CMPSC 4983 – Seminar – System Administration with Perl
Final Project #4

Regular Expressions:

Research regular expressions and write a single script to demonstrate the following.
Put comments above each section indicating the problem number being addressed.

Problems 2-4, there should be a prompt for input, followed by a single if/else statement displaying either a message indicating "INPUT is valid" or "INPUT is not valid" which echoes the user's INPUT.

1. For each of the following, explain via comments and then demonstrate:
   a) Match the substring "The " at the start of the input string
   b) Match a semicolon at the end of a string
   c) Verify input is NOT a blank line
   d) Difference between [\t]* and [|\t]*

2. Valid Variable Name in C:

   Variable names in C can contain letters, digits, and underscores and must begin with a letter. Prompt the user to enter a variable name and verify whether or not it would be valid for use in a C program.

3. C Variable Declarations:

   Variable declarations for integers and/or real numbers in C can be written as:

   TYPE NAME; or TYPE NAME, NAME, NAME;

   where TYPE is either int or float and NAME is a valid variable name. There must be at least one space between the TYPE and the NAME, but the spaces within comma separated list of names is optional. Prompt the user for a variable declaration and verify that it is syntactically correct.

4. Phone Number:

   Prompt the user to enter a phone number (area code included) and check to make sure it is valid by verifying that it meets one of the two following forms:

   (123) 456-7890
   123-456-7890

   Please note that whitespace is not a concern and should be ignored during validity check.

5. IP Address:

   IP (Internet Protocol) address is a unique 32 bit number assigned to each machine connected to the Internet. These addresses are usually denoted as 4 decimal numbers (also called octets) separated by dots (ex: 192.168.1.128). Since each of these 4 numbers is 8 bits in size (32 bits total), the decimal number for each will range from 0-255. Although different ranges of numbers designate different classes/purposes.

   Prompt the user to enter an IP address and check to make sure that it is valid by not only verifying you get 4 decimal numbers separated by dots, but that there are no spaces in the address and the numbers are within the valid range.