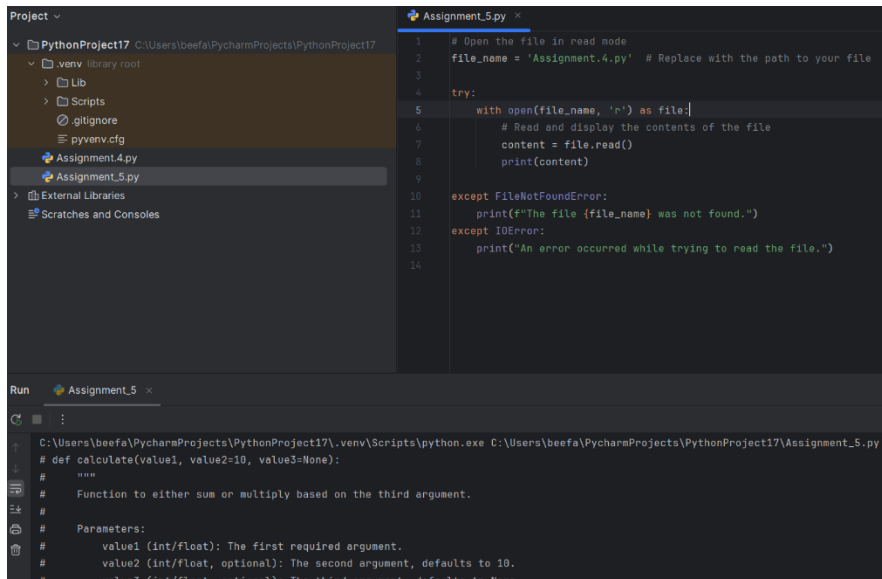


## Exercise 1

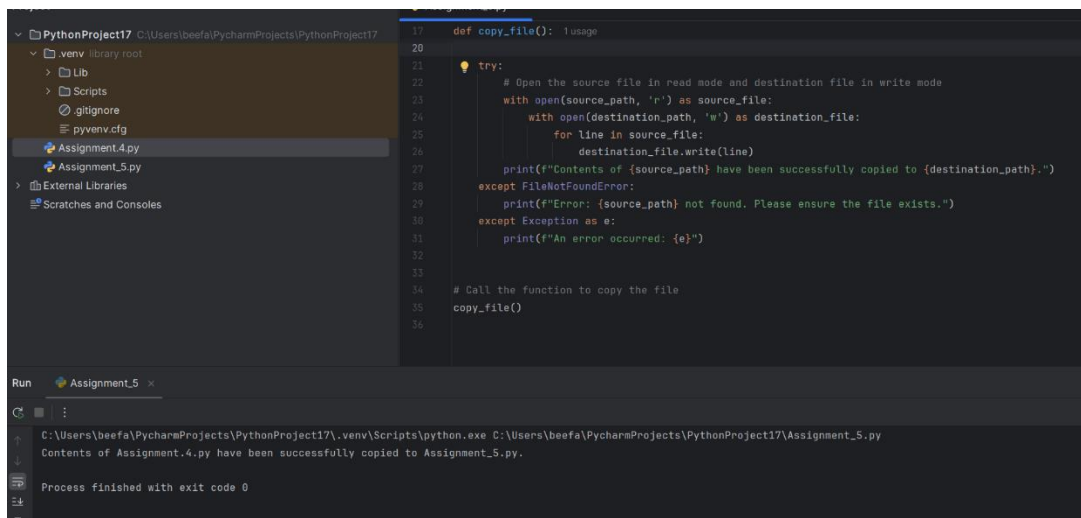


The screenshot shows the PyCharm IDE with a project named 'PythonProject17'. The file explorer on the left shows the project structure, including a '.venv' directory and files like 'Assignment\_4.py' and 'Assignment\_5.py'. The main editor displays the code for 'Assignment\_5.py', which is a Python script that reads the contents of 'Assignment\_4.py' and prints them. The code includes error handling for 'FileNotFoundError' and 'IOError'.

```
1 # Open the file in read mode
2 file_name = 'Assignment_4.py' # Replace with the path to your file
3
4 try:
5     with open(file_name, 'r') as file:
6         # Read and display the contents of the file
7         content = file.read()
8         print(content)
9
10 except FileNotFoundError:
11     print(f"The file {file_name} was not found.")
12 except IOError:
13     print("An error occurred while trying to read the file.")
14
```

The Run window at the bottom shows the execution of 'Assignment\_5.py' using the Python interpreter in the '.venv' directory. The output shows the contents of 'Assignment\_4.py' being printed.

