Assignment 5

File and Exception Handling

Exercise 1:

Write a Python program to read a file and display its contents.

```
#1) Read and display contents of file
file=open("C:\\Users\\Monisha Menon\\Desktop\\Core\\Python\\Python_Assignments\\Assignment_5\\exercise1.txt",'r')
print(file.read())
```

exercise1.txt

File Edit View

```
Write a Python program to read a file and display its contents.
```

```
In [2]: runfile('C:/Users/Monisha Menon/Desktop/Core/Python/
Python_Assignments/Assignment_5/Assignment_5.py', wdir='C:/Users/Monisha
Menon/Desktop/Core/Python/Python_Assignments/Assignment_5')
Write a Python program to read a file and display its contents.
```

Exercise 2:

Write a Python program to copy the contents of one file to another file.

```
#2) Copy contents of one file to another
with open("C:\\Users\\Monisha Menon\\Desktop\\Core\\Python\\Python_Assignments\\Assignment_5\\source.txt", 'r') as source:
    content = source.read()
with open("C:\\Users\\Monisha Menon\\Desktop\\Core\\Python\\Python_Assignments\\Assignment_5\\destination.txt", 'w') as destination:
    destination.write(content)
```

source.txt

File Edit View

```
Write a Python program to copy the contents of one file to another file.
```

destination.txt

File Edit View

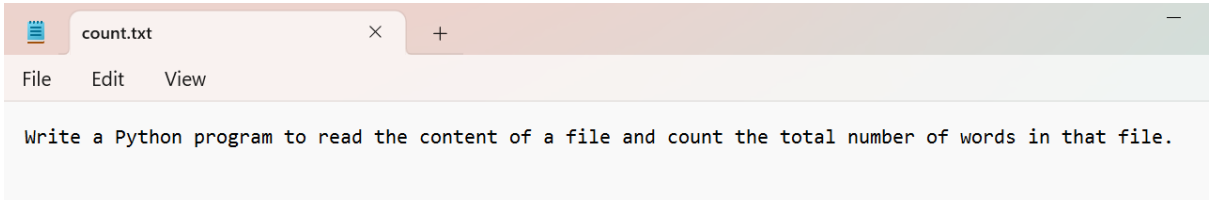
```
Write a Python program to copy the contents of one file to another file.
```

```
In [4]: runfile('C:/Users/Monisha Menon/Desktop/Core/Python/
Python_Assignments/Assignment_5/Assignment_5.py', wdir='C:/Users/Monisha
Menon/Desktop/Core/Python/Python_Assignments/Assignment_5')
Write a Python program to read a file and display its contents.
```

Exercise 3:

Write a Python program to read the content of a file and count the total number of words in that file.

```
#3) Read and count the words
with open("C:\\Users\\Monisha Menon\\Desktop\\Core\\Python\\Python_Assignments\\Assignment_5\\count.txt", 'r') as count:
    content = count.read()
words = content.split()
word_count = len(words)
print("Total number of words in the file is:",word_count)
```




```
In [1]: runfile('C:/Users/Monisha Menon/Desktop/Core/Python/
Python_Assignments/Assignment_5/Assignment_5.py', wdir='C:/Users/Monisha
Menon/Desktop/Core/Python/Python_Assignments/Assignment_5')
Write a Python program to read a file and display its contents.



Total number of words in the file is: 21
```

Exercise 4:

Write a Python program that prompts the user to input a string and converts it to an integer. Use try-except blocks to handle any exceptions that might occur.

```
#4) Converting string to integer
a = input("Enter a string to convert to an integer: ")
try:
    result = int(a)
    print("The converted integer is:", result)
except ValueError:
    print("Error: The input is not a valid integer.")
```

```
In [4]: runfile('C:/Users/Monisha Menon/Desktop/Core/Python/
Python_Assignments/Assignment_5/Assignment_5.py', wdir='C:/Users/Monisha
Menon/Desktop/Core/Python/Python_Assignments/Assignment_5')
Enter a string to convert to an integer: 5
The converted integer is: 5

In [5]: runfile('C:/Users/Monisha Menon/Desktop/Core/Python/
Python_Assignments/Assignment_5/Assignment_5.py', wdir='C:/Users/Monisha
Menon/Desktop/Core/Python/Python_Assignments/Assignment_5')
Enter a string to convert to an integer: 5.5
Error: The input is not a valid integer.
```

Exercise 5:

Write a Python program that prompts the user to input a list of integers and raises an exception if any of the integers in the list are negative.

```
#5) Raise exception when integer list is negative
b = input("Enter a list of integers separated by spaces: ")
try:
    integer_list = [int(x) for x in b.split()]
    for number in integer_list:
        if number < 0:
            raise ValueError("Negative integer found")
    print("All integers are non-negative.")
except ValueError as e:
    print("Error",e)
```

```
In [1]: runfile('C:/Users/Monisha Menon/Desktop/Core/Python/
Python_Assignments/Assignment_5/Assignment_5.py', wdir='C:/Users/Monisha
Menon/Desktop/Core/Python/Python_Assignments/Assignment_5')
Enter a list of integers separated by spaces: 2 4 7
All integers are non-negative.

In [2]: runfile('C:/Users/Monisha Menon/Desktop/Core/Python/
Python_Assignments/Assignment_5/Assignment_5.py', wdir='C:/Users/Monisha
Menon/Desktop/Core/Python/Python_Assignments/Assignment_5')
Enter a list of integers separated by spaces: 3 -4 5
Error Negative integer found
```

Exercise 6:

Write a Python program that prompts the user to input a list of integers and computes the average of those integers. Use try-except blocks to handle any exceptions that might occur. Use the finally clause to print a message indicating that the program has finished running.

```python
#6) Compute average
try:
    c = input("Enter a list of integers separated by spaces: ")
    integer_list = [int(x) for x in c.split()]
    total = sum(integer_list)
    count = len(integer_list)
    if count == 0:
        raise ZeroDivisionError("Cannot compute an average.")
    average = total / count
    print("Average is: ",average)
except ValueError:
    print("Error: Enter only integers separated by spaces")
except ZeroDivisionError as e:
    print("Error",e)
finally:
    print("Program has finished running.")
```

```
In [3]: runfile('C:/Users/Monisha Menon/Desktop/Core/Python/
Python_Assignments/Assignment_5/Assignment_5.py', wdir='C:/Users/Monisha
Menon/Desktop/Core/Python/Python_Assignments/Assignment_5')
Enter a list of integers separated by spaces: 5 6 7
Average is:  6.0
Program has finished running.
```

Exercise 7:

Write a Python program that prompts the user to input a filename and writes a string to that file. Use try-except blocks to handle any exceptions that might occur and print a welcome message if there is no exception occurred.

```python
#7) Input a filename and write a string to that file
try:
    filename = input("Enter the filename: ")
    file = open(filename, "w")
    file.write("This is a sample text.\n")
    file.close()
    print("File written successfully! Welcome!")
except Exception as e:
    print("Error",e)
```

```
In [1]: runfile('C:/Users/Monisha Menon/Desktop/Core/Python/
Python_Assignments/Assignment_5/Assignment_5.py', wdir='C:/Users/Monisha
Menon/Desktop/Core/Python/Python_Assignments/Assignment_5')
Enter the filename: sample
File written successfully! Welcome!
```