Scientific Computing – Lab Assignment-5

Python Programming – File Handling and Exception Handling

1. Write a Python program to read an entire text file.

2. Write a Python program to read first n lines of a file.

3. Write a Python program to append text to a file and display the text.

4. Write a Python program to read a file line by line and store it into
    a. List
    b. Variable
    c. Array

5. Write a Python program to count the number of lines in a text file and frequency of words in a file.

6. Write a python program to find the longest word in an entire text file.

7. Write a Python program to remove newline characters from a file.

8. The code below assigns the 5th letter of each word in food to the new list fifth. However, the code currently produces errors. Insert a try/except clause that will allow the code to run and produce of list of the 5th letter in each word. If the word is not long enough, it should not print anything out. Note: The pass statement is a null operation; nothing will happen when it executes.

```
food = ["chocolate", "chicken", "corn", "sandwich", "soup", "potatoes",
"beef", "lox", "lemonade"]
fifth = []
for x in food:
        fifth.append(x[4])
```

9. Add exception handling to the get_value() function so that it, if an IndexError exeception occurs because the specified index does not exist, the function returns the keyword None. Do not handle any other types of exceptions.

```
def get_value(data_list, index):
        return data_list[index]
# Sample list data
```

```
my_list = ['a', 'b', 'c']
```

10. Calculate the log base ten of each value in xValues and store the result in a list called solution. Use exception handling to skip any calculations that produce math domain errors.

```
xValues = (0.8, -0.1, 0.9, -0.1, 0.1, 0.30000000000000004, -0.1, 0.5, 1.0, -0.1,
0.9, 0.9, 0.1, 1.0, 0.2, 0.2, 0.1, 0.9, 0.0, 1.0)
```