CSCI 1100 – Fall 2015
Assignment 1

Name: Yide Ge

Student ID: yge (B00639491)

Declaration: Please complete this declaration		
1	"This document is entirely my own work."	Yes
2	I obtained help to complete this document (e.g., from a TA).	Yes,from Ta
3	This document contains some guidance from the Internet or another document or file or program (e.g., java's API).	no.

Question 1.

```
/*This program will print a number triangle*/
import java.util.Scanner;
   public class Q1{
      public static void main(String[]args){
        int num1,num2;
            Scanner keyboard = new Scanner(System.in);
         System.out.println("Input a number between 0-4: ");
            num1 = keyboard.nextInt();
         System.out.println("Input a number between 5-9: ");
            num2 = keyboard.nextInt();
         System.out.println("    " +num1+ "    \n   " +num2+" "+num2);
         System.out.println(" " +num1+" " +num1+" "+num1);
         System.out.println(num2+" " +num2+" "+num2+" "+num2);
      }
   }
```

```
 ----jGRASP exec: java Q1

Input a number between 0-4:
4
Input a number between 5-9:
7
    4
   7 7
  4 4 4
 7 7 7 7

 ----jGRASP: operation complete.
```

```
 ----jGRASP exec: java Q1

Input a number between 0-4:
3
Input a number between 5-9:
5
    3
   5 5
  3 3 3
 5 5 5 5

 ----jGRASP: operation complete.
```

Question 2.

```
/*This program will print a asterisk triangle or a hash triangle*/
import java.util.Scanner;
   public class Q2{
      public static void main(String[]args){
        int num;
            Scanner keyboard = new Scanner(System.in);
         System.out.println("Input a number between 1-10: ");
            num = keyboard.nextInt();
        if (num>=5){
         System.out.println("    " +"*"+ "    \n  " +"*"+" "+"*");
         System.out.println(" " +"*"+" " +"*"+" "+"*");
         System.out.println("*"+" " +"*"+" "+"*"+" "+"*");
        }
        else {
         System.out.println("    " +"#"+ "    \n  " +"#"+" "+"#");
         System.out.println(" " +"#"+" " +"#"+" "+"#");
         System.out.println("#"+" " +"#"+" "+"#"+" "+"#");
        }
     }
  }
```

```
----jGRASP exec: java Q2

Input a number between 1-10:
4
   #
  # #
 # # #
# # # #

----jGRASP: operation complete.
```

```
----jGRASP exec: java Q2

Input a number between 1-10:
6
   *
  * *
 * * *
* * * *

----jGRASP: operation complete.
```

Question 3.

```
/*This program will print a story*/
import java.util.Scanner;
   public class Q3{
      public static void main(String[]args){
        String name,food,hometown,movie,game,animal,num;
            Scanner keyboard = new Scanner(System.in);
         System.out.println("Enter your name:");
            name = keyboard.nextLine();
         System.out.println("Enter your favorite food:");
            food = keyboard.nextLine();
         System.out.println("Enter your hometown:");
            hometown = keyboard.nextLine();
         System.out.println("Enter your favorite movie:");
            movie = keyboard.nextLine();
         System.out.println("Enter your favorite game:");
            game = keyboard.nextLine();
         System.out.println("Enter your favorite animal:");
            animal = keyboard.nextLine();
         System.out.println("a number from 1 to 5");
            num = keyboard.nextLine();
         System.out.println("THIS IS THE BEST STORY EVER");
         System.out.println("My name is "+name+". And I'm from "+hometown+".");
         System.out.println("My favorite game is "+game+". I have a pet "+animal);
         System.out.println("who I take to watch my favorite movie "+movie+" that we watch while");
         System.out.println("eating "+food+" at least "+num+" time/s a week.");
         System.out.println("The End!");
      }
   }
```

```
----jGRASP exec: java Q3

Enter your name:
Dylan
Enter your favorite food:
PadThai
Enter your hometown:
China
Enter your favorite movie:
007
Enter your favorite game:
Heartstone
Enter your favorite animal:
Dog
a number from 1 to 5
3
THIS IS THE BEST STORY EVER
My name is Dylan. And I'm from China.
My favorite game is Heartstone. I have a pet Dog
who I take to watch my favorite movie 007 that we watch while
eating PadThai at least 3 time/s a week.
The End!

----jGRASP: operation complete.
```

Question 4.

```
/*This program acts as a cash register at a clothing store*/
import java.util.Scanner;
   public class Q4{
      public static void main(String[]args){
        double cost,tax,total;
         Scanner keyboard = new Scanner(System.in);
         System.out.println("Enter the price of the item:");
            cost = keyboard.nextDouble();
         System.out.println("Enter the tax rate: %");
            tax = keyboard.nextDouble();
        if (cost>=25){
            tax = cost*0.8*(tax/100);
            cost = cost*0.8;
            total= cost+tax;
         System.out.println("Sale price $"+cost+"(20% discount)");
         System.out.println("Tax:"+tax);
         System.out.println("Total:"+total);
        }
        else{
            tax = cost*0.9*(tax/100);
            cost = cost*0.9;
            total= cost+tax;
         System.out.println("Sale price $"+cost+"(10% discount)");
         System.out.println("Tax:"+tax);
         System.out.println("Total:"+total);
        }
      }
   }
```

```
 ----jGRASP exec: java Q4

Enter the price of the item:
10
Enter the tax rate: %
15
Sale price $9.0(10% discount)
Tax:1.3499999999999999
Total:10.35

 ----jGRASP: operation complete.
```

```
 ----jGRASP exec: java Q4

Enter the price of the item:
30
Enter the tax rate: %
15
Sale price $24.0(20% discount)
Tax:3.5999999999999996
Total:27.6

 ----jGRASP: operation complete.
```