## Exercise 2

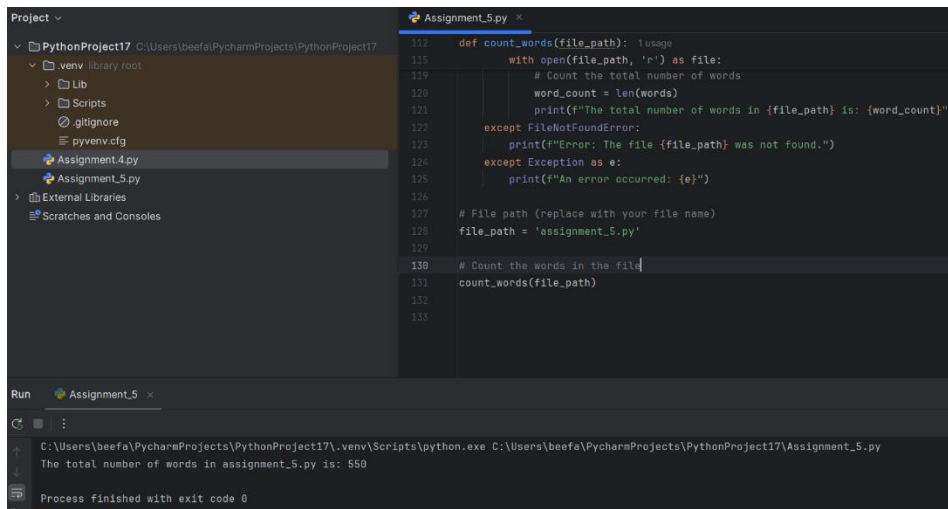


The screenshot shows the PyCharm IDE with the same project structure as before. The main editor displays the code for 'Assignment\_5.py', which is a Python script that copies the contents of 'Assignment\_4.py' to 'Assignment\_5.py'. The code includes error handling for 'FileNotFoundError' and 'Exception'.

```
17 def copy_file():
18     # Open the source file in read mode and destination file in write mode
19     try:
20         with open(source_path, 'r') as source_file:
21             with open(destination_path, 'w') as destination_file:
22                 for line in source_file:
23                     destination_file.write(line)
24             print(f"Contents of {source_path} have been successfully copied to {destination_path}.")
25     except FileNotFoundError:
26         print(f"Error: {source_path} not found. Please ensure the file exists.")
27     except Exception as e:
28         print(f"An error occurred: {e}")
29
30 # Call the function to copy the file
31 copy_file()
32
```

The Run window at the bottom shows the execution of 'Assignment\_5.py' using the Python interpreter in the '.venv' directory. The output shows the message 'Contents of Assignment\_4.py have been successfully copied to Assignment\_5.py.' and 'Process finished with exit code 0'.

### Exercise 3

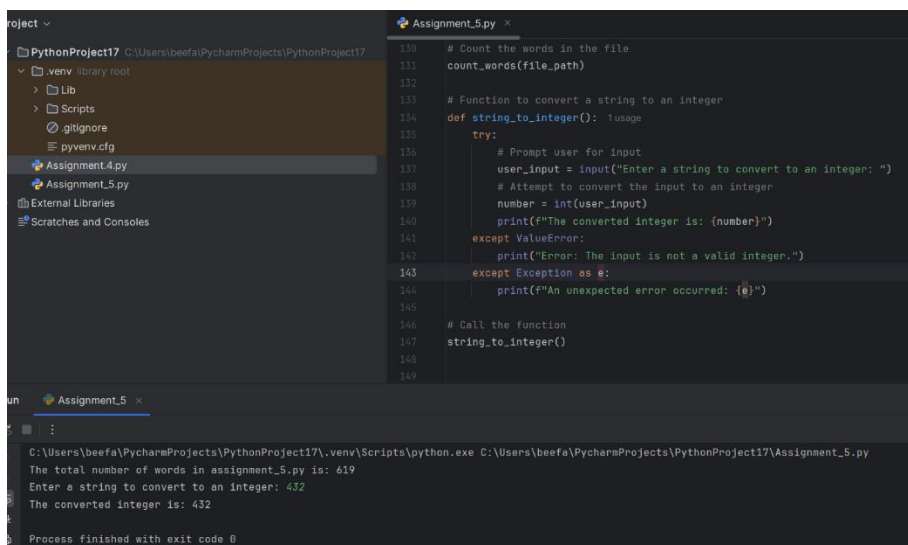


```
Project
└─ PythonProject17 C:\Users\beefa\PycharmProjects\PythonProject17
   └─ .venv library root
      ├── Lib
      ├── Scripts
      ├── .gitignore
      ├── pyvenv.cfg
      ├── Assignment_4.py
      └── Assignment_5.py
External Libraries
Scratches and Consoles

Assignment_5.py
112 def count_words(file_path):
113     """usage
114     """
115     with open(file_path, 'r') as file:
116         # Count the total number of words
117         word_count = len(words)
118         print(f"The total number of words in {file_path} is: {word_count}")
119     except FileNotFoundError:
120         print(f"Error: The file {file_path} was not found.")
121     except Exception as e:
122         print(f"An error occurred: {e}")
123
124 # File path (replace with your file name)
125 file_path = 'assignment_5.py'
126
127 # Count the words in the file
128 count_words(file_path)
129
130
131
132
133

Run
Assignment_5
C:\Users\beefa\PycharmProjects\PythonProject17\.venv\Scripts\python.exe C:\Users\beefa\PycharmProjects\PythonProject17\Assignment_5.py
The total number of words in assignment_5.py is: 550
Process finished with exit code 0
```

