ACO 101 Spring 2019
Programming Assignment 1
Due: Start of Class Thursday, 21 March 2019

In this programming assignment, you will combine the various components of the Java programming language that you learned in the first 4 chapters of the textbook:

- Variables and Types (Ch 2 & Ch 3)
- Input using Scanner (Ch 2)
- Decisions (Ch 3)
- Loops (Ch 4)

The program will be based on careers and median salaries from example careers for degress using the following format:

Career MedianSalary

where MedianSalary is listed as $##,### or $###,###

You are to prompt the user to input career data until the user enters a blank line. The goal of the program is to find the title and salary for the career having the highest and lowest median salary. Your program must validate input, displaying invalid input with an appropriate message.

Note:

- You cannot assume that the $ sign appears in a specific column, you must find it in the string.
- You must remove leading and trailing spaces from career, e.g., String has a trim() method.
- You will need to convert the string representation of the salary to one that can be converted to an integer using Integer.parseInt(string). Before calling, make sure that all characters are digits using Character. isDigit(ch).

IMPORTANT! You can use only the features of the Java programming language from Chs 1-4. Specifically, you CANNOT use regular expressions to read input. However, you can use various methods of the String, Integer, and Character classes.

On the due date, you will turn in the following:

1. A hard copy of your .java files: Make sure that the listing includes your name and class as a comment line in your .java files.
2. A printout of the compilation and execution of your program. (You can copy the contents of the output window of jgrasp OR submit a screenshot.)
3. An electronic copy of your .java files must be turned in through the assignment facility.

NOTE: Only programs that successfully compile and execute will be considered for assessment.

- ***Your program must adhere to the specifications***

REMINDER: THIS IS AN INDIVIDUAL ASSIGNMENT!

You can only discuss the assignment with the professor or lab assistant.

Test Cases:

- Careers: Leading spaces, no leading space
- Median Salaries:
  valid, missing $, missing comma, extra comma, not digits
- Enter median salaries in various orders:
  increasing order, decreasing order, unordered
- Line of data: both inputs, only career, only salary

Sample Input and Output:

```
 ----jGRASP exec: java Careers
Please enter(title $salary): Database Architects                $88,510
Please enter(title $salary): Network and Computer Systems Administrators       $81,100
Please enter(title $salary): Computer Network Architects          $104,650
Please enter(title $salary): NoSalaryTest1
Invalid input - no $: NoSalaryTest1
Please enter(title $salary): NoSalaryTest2 99,999
Invalid input - no $: NoSalaryTest2 99,999
Please enter(title $salary): NoCommaTest $99999
Invalid input - comma issue:NoCommaTest $99999
Please enter(title $salary): ExtraCommasTest $999,999,999
Invalid input - comma issue:ExtraCommasTest $999,999,999
Please enter(title $salary): $99,999
Invalid input - no title:$99,999
Please enter(title $salary): SalaryNotNumeric $123,bbb
Invalid input - salary not integer: SalaryNotNumeric $123,bbb
Please enter(title $salary):

Maximum Salary: 104650 for title: Computer Network Architects
Minimum Salary: 81100 for title: Network and Computer Systems Administrators

 ----jGRASP: operation complete.
```