

Exercises

Tuesday, April 12, 2022 5:12 PM

1.1.3 Write a program that takes three integer command-line arguments and prints equal if all three are equal, and not equal otherwise.

```
import edu.princeton.cs.algs4.StdOut;
public class exercise_3
{
    public static void main(String[] args)
    {
        int a = Integer.parseInt(args[0]);
        int b = Integer.parseInt(args[1]);
        int c = Integer.parseInt(args[2]);
        if (a == b && b == c)
        {
            StdOut.println("equal");
        }
        else
        {
            StdOut.println("not equal");
        }
    }
}
```

1.1.5 Write a code fragment that prints true if the double variables x and y are both strictly between 0 and 1 and false otherwise.

```
if ( x > 0 && x < 1 && y > 0 && y < 1)
{
    StdOut.println("true");
}
else
{
    StdOut.println("false");
}
```

1.1.10 What is wrong with the following code fragment?

```
int[] a;
for (int i = 0; i < 10; i++)
    a[i] = i * i;
```

it has to be initialized

```
int[] a = new int[10];
```

1.1.13 Write a code fragment to print the *transposition* (rows and columns changed) of a two-dimensional array with M rows and N columns.

```
import edu.princeton.cs.algs4.StdOut;
public class exercise_3
{
    public static void main(String[] args)
    {
        int[][] a = {{1,2,3},{4,5,6}};
        int[][] b = new int[3][2];
        for ( int i = 0; i < 3; i++)
        {
            for ( int j = 0; j < 2; j++)
            {
                b[i][j] = a[j][i];
                StdOut.print(b[i][j]);
                StdOut.print(" ");
            }
            StdOut.println();
        }
    }
}
```

```
~/IdeaProjects/RandomSeq> javac exercise_3.java
```

```
~/IdeaProjects/RandomSeq> java exercise_3
```

```
1 4
```

```
2 5
```

```
3 6
```

1.1.21 Write a program that reads in lines from standard input with each line containing a name and two integers and then uses `printf()` to print a table with a column of the names, the integers, and the result of dividing the first by the second, accurate to three decimal places. You could use a program like this to tabulate batting averages for baseball players or grades for students.

```

import edu.princeton.cs.algs4.In;
import edu.princeton.cs.algs4.StdOut;

public class exercise {
    public static void main(String[] args) {
        // %8s means 8 empty spaces before the string
        StdOut.printf("%8s %7s %7s %7s", "Names", "Number1", "Number2", "Result\n");

        // since StdIn.readString() can only read one value from the terminal window at a time
        // Therefore use In which it can read multiple values at a time
        // as the program is running, everything you type on the terminal window will be stored in it
        In in = new In();

        // while the program is not ended
        while (in.hasNextLine()) {
            //store each line of content on the terminal window in "line"
            String line = in.readLine();
            //splits the line with " " and store the split values in an array called values
            String[] values = line.split(" ");
            Print(values);
        }

        private static void Print(String[] values) {
            StdOut.printf("%8s", values[0]);
            StdOut.printf("%8s", values[1]);
            StdOut.printf("%8s", values[2]);

            double value1 = Double.parseDouble(values[1]); // convert string to double
            double value2 = Double.parseDouble(values[2]);
            double result = value1 / value2;
            StdOut.printf("%7.3f \n", result);
        }
    }
}

```

← Initializes an input stream from standard input.

```

~/IdeaProjects/section1_1/src> javac exercise.java
~/IdeaProjects/section1_1/src> java exercise
Names Number1 Number2 Result

```

```

Names Number1 Number2 Result
Rene 2 1 ← input
Rene      2      1 2.000 ← output

```

```
      Names Number1 Number2 Result
Rene 2 1
      Rene      2      1  2.000
Bacon 16 4
      Bacon     16      4  4.000
^Z
~/IdeaProjects/section1_1/src>
```