

CIS 368 (Object-oriented Programming), Spring 2022

Cleveland State University

Computer and Information Science

Homework Assignment 3: Object-Oriented Programming Basics (25 points)

Due: Monday, March 7th, 2022 by 11:59 PM.

Q1: Description:

Write a Java application that will execute the following main method and display a date in the format "*month/day/year*" syntax followed by your name. (3 points)

```
public static void main (String [] args) {  
  
    // instantiate object  
    MyDateClass obj = new MyDateClass();  
  
    //set date values  
    obj.setDate(5,25,00);  
  
    // display date  
    System.out.println(obj.getDate());  
  
    // display name  
    System.out.println("your name");  
  
} // end main
```

Q2: What are the Wrapper classes? Explain Boxing, Unboxing, AutoBoxing, and AutoUnboxing? Explain each with one/two lines of code. (4 points)

Q3: What are the **three** differences between StringBuilder and StringBuffer? When we use them? What are the limitations of String that we can overcome using StringBuilder and StringBuffer? (4 points)

Q4: What are the differences between Heap and Stack Memory? Mention **at least five** differences with respect to memory, access, memory management, lifetime, and usage (3 points)

Q5: What is the difference between equals () method and == (comparison operator)? Explain with code with respect to primitive and reference variables (2 points)

Q6: Which kind of inheritances are supported by Java? Which type of inheritance is not supported by Java? (2 points)

Q7: Specify five differences between overriding and overloading. (3 points)

Q8: Specify five differences between abstract class and interfaces? (3 points)

Q9: How superclasses' constructors are invoked explicitly or implicitly in subclasses? (1 point)

Submission: All submissions must be made electronically (via BlackBoard). You should submit your entire work in one Word/PDF file. Your grade will be based on the quality of your work. Resubmission is not allowed.