



ASSIGNMENT # 2

Eric Arlan Dockery 09/23/2013

09/23/2013

Programming Assignment 2

By: Eric Dockery

P.P 3.1 Write an application that prompts for and reads the user's first and last name (separately). Then print a string composed of the first letter of the user's first name, followed by the first five characters of the user's last name, followed by a random number in the range 10 to 99. Assume that the last name is at least five letters long. Similar algorithms are sometimes used to generate usernames for new computer accounts.

For this problem I will need to `import java.util.*` for random number generation and for the `Scanner(System.in)` functions. Also I will need to use the `String.substring(int, int)` Function to get the parts of the first and last name correctly. The First name will have the integers (0,1) and the last name will have (0,5) then I will concat the function together in order to get the appropriate username generated. Even though we haven't talked about it in lecture since we are taking input from the user we should close out the scanners at the end of the program using the `.close()` command.

```
Console ✕
<terminated> problemone [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Sep 23, 2013, 10:28:20 AM)
Welcome to the username generator program!
For the generator we will need some information from you
Enter your first name:Eric
Enter your last name:Dockery
Your User Name is: EDocke26
```

P.P 3.6 Write an application that reads the lengths of the sides of a triangle from the user. Compute the area of the triangle using Heron's formula (below), in which s represents half of the perimeter of the triangle and a, b and c represent the lengths of the three sides. Print the area to three decimal places.

$$\text{Area} = \text{SQRT}(s(s-a)(s-b)(s-c))$$

To write this program we will need to use scanners to get the sides of the triangle from the user. We will also need to use the formula for the perimeter of a triangle which is $s = a + b + c$. After calculating the perimeter we will then use the area formula above and the java function `sqrt()` to calculate the area and report the finding back to the user.

```
Console
<terminated> problemtwo [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Sep 23, 2013, 12:13:29 PM)
Welcome to the Heron's area calculator
Please enter the first side length: 3
Please enter the second side length: 4
Please enter the last side length: 5
Exception in thread "main" java.util.IllegalFormatPrecisionException: 2
    at java.util.Formatter$FormatSpecifier.checkText(Unknown Source)
    at java.util.Formatter$FormatSpecifier.<init>(Unknown Source)
    at java.util.Formatter.parse(Unknown Source)
    at java.util.Formatter.format(Unknown Source)
    at java.io.PrintStream.format(Unknown Source)
    at java.io.PrintStream.printf(Unknown Source)
    at problemtwo.main(problemtwo.java:20)
```

Invalid form of limiting the floating decimal to two places. Placed an extra % symbol in the code.

```
Console
<terminated> problemtwo [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Sep 23, 2013, 12:16:04 PM)
Welcome to the Heron's area calculator
Please enter the first side length: 3
Please enter the second side length: 4
Please enter the last side length: 5
The area is 77.77
```

P.P 3.7 Write an application that generates a random integer in the range 20 to 40, inclusive, and displays the sine, cosine, and tangent of that number.

To program this we need to look up the functions for sin, cos, and tan in the math library. These functions are just Math.sin(double), Math.cos(double), and Math.tan(double). So we use those functions and the random function to generate the angle and its values in radians.

Console ✕

<terminated> ProblemThree [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Sep 23, 2013, 12:33:07 PM)

Welcome to the angle function calculator!!

Today I will generate a random number between 20 and 40

Then I will show you the sine, cosine, and tangent values for that number.(in radians)

This is the random number for this run 26

This is the sine of the angle 0.7625584504796028

This is the Cosine of the angle 0.6469193223286404

This is the Tangent of the angle 1.1787535542062797