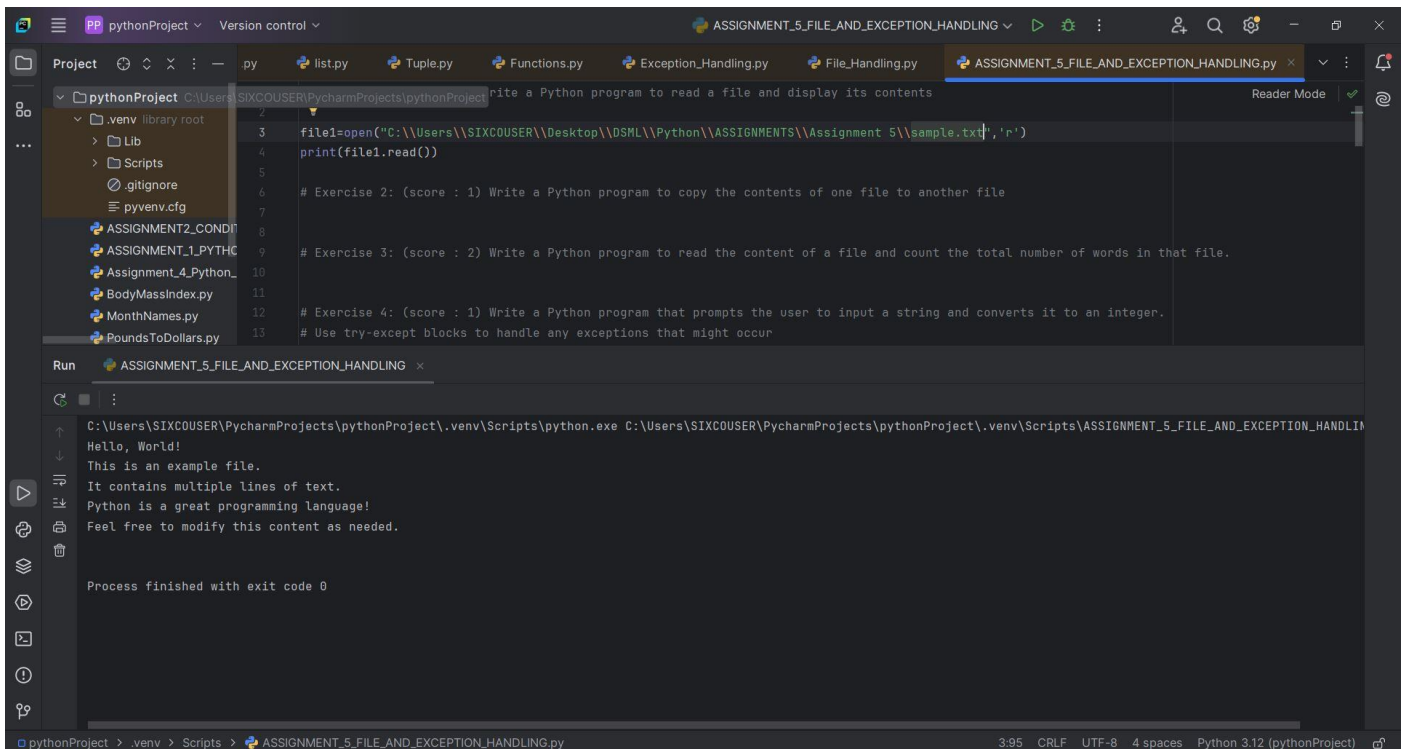


ASSIGNMENT 5 – FILE AND EXCEPTION HANDLING

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

```
file1=open("C:\\Users\\SIXCOUSER\\Desktop\\DSML\\Python\\ASSIGNMENTS\\Assignment 5\\sample.txt",'r')

print(file1.read()).
```



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

```
source_filename = input("Please enter the source filename: ")
destination_filename = input("Please enter the destination filename: ")
```

try:

```
source_file = open(source_filename, 'r')
destination_file = open(destination_filename, 'w')
contents = source_file.read()
destination_file.write(contents)
print("Contents copied successfully!")
```

except FileNotFoundError:

```
print(f"Error: The file '{source_filename}' was not found.")
```

except IOError as e:

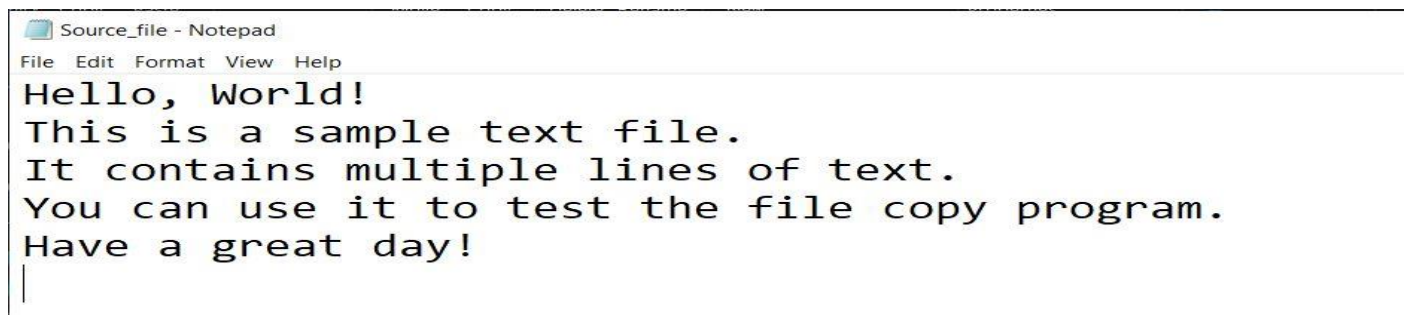
```
print(f"An I/O error occurred: {e}")
```

except Exception as e:

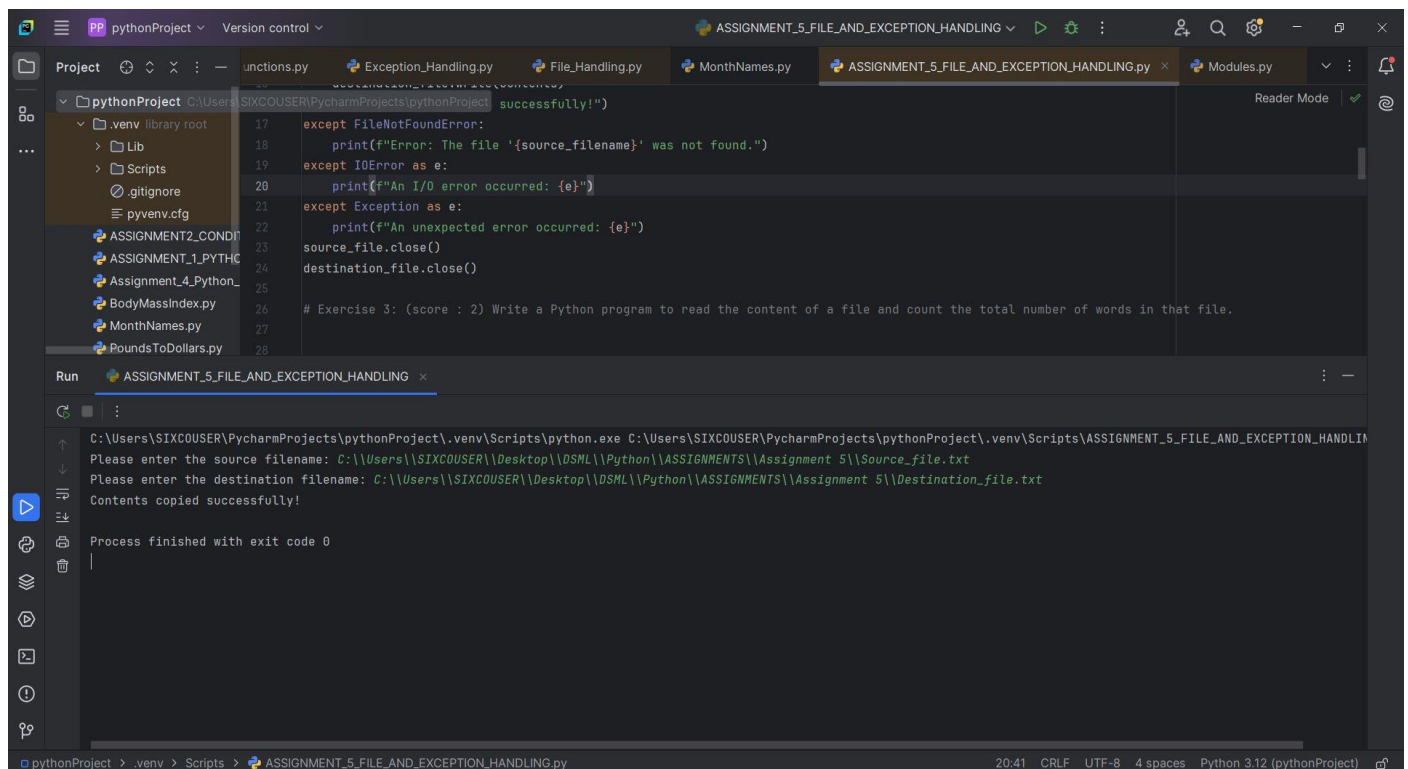
```
print(f"An unexpected error occurred: {e}")
```

```
source_file.close()
```