Question 5.

```
/*This program will check how many pairs of numbers*/
import java.util.Scanner;
   public class Q5{
      public static void main(String[]args){
        int n1,n2,n3,n4,p;
         Scanner keyboard = new Scanner(System.in);
         System.out.println("Input four number between 0-9: ");
            n1 = keyboard.nextInt();
            n2 = keyboard.nextInt();
            n3 = keyboard.nextInt();
            n4 = keyboard.nextInt();
        if (n1==n2){
            if (n3==n4){
               p=2;
            }
            else{
               p=1;
            }
        }
        else if (n1==n3){
            if (n2==n4){
               p=2;
            }
            else{
               p=1;
            }
        }
        else if (n1==n4){
            if (n2==n3){
               p=2;
            }
            else{
               p=1;
            }
        }
        else if (n2==n3||n2==n4||n3==n4){

            p=1;
        }
        else{
            p=0;
        }
        System.out.println("There are "+p+" pair");
      }
   }
```

```
----jGRASP exec: java Q5

Input four number between 0-9:
1 5 3 4
There are 0 pair

----jGRASP: operation complete.
```

```
----jGRASP exec: java Q5

Input four number between 0-9:
1 2 2 9
There are 1 pair

----jGRASP: operation complete.
```

```
----jGRASP exec: java Q5

Input four number between 0-9:
2 4 2 4
There are 2 pair

----jGRASP: operation complete.
```

```
----jGRASP exec: java Q5

Input four number between 0-9:
1 3 3 3
There are 1 pair

----jGRASP: operation complete.
```

Question 6.

```
/*This program will rint the average of the three numbers,
the smallest of the three numbers and the largest of the three numbers.
Sort all three numbers from smallest to largest. */
import java.util.Scanner;
   public class Q6{
      public static void main(String[]args){
        double n1,n2,n3,a,l,m,s;
         Scanner keyboard = new Scanner(System.in);
         System.out.println("Enter 3 numbers: ");
            n1=keyboard.nextDouble();
            n2=keyboard.nextDouble();
            n3=keyboard.nextDouble();
            a = (n1+n2+n3)/3;
        if(n1<=n2){ //n1<n2
            s=n1;
            l=n2;
            if(s<=n3){ //n1<n3,n1<n2
               s=n1;
               if(l<=n3){//n1<n2<n3
                  l=n3;
                  m=n2;
               }
               else{ //n1<n2 n3<n2
                  l=n2;
                  if(n1<n3){ //n1<n3<n2
                     s = n1;
                     m = n3;
                  }
                  else{//n3<n1<n2
                     s=n3;
                     m=n1;
                  }
               }
            }
            else{ //n3<n1<n2
               s=n3;
               m=n1;
               l=n2;
            }
         }
         else{ //n1>n2
            l=n1;
            s=n2;
            if(s<=n3){ //n1>n2,n3>n2
               s=n2;
               if(l<=n3){ //n3>n1>n2
                  m=n1;
                  l=n3;
               }
               else{ //n1>n3>n2
                  s=n2;
                  m=n3;
                  l=n1;
               }
            }
            else{//n1>n2>n3
               s=n3;
               m=n2;
               l=n1;
            }
         }
         System.out.println("The average of "+n1+", "+n2+", and "+n3+" is "+a);
         System.out.println("The smallest number is "+s);
         System.out.println("The largest number is "+l);
         System.out.println("The numbers from smallest to largest are: "+s+", "+m+", and "+l);
      }
   }
```

```
 ----jGRASP exec: java Q6

Enter 3 numbers:
1 2 3
The average of 1.0, 2.0, and 3.0 is 2.0
The smallest number is 1.0
The largest number is 3.0
The numbers from smallest to largest are: 1.0, 2.0, and 3.0

 ----jGRASP: operation complete.

 ----jGRASP exec: java Q6

Enter 3 numbers:
22 55 49
The average of 22.0, 55.0, and 49.0 is 42.0
The smallest number is 22.0
The largest number is 55.0
The numbers from smallest to largest are: 22.0, 49.0, and 55.0

 ----jGRASP: operation complete.

 ----jGRASP exec: java Q6

Enter 3 numbers:
95 101 2
The average of 95.0, 101.0, and 2.0 is 66.0
The smallest number is 2.0
The largest number is 101.0
The numbers from smallest to largest are: 2.0, 95.0, and 101.0

 ----jGRASP: operation complete.
```