Intro2CS HW 01

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1. AddTwo

```java
/*
 * Adds two given integers and prints the result in a fancy way.
 */
public class AddTwo {
    public static void main(String[] args) {
        int first_number = Integer.parseInt(args[0]);
        int second_number = Integer.parseInt(args[1]);
        int sum = first_number + second_number;

        String out = first_number + " + " + second_number +
                     " = " + sum;

        System.out.println(out);
    }
}
```

2. Coins

```java
/*
 * Write a program that gets a quantity of cents as a command-line argument.
 * The program prints how to represent this quantity using as many quarters as
possible, plus the remainder in cents.
 */
public class Coins {
    public static void main(String[] args) {
        int cents_amount = Integer.parseInt(args[0]);
        int quarters = cents_amount / 25;
        int cents = cents_amount % 25;
        String output = "Use " + quarters + " quarters and " +
                        cents + " cents";
        System.out.println(output);
    }
}
```

3. Linear Equation Solver

```java
/*
 * Solves linear equations of the form a·x + b = c.
 * The program gets a, b, and c as command-line arguments,
 * computes x, and prints the result.
 * Treats the three arguments as well as the computed value as double values
 */
public class LinearEq {
    public static void main(String[] args) {
        double a = Double.parseDouble(args[0]);
        double b = Double.parseDouble(args[1]);
        double c = Double.parseDouble(args[2]);

        double x = (c - b)/a;
        String output = a + " * x + " + b + " = " + c + "\n" +
                        "x = " + x;
        System.out.println(output);
    }
}
```

4. Triangle

```java
/*
 * Three sides can form a triangle if the sum of the lengths of any two sides
is greater than the length of the remaining side.
 * This is known as the Triangle Inequality Theorem.
 * Write a program that tests if three given integers form a triangle.
 */
public class Triangle {
    public static void main(String[] args) {
        int a = Integer.parseInt(args[0]);
        int b = Integer.parseInt(args[1]);
        int c = Integer.parseInt(args[2]);

        boolean is_triangle = (a + b > c) && (b + c > a) && (a + c > b);
        String output = a + ", " + b + ", " + c + ": " + is_triangle;

        System.out.println(output);
    }
}
```

5. Gen3

```java
/*
 * Generates three random integers, each in a given range [a,b),
 * prints them, and then prints the minimal number that was generated.
 */
public class GenThree {
    public static void main(String[] args) {
        int min_limit = Integer.parseInt(args[0]);
        int max_limit = Integer.parseInt(args[1]);

        // generate rand values in the given range (max not inclusive)
        int rand_1 = (int)(Math.random()*(max_limit - min_limit)) + min_limit;
        int rand_2 = (int)(Math.random()*(max_limit - min_limit)) + min_limit;
        int rand_3 = (int)(Math.random()*(max_limit - min_limit)) + min_limit;
        // finding minimum generated value
        int min_rand = Math.min(rand_1, Math.min(rand_2, rand_3));

        //output
        System.out.println(rand_1);
        System.out.println(rand_2);
        System.out.println(rand_3);
        System.out.println("The minimal generated number was " + min_rand);
    }
}
```