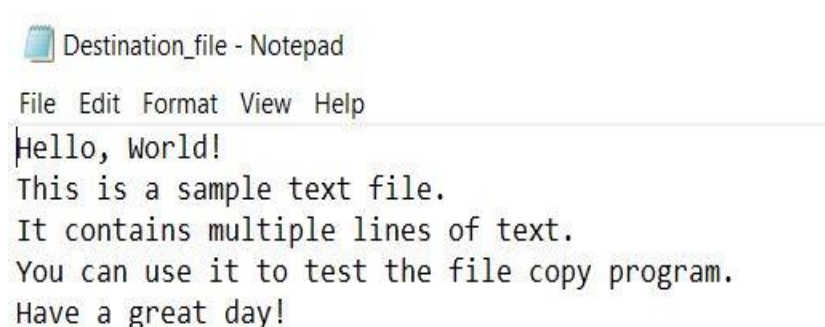
```
destination_file.close()
```



```
Source_file - Notepad
File Edit Format View Help
Hello, World!
This is a sample text file.
It contains multiple lines of text.
You can use it to test the file copy program.
Have a great day!
```



```
pythonProject Version control
ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING
Project Exception_Handling.py File_Handling.py MonthNames.py ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py Modules.py
pythonProject C:\Users\SIXCOUSER\PycharmProjects\pythonProject
venv library root
Lib
Scripts
.gitignore
pyvenv.cfg
ASSIGNMENT2_CONDITIONAL.py
ASSIGNMENT1_PYTHON.py
Assignment_4_Python.py
BodyMassIndex.py
MonthNames.py
PoundsToDollars.py
17 successfully!")
18 except FileNotFoundError:
19     print(f"Error: The file '{source_filename}' was not found.")
20 except IOError as e:
21     print(f"An I/O error occurred: {e}")
22 except Exception as e:
23     print(f"An unexpected error occurred: {e}")
24 source_file.close()
25 destination_file.close()
26 # Exercise 3: (score : 2) Write a Python program to read the content of a file and count the total number of words in that file.
27
28
Run ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py
Please enter the source filename: C:\Users\SIXCOUSER\Desktop\DSML\Python\ASSIGNMENTS\Assignment 5\Source_file.txt
Please enter the destination filename: C:\Users\SIXCOUSER\Desktop\DSML\Python\ASSIGNMENTS\Assignment 5\Destination_file.txt
Contents copied successfully!
Process finished with exit code 0
pythonProject .venv Scripts ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py 20:41 CRLF UTF-8 4 spaces Python 3.12 (pythonProject)
```



```
Destination_file - Notepad
File Edit Format View Help
Hello, World!
This is a sample text file.
It contains multiple lines of text.
You can use it to test the file copy program.
Have a great day!
```

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

```
filename = input("Please enter the filename to read: ")
try:
    file = open(filename, 'r')
    content = file.read()
    print(content)
    words = content.split()
    word_count = len(words)

    print(f"The total number of words in the file is: {word_count}")

except FileNotFoundError:
    print(f"Error: The file '{filename}' was not found.")
except IOError as e:
    print(f"An I/O error occurred: {e}")
except Exception as e:
    print(f"An unexpected error occurred: {e}")
```