### Exercise 4



```
Project
└─ PythonProject17 C:\Users\beefa\PycharmProjects\PythonProject17
   └─ .venv library root
      ├── Lib
      ├── Scripts
      ├── .gitignore
      ├── pyvenv.cfg
      ├── Assignment_4.py
      └── Assignment_5.py
External Libraries
Scratches and Consoles

Assignment_5.py
130 # Count the words in the file
131 count_words(file_path)
132
133 # Function to convert a string to an integer
134 def string_to_integer():
135     """usage
136     """
137     try:
138         # Prompt user for input
139         user_input = input("Enter a string to convert to an integer: ")
140         # Attempt to convert the input to an integer
141         number = int(user_input)
142         print(f"The converted integer is: {number}")
143     except ValueError:
144         print("Error: The input is not a valid integer.")
145     except Exception as e:
146         print(f"An unexpected error occurred: {e}")
147
148 # Call the function
149 string_to_integer()
150
151
152
153
154

Run
Assignment_5
C:\Users\beefa\PycharmProjects\PythonProject17\.venv\Scripts\python.exe C:\Users\beefa\PycharmProjects\PythonProject17\Assignment_5.py
The total number of words in assignment_5.py is: 619
Enter a string to convert to an integer: 432
The converted integer is: 432
Process finished with exit code 0
```

The screenshot shows the PyCharm IDE interface. On the left, the Project view displays the file structure of 'PythonProject17', including a virtual environment and source files. The main editor shows 'Assignment\_5.py' with the following code:

```
130 # Count the words in the file
131 count_words(file_path)
132
133 # Function to convert a string to an integer
134 def string_to_integer(): 1usage
135     try:
136         # Prompt user for input
137         user_input = input("Enter a string to convert to an integer: ")
138         # Attempt to convert the input to an integer
139         number = int(user_input)
140         print(f"The converted integer is: {number}")
141     except ValueError:
142         print("Error: The input is not a valid integer.")
143     except Exception as e:
144         print(f"An unexpected error occurred: {e}")
145
146 # Call the function
147 string_to_integer()
148
149
```

The Run window at the bottom shows the execution output:

```
C:\Users\beefa\PycharmProjects\PythonProject17\.venv\Scripts\python.exe C:\Users\beefa\PycharmProjects\PythonProject17\Assignment_5.py
The total number of words in assignment_5.py is: 619
Enter a string to convert to an integer: Hello
Error: The input is not a valid integer.
Process finished with exit code 0
```

## Exercise 5

The screenshot shows the PyCharm IDE interface for Exercise 5. The main editor shows 'Assignment\_5.py' with the following code:

```
143 # except Exception as e:
144 #     print(f"An unexpected error occurred: {e}")
145 #
146 # # Call the function
147 # string_to_integer()
148 # Function to check for negative integers in a list
149 def check_for_negatives(): 1usage
150     try:
151         # Prompt the user to input a list of integers (comma-separated)
152         user_input = input("Enter a list of integers, separated by commas: ")
153
154         # Convert the input into a list of integers
155         numbers = [int(x.strip()) for x in user_input.split(",")]
156
157         # Check for negative integers
158         for number in numbers:
159             if number < 0:
160                 raise ValueError(f"Negative integer found: {number}")
161
162     print("All integers are non-negative!")
```

The Run window at the bottom shows the execution output:

```
C:\Users\beefa\PycharmProjects\PythonProject17\.venv\Scripts\python.exe C:\Users\beefa\PycharmProjects\PythonProject17\Assignment_5.py
The total number of words in assignment_5.py is: 745
Enter a list of integers, separated by commas: 143, 564
All integers are non-negative!
Process finished with exit code 0
```

