CISC 181 Midterm
October 20, 2011

This exam on the Java language is worth 15 points. Partial credit will be given in 0.25 point gradations. Use all whitespace, front and back, as necessary.

Q1 [1 point]

What does a program that has *encapsulation* do, and why is it beneficial?

Q2 [2 points]

Write a method `ArrayListFromString()` which takes one argument, a `String`, and returns it as an `ArrayList` of `Characters`.

Q3 [1 point]

Define *automatic unboxing* and give an example of it.

Q4 [1 point]

What does `String.split()` do? Specifically, explain what is passed to the one-argument version, how it is used, and what the method returns.

Q6 [1 point]

Consider the class below:

```
class Bug {
   static int n = 0;
   int numLegs;
   Bug(int nl) { numLegs = nl; n++; }
}
```

What is the output when the following code is run?

```
Bug r1 = new Bug(8);
Bug r2 = new Bug(6);
r2 = r1;
r2.numLegs = 2;
System.out.println(r1.numLegs);   System.out.println(r1.n);
System.out.println(r2.numLegs);   System.out.println(r2.n);
```

Q7 [1 point]

Explain the difference between *overloading* a method and *overriding* it.