The screenshot shows the PyCharm IDE with a project named 'pythonProject'. The file 'ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py' is open in the editor. The code in the editor is as follows:

```
23 # source_file.close()
24 # destination_file.close()
25
26 # Exercise 3: (score : 2) Write a Python program to read the content of a file and count the total number of words in that file.
27
28 filename = input("Please enter the filename to read: ")
29
30 try:
31     # Open the file in read mode
32     file = open(filename, 'r')
33     content = file.read()
34     print(content)
35     words = content.split()
```

The Run window shows the following output:

```
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py
Please enter the filename to read: C:\Users\SIXCOUSER\Desktop\DSML\Python\ASSIGNMENTS\Assignment 5\sample.txt
Hello, World!
This is an example file.
It contains multiple lines of text.
Python is a great programming language!
Feel free to modify this content as needed.

The total number of words in the file is: 27

Process finished with exit code 0
```

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.

```
user_input = input("Please enter a number: ")

print("Type of string before converting: ",type(user_input))

try:

    converted_to_integer = int(user_input)

    print(f"The converted integer is: {converted_to_integer}")

    print("Type of string after converting: ",type(converted_to_integer))

except ValueError:

    print("Error: The input is not a valid integer.")
```

The screenshot shows the PyCharm IDE with the file `ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py` open. The code is as follows:

```
10 # Exercise 4: (score : 1) Write a Python program that prompts the user to input a string and converts it to an integer.
11 # Use try-except blocks to handle any exceptions that might occur
12
13
14 user_input = input("Please enter a number: ")
15 print("Type of string before converting: ",type(user_input))
16
17 try:
18     converted_to_integer = int(user_input)
19     print(f"The converted integer is: {converted_to_integer}")
20     print("Type of string after converting: ",type(converted_to_integer))
21 except ValueError:
22     print("Error: The input is not a valid integer.")
```

The Run console shows the output of the program:

```
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py
Please enter a number: 12345
Type of string before converting: <class 'str'>
The converted integer is: 12345
Type of string after converting: <class 'int'>
Process finished with exit code 0
```

The screenshot shows the PyCharm IDE with the same file `ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py` open. The code is identical to the previous screenshot.

The Run console shows the output of the program when an invalid input is provided:

```
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py
Please enter a number: fgtr12344
Type of string before converting: <class 'str'>
Error: The input is not a valid integer.
Process finished with exit code 0
```


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.

```
user_input = input("Please enter a list of integers separated by spaces: ")
```

```
try:
```

```
    integer_list = [int(num) for num in user_input.split()]
```

```
    for num in integer_list:
```

```
        if num < 0:
```

```
            raise ValueError(f"Negative integer found: {num}")
```

```
    print("All integers are non-negative.")
```

```
except ValueError as e:
```

```
    print(f"Error: {e}")e
```

```
38 print("All integers are non-negative.")
39 except ValueError as e:
40     print(f"Error: {e}")
41
42
43 # Exercise 6: (score : 2) Write a Python program that prompts the user to input a list of integers and computes the average of those integers.
44 # Use try-except blocks to handle any exceptions that might occur.
45 # use the finally clause to print a message indicating that the program has finished running.
46
47 # user_input = input("Please enter a list of integers separated by spaces: ")
48 #
49 # try:
```

```
Run C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py
Please enter a list of integers separated by spaces: 1 2 3 -4 5
Error: Negative integer found: -4

Process finished with exit code 0
```

```
38 print("All integers are non-negative.")
39 except ValueError as e:
40     print(f"Error: {e}")
41
42
43 # Exercise 6: (score : 2) Write a Python program that prompts the user to input a list of integers and computes the average of those integers.
44 # Use try-except blocks to handle any exceptions that might occur.
45 # use the finally clause to print a message indicating that the program has finished running.
46
47 # user_input = input("Please enter a list of integers separated by spaces: ")
48 #
49 # try:
```

```
Run C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py
Please enter a list of integers separated by spaces: 1 2 3 4 5
All integers are non-negative.

Process finished with exit code 0
```

