CS 110, Programming Fundamentals I
Central Washington University
Instructor: Tatiana Harrison

Computer Science

This is the second of 6 homework assignments, and the entire assignment is worth 100 points. This homework assignment covers Java fundamentals and assumes understanding of the concepts that are introduced in our introductory lectures. The two programming exercises are worth 50 points each. Check the course web page for TA office hours. If you need help, ask them, ask me, email me, come to my office hours, etc.

What to hand in:

Upload two **.java** files to your Canvas account. The rubric has been posted to the course website.

Programming Question 1 – A Program that Outputs Your DJ Name – 50 points

For this first question, your program will prompt the user two times, for his/her first and last name. The program will then take the first half of the first name, the second half of the second name, and concatenate them, along with the word "**Jayster**" to generate the person's DJ (Disk Jockey) name. Here are three sample invocations of the program:

What is your first name? Tony What is your last name? Wreckless ToklesJayster	What is your first name? George What is your last name? Harrison GeoisonJayster	What is your first name? Santa What is your last name? Clause SauseJayster
(a) The first name has an even number of characters, the last name - odd.	(b) First and Last names have even numbers of characters	(c) The first name has an odd number of characters, last name – even.

- If the first name has an odd number of characters, then the first part of the DJs name is made up of all the characters that are to the left of the middle character of the first name.
- If the first name has an even number of characters, then the first part of the DJs name is the first half of the first name.
- If the last name has an odd number of characters, then the second half of the DJs name is made up of the middle letter and all characters to the right of it, **EXCEPT** for the last character.
- If the last name has an even number of characters, then the second part of the DJs name is made up of all the characters of the second half of the last name.

Hints: (1) use the Scanner class to read input from the user, (2) Use the substring as well as the length methods of the String class, to manipulate the user's input first and last name, to extract the necessary part of the DJs name. Pseudocode was given during lecture.

Programming Question 2 – Should you build a square, or a circle fence? - 50 points

For this second programming question, assume you are Farmer Fred. Your long-lost cousin has given you all his sheep (more than 100 of them). You must build a fence for the sheep, but you don't know if you should build a rectangular enclosure, or a circular one. You also have a limited amount of wood that you can use to build the fenced enclosure. Luckily, you just completed a Java programming course

at CWU.

So, your task is to write a program, that will prompt the user to provide the radius of the circle, as well as the length and width parameters of the rectangular fence. The program will then output the circumference (you must use the PI constant from the Math library) of a perfect circle enclosure (calculate the circumference using the supplied radius), and the total perimeter of the rectangular box. Here are two sample invocations of the program:

What is the radius of the circle? 34 What is the length of the rectangle? 3 What is the width of the rectangle? 5.6 The circle circumference is 213.62830044410595 The perimeter of the rectangle is 17.2	What is the radius of the circle? 12.67 What is the length of the rectangle? 3.4 What is the width of the rectangle? 0.23 The circle circumference is 79.60795784196536 The perimeter of the rectangle is 7.26
(a) Only the width of the rectangle is a non-integer	(b) All inputs are non-integer values

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Item	Points Available
DJ Name	
Code compiles and correct output	30
Code commented / indented	10
Good variable names	4
Provide inputs that break code	2
Pseudocode at top of java file	4
Total	**50**

Item	Points Available
Fence Perimeter Calculation	
Code compiles and correct output	30
Code commented / indented	10
Good variable names	4
Provide inputs that break code	2
Pseudocode at top of java file	4
Total	**50**