CSCI 374 Perl Programming Project

Due date: Mar 25, 2025
How to submit: email your source code (with proper comments) and sample output proving correctness of your program

You should not copy from others or let other students use your code. Violation to this policy will result in automatic fail. (I might even ask you to explain your code if necessary.)

Part 1: (20 points)

Write a Perl program to accomplish each of the following on the file **solar.txt** (see link at the class homepage)

1. Print all records that do not list a discoverer in the eighth field.
2. Print every record after erasing the fifth field. Note: It would be better to say "print every record" *omitting* the fifth field.
3. Print the records for satellites that have negative orbital periods. (A negative orbital period simply means that the satellite orbits in a counterclockwise direction.)
4. Print the data for the objects discovered by Galileo.

About **solar.txt file:**

This file contains lines of 9 items, the first being:

```
Adrastea XV Jupiter 129000 0.30 0.00 0.00 Jewitt 1979
```

in alphabetical order by the name of the planet or moon (first field).
The text in [] is the corresponding field from the line above.
The fields in this file are:

1. Name of planet or moon [Adrastea]
2. Number of moon or planet (roman numerals) [XV]
3. Name of the object around which the satellite orbits [Jupiter]
4. Orbital radius (semimajor axis) in kilometers [129000]
5. Orbital period in days [0.30]
6. Orbital inclination in degrees [0.00]
7. Orbital eccentricity [0.00]
8. Discoverer [Jewitt]
9. Year of discovery [1979]

Part 2: (20 points)

Separate, count and sort the words in the example text file, **electricity.txt** (see link at the class homepage). Sort in the following orders and your output should be nicely lined up in columns to the output file.

1. alphabetically with upper case words just in front of lower-case words with the same initial characters

2. by frequency, from high to low (with alphabetical order for words with the same frequency)

Part 3: (10 points)

Write a program that accepts input from the user and returns true if it is a valid integer in Perl. Please test all three cases below.

(Note: Perl integer can be in one of following forms.

1. Standard decimal notation: 123, -25, etc
2. Octal notation (leading 0): 025, 05827, etc
3. Hexadecimal notation (leading 0x or 0X): 0X3A2F, etc)