ITEC 120 Lab 3
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Reference links:
http://www.radford.edu/~aaray/template.java
http://www.radford.edu/~aaray/FunctionContainer.java
http://www.radford.edu/~aaray/Lab11-100.txt

You will need to turn in a lab report for this lab.

Problem 1: Engine tuning
Fast Cars LLC has a new prototype car that they are currently testing. The test engineers are busy taking measurements of how fast the car goes around the track and don't have any time to analyze the results. Your job is to help them analyze the results by calculating the average time for four test runs and comparing it to the performance goal set by the design team.

The test engineers are using the following format to record four test runs:
time1,time2-time3|time4

Write a program that reads in a single line of text that holds the four test runs, parses each of the times out of the line, averages and compares them to the performance goal of 25.0. If the average time is less than or equal to 25.0 print out Current modification worked. Stop! Remember and write down what you did!

Sample input 1:
25.3,24.2-22.1|20.9

Sample output 1:
Current modification worked. Stop! Remember and write down what you did!

Problem 2: Lift off!
Use a while loop to print out the numbers from 10 to 1 and then print Lift off.

Problem 3: Drawn out bot
The folks over at Hollywood budget studios are looking for a computer actor in one of their films. They need a computer program that will take a line of text and will spit out a version of the text that appears like it is drawn out. Write a computer program that will take a line of text and will repeat every letter three times. For example, Hello World would be HHHeeellllooo WWWooorrrlllddd. You will need to use a loop in order to do this.

Problem 4: Calculating credit
You have been hired by Investors Inc. to decide if buying mortgage backed securities is a good idea or not. They have managed to obtain a large amount of data and they need a summary report produced from the volumes of data.

Part 1

Your first task is to come up with a way to read an individual record. Each record will be typed into the command prompt on a line by itself and consists of the mortgage payment amount per month, followed by a '|', then how much the debtor makes per month. For example, 300|600. If the payment per month is greater than 30 % of the debtor's income per month, then the mortgage is considered risky. Print out if the mortgage is safe or risky. I recommend creating a function that will return whether or not it is risky.

Part 2

Each of the data files from Investors Inc. has 100 different debtors in it. Write a while loop that reads in 100 different records and prints out whether each mortgage is risky or not. Use the file Lab11-100.txt to test your program. Run your program by using java programName < Lab11-100.txt .

Part 3

Modify your program from part two so that it collects the following statistics from all of the records:

Number of safe mortgages
Number of unsafe mortgages
Total monthly income of debtors
Total monthly mortgage payments of debtors
Average monthly income of debtors
Average monthly mortgage payment of debtors
Maximum monthly income and mortgage payment
Minimum monthly income and mortgage payment