

# CSCI 121: Computer Science II

## Homework 4

Answer the following questions. You may turn in a handwritten hard copy or email me your answers.

1. Consider this class:

```
public class Dog {  
    private String name;  
  
    public Dog(String dogName) {  
        name = dogName;  
    }  
  
    public String getName() {  
        return name;  
    }  
}
```

In the following snippet of code, assume that `d1` and `d2` are references to `Dog` objects. The syntax of the code is valid. What is wrong with the semantics? How would you change it so that it behaves as intended?

```
if (d1 == d2) {  
    System.out.println("These two dogs have the same name!");  
}
```

2. Where in memory are objects stored?

3. Where in memory are local variables stored?

4. When does an object cease to exist?

5. When does a local variable cease to exist?

6. What is wrong with the semantics of this class?

```
public class Cat {  
    private String name;  
    private int age;  
  
    public Cat(String catName, int catAge) {  
        String name = catName;  
        int age = catAge;  
    }  
  
    public String getName() {  
        return name;  
    }  
  
    public int getAge() {  
        return age;  
    }  
}
```

7. Using the faulty `Cat` class from the previous question, what will this snippet of code print?

```
Cat cat = new Cat("Catherine", 6);  
System.out.println(cat.getName());
```