Round 1

JMU CS Presents...

Prompt

Write a method called countJMU that accepts an array of Strings as input and returns the number of times the string “JMU” appears in the array.

Sample input

countJMU([“JMU”, “dukes”]) → 1
countJMU([“JMU”, “JMU”]) → 2
countJMU([“CS”, “ISAT”]) → 0

Hints for the Judge

-They should use the .equals( ) method from the String class.
-They should use a for loop that iterates over the entire array.
-The method should accept an array of Strings and return an int.

Round 2

JMU CS Presents...

Prompt

List all of the different primitive and reference types in Java that you can think of.
What is the difference between these two?
How do comparisons of the two differ?

Bonus 1: Declare and instantiate a variable of each type.
Bonus 2: Draw a memory diagram with both variables.

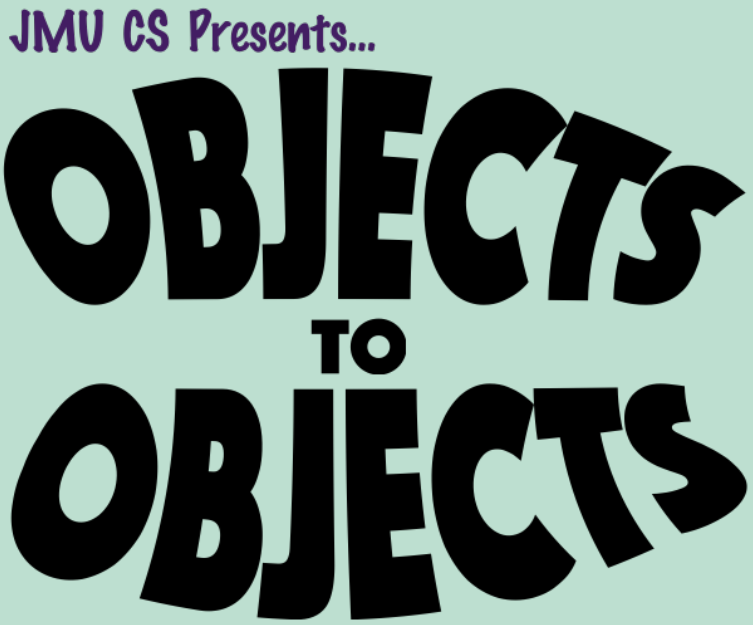
Hints for the Judge

-Examples of primitive types include ints and booleans.
-Examples of reference types include objects and arrays.
-Reference variables store an address, not a value.

Round 3

Prompt

Write a method called fizzBuzz that prints every number from 1 to 100 on a new line. If the number is a multiple of 3, it will print “Fizz” instead of the number. If the number is a multiple of 5, it will print “Buzz” instead of the number. If the number is a multiple of 3 and a multiple of 5, it will print “FizzBuzz” instead of the number.



Hints for the Judge

-They should use a for loop that starts at 1 and goes to 100.
-They should use the modulus operator to check for multiples of 3 and 5.
-They should check to see if a number is a multiple of both 3 and 5 FIRST.

Round 4

Prompt

Write a method called copyArray that accepts an array of ints and returns an entirely new array that is an exact copy of the first array.

Sample input

copyArray([2, 3, 2]) → [2, 3, 2]
copyArray([1000]) → [1000]
copyArray([ ]) → [ ]

Hints for the Judge

-They should create a new int array that is the same length as the given int array.
-They should individually copy over every element from the given array in to the new array.

Round 5

Prompt

Define a class called Car that contains attributes for the make, model, and year of a Car. There should be two ways to instantiate a Car: using a make and model, or using a make, model, and year. If a year is not given, the default year of 2020 should be used. Include getter and setter methods for all three attributes.

Bonus 1: Include a toString method.
Bonus 2: Include an equals method.

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Hints for the Judge

-Attributes should be declared at the top of the class and instantiated in the constructors.
-Both constructors should be named Car.
-One constructor should have two parameters; the other should have three.
-Getters and setters are also known as accessors and mutators.