ESC101 : Fundamental of computing

Tutorial sheet 7 **25 September, 2008**

Topics covered :

1. Constructors
2. Access control for the members of a class : public, default(package), private. I did not discuss protected at this moment because I have not taught inheritance till now.
3. Method overloading
4. Object reference as parameter in methods.
5. Building composite data types:
   Point class was defined in the class. Using Point class, we designed Triangle class and Circle class in the class. Then we solved some geometric problems using these classes. You may have a look at the lab assignment for 23 and 24 September.

Topics NOT covered and should not be discussed : static (or class) variables, static (or class) methods, inheritance, polymorphism. In the next two classes, I would be discussing String and arrays.
Please conduct quiz in the last 15 minutes of the class. The solution will be placed on the website tomorrow afternoon.

1. Please clarify all the doubt the students might have in class, object, constructor. This is the last tutorial before the second mid semester exam, so the emphasis should be on clarifying the doubts of the weak students. A few doubts which some students may ask :
   (a) What is difference between public, private, package members ?
   (b) Why don't we make all attributes and methods of a class public ?
   (c) How can we access the attributes of an object if they are declared private ?
   (Answer : by introducing a member in the class which is a public method and returns the attribute)
   (d) What is the meaning and importance of implicit reference `this` in a method of a class (for example `this`.x in Point class) ?
   (e) You may recommend them to go through the sample programs and the lecture notes available on the course website.
2. If all the doubts get clarified in first 30-35 minutes, you may discuss the following prblem.
   There is a public class myInt defined as follows

```
public class myInt
{  public int value;
   public myInt(int i)
   {  value = i;
   }
}
```

   What will be the output of the following program ?

```
class example_reference
{   public static myInt Decrement(myInt m)
    {  m.value  = m.value - 10;
       m = new myInt(20);
       return m;
    }
    public static void main(String args[])
    {  myInt t = new myInt(1);
       myInt r = Decrement(t);
       System.out.println(t.value+'' , ''+r.value);
    }
}
```

   Answer = -9 , 20