The screenshot displays the PyCharm IDE interface. The top toolbar includes icons for file operations, version control, and running. The main editor window shows a Python file named `ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py`. The code is as follows:

```

44 # Use try-except blocks to handle any exceptions that might occur.
45 # use the finally clause to print a message indicating that the program has finished running.
46
47 user_input = input("Please enter a list of integers separated by spaces: ")
48
49 try:
50     integer_list = [int(num) for num in user_input.split()]
51     average = sum(integer_list) / len(integer_list)
52     print(f"The average of the entered integers is: {average}")
53
54 except ValueError as e:
55     print(f"Error: {e}")

```

The left sidebar shows the project structure, including `.venv`, `Lib`, `Scripts`, `.gitignore`, and `pyvenv.cfg`. The bottom pane shows the output of the program:

```

C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py
Please enter a list of integers separated by spaces: 1 2 3 4 5 6 7
The average of the entered integers is: 4.0
Program has finished running.

Process finished with exit code 0

```

pythonProject Version control ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING

Project pythonProject C:\Users\SIXCOUSER\PycharmProjects\pythonProject

```
43 # Exercise 6: (score : 2) Write a Python program that prompts the user to input a list of integers and computes the average of t...
44 # Use try-except blocks to handle any exceptions that might occur.
45 # use the finally clause to print a message indicating that the program has finished running.
46
47 user_input = input("Please enter a list of integers separated by spaces: ")
48
49 try:
50     integer_list = [int(num) for num in user_input.split()]
51     average = sum(integer_list) / len(integer_list)
52     print(f"The average of the entered integers is: {average}")
53
54 except ValueError as e:
55     print(f"Error: {e}")
```

Run ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING

C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING

Please enter a list of integers separated by spaces:

Error: Cannot calculate the average of an empty list.

Program has finished running.

Process finished with exit code 0

pythonProject > .venv > Scripts > ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py 51:52 CRLF UTF-8 4 spaces Python 3.12 (pythonProject)

pythonProject Version control ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING

Project pythonProject C:\Users\SIXCOUSER\PycharmProjects\pythonProject

```
77 to print a message indicating that the program has finished running.
78
79 user_input = input("Please enter a list of integers separated by spaces: ")
80
81 try:
82     integer_list = [int(num) for num in user_input.split()]
83     average = sum(integer_list) / len(integer_list)
84     print(f"The average of the entered integers is: {average}")
85
86 except ValueError as e:
87     print(f"Error: {e}")
88 except ZeroDivisionError:
89     print("Error: Cannot calculate the average of an empty list.")
```

Run ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING

C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING

Please enter a list of integers separated by spaces: 1 2 a b c

Error: invalid literal for int() with base 10: 'a'

Program has finished running.

Process finished with exit code 0

pythonProject > .venv > Scripts > ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py 83:64 CRLF UTF-8 4 spaces Python 3.12 (pythonProject)

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.

```
filename = input("Please enter the filename to write to: ")  
content = "Hello, This is a sample string written to the file."
```

try:

```
    with open(filename, 'w') as file:
```

```
        file.write(content)
```

```
    print("Welcome! The string has been successfully written to the file.")
```

except Exception as e:

```
    print(f"An error occurred: {e}")
```

The screenshot shows the PyCharm IDE with a project named 'pythonProject'. The file 'ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py' is open, displaying the following code:

```
61 # Use try-except blocks to handle any exceptions that might occur and print a welcome message if there is no exception occurred.  
62  
63 filename = input("Please enter the filename to write to: ")  
64 content = "Hello, This is a sample string written to the file."  
65  
66 try:  
67     with open(filename, 'w') as file:  
68         file.write(content)  
69     print("Welcome! The string has been successfully written to the file.")  
70 except Exception as e:  
71     print(f"An error occurred: {e}")  
72  
73
```

The Run console shows the execution output:

```
C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\python.exe C:\Users\SIXCOUSER\PycharmProjects\pythonProject\.venv\Scripts\ASSIGNMENT_5_FILE_AND_EXCEPTION_HANDLING.py  
Please enter the filename to write to: sample.txt  
Welcome! The string has been successfully written to the file.  
Process finished with exit code 0
```

The screenshot shows a Notepad window titled 'sample - Notepad'. The text inside the window is:

```
File Edit Format View Help  
Hello, This is a sample string written to the file.
```