**PYTHON ACTIVITY 12:**

1)Unix-based operating systems also typically include a tool named tail. It displays the last 10 lines of a file whose name is provided as a command line parameter. Write a Python program that provides the same behavior. Display an appropriate error message if the file requested by the user does not exist or if the command line parameter is omitted. There are several different approaches that can be taken to solve this problem. One option is to load the entire contents of the file into a list and then display the last 10 elements. Another option is to read the contents of the file twice, onceto count the lines, and a second time to display the last 10 lines. However, both of thesesolutions are undesirable when working with large files. Another solution exists that

only requires you to read the file once, and only requires you to store 10 lines from the file at one time. For an added challenge, develop such a solution.

1. Create a program that adds line numbers to a file. The name of the input file will be read from the user, as will the name of the new file that your program will create. Each line in the output file should begin with the line number, followed by a colon and a space, followed by the line from the input file.
2. Write a program that displays the word (or words) that occur most frequently in a file. Your program should begin by reading the name of the file from the user. Then it should find the word(s) by splitting each line in the file at each space. Finally,any leading or trailing punctuation marks should be removed from each word. In addition, your program should ignore capitalization. As a result, apple, apple!, Apple and ApPlE should all be treated as the same word. You will probably find your solution to Exercise 111 helpful when completing this problem.

4)While generating a password by selecting random characters generally gives a rela- tively secure password, it also generally gives a password that is difficult to memorize. As an alternative, some systems construct a password by taking two English words and concatenating them. While this password isn’t as secure, it is much easier to memorize.Write a program that reads a file containing a list of words, randomly selects two of them, and concatenates them to produce a new password. When producing the password ensure that the total length is between 8 and 10 characters, and that each word used is at least three letters long. Capitalize each word in the password so that

the user can easily see where one word ends and the next one begins. Display the password for the user.