The screenshot shows the PyCharm IDE with a project named 'PythonProject17'. The file explorer on the left shows the project structure, including a 'venv' directory and files like 'Assignment\_4.py' and 'Assignment\_5.py'. The main editor displays the code for 'Assignment\_5.py', which includes a function 'check\_for\_negatives()' that prompts the user for a list of integers, converts them to a list, and checks for negative values. The console output shows the program running, displaying the total number of words in the file (745) and the user input '-235, 654'. An error message 'Error: Negative integer found: -235' is displayed, indicating a 'ValueError' was raised. The process finished with exit code 0.

```
143 # except Exception as e:
144 #     print(f"An unexpected error occurred: {e}")
145 #
146 # # Call the function
147 # string_to_integer()
148 # Function to check for negative integers in a list
149 def check_for_negatives(): 1usage
150
151     try:
152         # Prompt the user to input a list of integers (comma-separated)
153         user_input = input("Enter a list of integers, separated by commas: ")
154
155         # Convert the input into a list of integers
156         numbers = [int(x.strip()) for x in user_input.split(",")]
157
158         # Check for negative integers
159         for number in numbers:
160             if number < 0:
161                 raise ValueError(f"Negative integer found: {number}")
162
163     print("All integers are non-negative!")
```

Assignment\_5

C:\Users\beefa\PycharmProjects\PythonProject17\.venv\Scripts\python.exe C:\Users\beefa\PycharmProjects\PythonProject17\Assignment\_5.py

The total number of words in assignment\_5.py is: 745

Enter a list of integers, separated by commas: -235, 654

Error: Negative integer found: -235

Process finished with exit code 0

## Exercise 6

The screenshot shows the PyCharm IDE with the same project. The file explorer shows 'Assignment\_5.py' selected. The main editor displays the code for 'Assignment\_5.py', which includes a function 'compute\_average()' that prompts the user for a list of integers, converts them to a list, and calculates the average. The console output shows the program running, displaying the total number of words in the file (895) and the user input '1234, 7654, 4532, 76544'. The average of the integers is calculated as 22491.0. The program execution has completed, and the process finished with exit code 0.

```
175 def compute_average(): 1usage
176     raise ValueError("The list is empty. Cannot compute the average.")
177
178     average = sum(numbers) / len(numbers)
179     print(f"The average of the integers is: {average}")
180
181 except ValueError as e:
182     # Handle invalid input or empty list
183     print(f"Error: {e}")
184
185 except Exception as e:
186     # Handle any unexpected exceptions
187     print(f"An unexpected error occurred: {e}")
188
189 finally:
190     # Message indicating the program has finished running
191     print("Program execution has completed.")
192
193
194 # Call the function
195 compute_average()
196
197
```

Assignment\_5

C:\Users\beefa\PycharmProjects\PythonProject17\.venv\Scripts\python.exe C:\Users\beefa\PycharmProjects\PythonProject17\Assignment\_5.py

The total number of words in assignment\_5.py is: 895

Enter a list of integers, separated by commas: 1234, 7654, 4532, 76544

The average of the integers is: 22491.0

Program execution has completed.

Process finished with exit code 0

The screenshot shows the PyCharm IDE with the file `Assignment_5.py` open. The code defines a function `compute_average()` that calculates the average of a list of integers. It includes error handling for `ValueError` (empty list) and `Exception` (invalid input). The function is called at the bottom of the file.

```
175 def compute_average(): 1usage
185     raise ValueError("The list is empty. Cannot compute the average.")
186
187     average = sum(numbers) / len(numbers)
188     print(f"The average of the integers is: {average}")
189 except ValueError as e:
190     # Handle invalid input or empty list
191     print(f"Error: {e}")
192 except Exception as e:
193     # Handle any unexpected exceptions
194     print(f"An unexpected error occurred: {e}")
195 finally:
196     # Message indicating the program has finished running
197     print("Program execution has completed.")
198
199
200 # Call the function
201 compute_average()
202
203
```

The Run console shows the following output:

```
C:\Users\beefa\PycharmProjects\PythonProject17\.venv\Scripts\python.exe C:\Users\beefa\PycharmProjects\PythonProject17\Assignment_5.py
The total number of words in assignment_5.py is: 895
Enter a list of integers, separated by commas: 12.43, 654.76, 63355
Error: invalid literal for int() with base 10: '12.43, 654.76'
Program execution has completed.
Process finished with exit code 0
```

## Exercise 6

The screenshot shows the PyCharm IDE with the file `Assignment_5.py` open. The code defines a function `compute_average()` that calculates the average of a list of integers. It includes error handling for `ValueError` (empty list) and `Exception` (invalid input). The function is called at the bottom of the file.

```
1 Hello, this is a test string written to the file..
```

The Run console shows the following output:

```
C:\Users\beefa\PycharmProjects\PythonProject17\.venv\Scripts\python.exe C:\Users\beefa\PycharmProjects\PythonProject17\Assignment_5.py
The total number of words in assignment_5.py is: 1059
Enter the filename: Assignment_5.py
The string has been successfully written to the file.
Program execution has completed.
Process finished with exit code 0
```