CS1316 Spring 2008 Quiz 3 Version 2 Solution

For TA Use Only

Part	Points Possible	Gained	Lost	Running Total
I	5pts			
II. #1	12pts			
II. #2	12pts			
II. #3	6pts			
III.	25pts			
IV.	40pts			
Total	100pts			

NAME: ________________________________

PRISM ID:______________________________

Please write your answers legibly in print. Spelling counts!

Part I: Grading TA [5pts]

Who is your grading TA? (Circle one)

Brian Joel Ricardo Tyler

Daniel John Sean Victoria

Part II: Abstract Classes [30pts]

```
public abstract class Animal{
  public abstract void attack();
  public void speak(){System.out.println("Animal speak.");}
}

public class KillerRabbit extends Animal{
  public void attack(){System.out.println("Go for the neck!");}
  public void speak(){
     super.speak();
     System.out.println("Ni");
  }
  public static void bunnyHop(){System.out.println("Hop hop");}
}
```

Consider the code provided below and answer the following questions:

1. Which of the following lines of code are valid (no errors or exceptions will occur)? Select all that apply [12pts].

   a. KillerRabbit psycho = new KillerRabbit();
   b. Animal killer = new KillerRabbit();
   c. KillerRabbit bunny = new Animal();
   d. Animal monster = new Animal();

2. Given that `KillerRabbit bob = new KillerRabbit()` what would be the output to the interactions pane as a result of the following lines [12pts]:

   a. `bob.attack();`

   ```
   Go for the neck!
   ```

   b. `bob.speak();`

   ```
   Animal speak.
   Ni.
   ```

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3. What is the proper way to call the static method `bunnyHop` somewhere other than `KillerRabbit` class (such as another method in another class)? Your solution cannot include a call to `KillerRabbit`'s constructor [6pts].

```
KillerRabbit.bunnyHop();
```

Part III: True/False [25pts]

__F___ 1. Pop and push are the insertion and removal methods for a queue.

__F___ 2. A good real life example of a stack is a line of people.

__T___ 3. A simulation can represent systems in the real world and the fantasy world.

__T___ 4. In a queue, insertion occurs at one end of the list and the removal occurs at the other.

__T___ 5. Discrete event simulations are advanced from event time to event time.

Part IV: Using random number generators [40pts]

Write a method that will return String representing a randomly chosen colored marble from a bag of marbles. There are 6 red marbles, 5 green marbles and 2 blue marbles. If the marble is green, return `"Green"`. If red, then `"Red"`. If blue, then `"Blue"`.

```
import java.util.Random;


//Using the Random class
public String randomMarble(){
   Random gen = new Random();
   int randomNumber =  gen.nextInt(13);
   if (randomNumber < 6)
      return  "Red";
   else if (randomNumber < 11)
      return "Green";
   else
      return "Blue";
}

//Using the Math.random()
public String randomMarble(){
   double randomNumber =  Math.random() * 13.0;
   if (randomNumber < 6.0)
      return  "Red";
   else if (randomNumber < 11.0)
      return "Green";
   else
      return "Blue";
}
```