeping with the growth rate. For example, if the growth rate is set to 2.0, then the mouse's weight should double. If the growth rate is set to 0.5, then the mouse's weight should be half as big.

True/false

- _____ The top-down design methodology is good because it keeps everyone focused on a common goal.
- _____ The top-down design methodology is good because it avoids “reinventing the wheel.”
- _____ The top-down design methodology is good because it keeps management informed.
- _____ The top-down design methodology is good because it minimizes the chances of solving the wrong problem.

In a top-down design process, which do you decide on first — the classes or the `public` methods?

When should you use bottom-up design?

Write a class method called `sum3` that accepts an array of `ints` of length 3 and returns the sum of all the elements.

Given an array of `ints`, return a new array with double the length where its last element is the same as the original array and all other elements are 0. The original array will have a length greater than zero.

For example: `[4, 5, 6] → [0, 0, 0, 0, 6]` and `[3] → [0, 3]`.

Given an array of positive `ints`, return a new array of length `count` containing the first even numbers from the original array. The original array will contain at least `count` even numbers.

```
public int[] copyEvens(int[] nums, int count) {
```

Perform long form tracing on the following program.

```
public static void main(String[] args) {  
    int[] data = new int[4];  
    int number = 3;  
    for(int i=0; i<data.length; ++i) {  
        data[i] = 8 - i;  
        if(i>2) {  
            number += i;  
        }  
    }  
}
```