CS 112 Assignment 10a

Submit your finished code to the Dropbox. You will need to pass off the assignments with the TA or tutor during their office hours (their information is in the CS 112 Course Information section of the Table of Contents), or the instructor in class. Follow the formatting guide which is also found in the CS 112 Course Information section.

Read the instructions carefully. Make sure your output matches the example run.

Objectives:

In this assignment you will learn how to do the following:

- Open, read and close a file without modifying it.
- Open a text file and clear it of all data.
- Open a file, write data to it and close the file.

Situation:

Your boss has determined that employee passwords need to be updated and made stronger. The new password policy has the following requirements

- At least 8 characters in length
- Must contain at least one upper case character
- Must contain at least one lower case character
- Must contain one number character
- Must contain one of the following characters: @,#,%,^,&,*

After a couple of weeks, your boss wants to know if all employee passwords now meet the new requirements. He has given you a text file (pwd.txt) and asked you to write a program that will scan the file and create two new files (invalidpwd.txt and validpwd.txt). All invalid passwords from pwd.txt will be written to invalidpwd.txt and all valid passwords from pwd.txt will be written to validpwd.txt.

Program: Password Scanner

For this assignment you will need to download the file “pwd.txt” and save it to the directory where you keep all your Python programs. You will find this file with Assignment 10a (this document) in your Assignment 10a dropbox.

Write a program that:

- Checks to see if the pwd.txt file exists in the current directory. If the file does not exist in the current directory, display an error message and stop the program.
- Opens the pwd.txt file and saves all of its contents into a list object.

- Checks if the files invalidpwd.txt and validpwd.txt exist. If they do, clear them of all data. If they do not exist, create them.
- Evaluates each password in the list one at a time to see if it meets all requirements.
- Writes all valid passwords to the validpwd.txt file and all invalid passwords to the invalidpwd.txt file.
- Displays messages to the user as shown in the example run.

Break down the work of determining if a password is valid by writing four functions to check for each requirement. Your program should contain the following four functions:

hasUpper(): Accepts a text variable as an argument and returns True if the text variable has as least one (1) upper case character and returns False if it does not.

hasLower(): Accepts a text variable as an argument and returns True if the text variable has as least one (1) lower case character and returns False if it does not.

hasNumber(): Accepts a text variable as an argument and returns True if the text variable has as least one (1) number and returns False if it does not.

hasSpecial(): Accepts a text variable as an argument and returns True if the text variable has as least one (1) of the designated special characters and returns False if it does not. Special Character List: ['@','#','%','^','&','*']

Example Run

```
Beginning password analysis....
Opening file 'pwd.txt'.
Analysis complete.  Closing files.
Results can be found in files 'invalidpwd.txt' and 'validpwd.txt' in the D:\Users\Jeffrey\MyPythonScripts directory
```