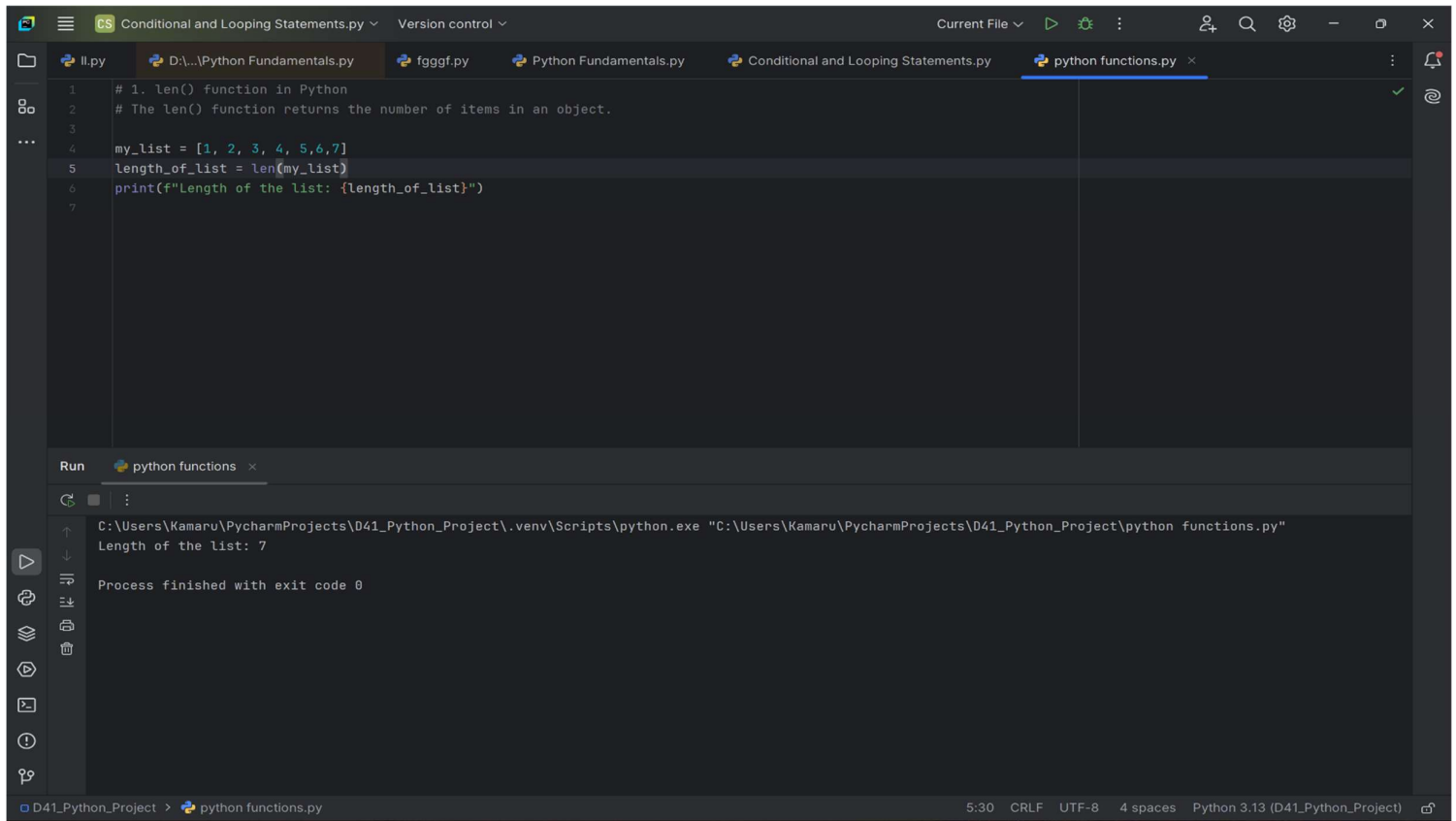


1. LEN FUNCTION IN PYTHON



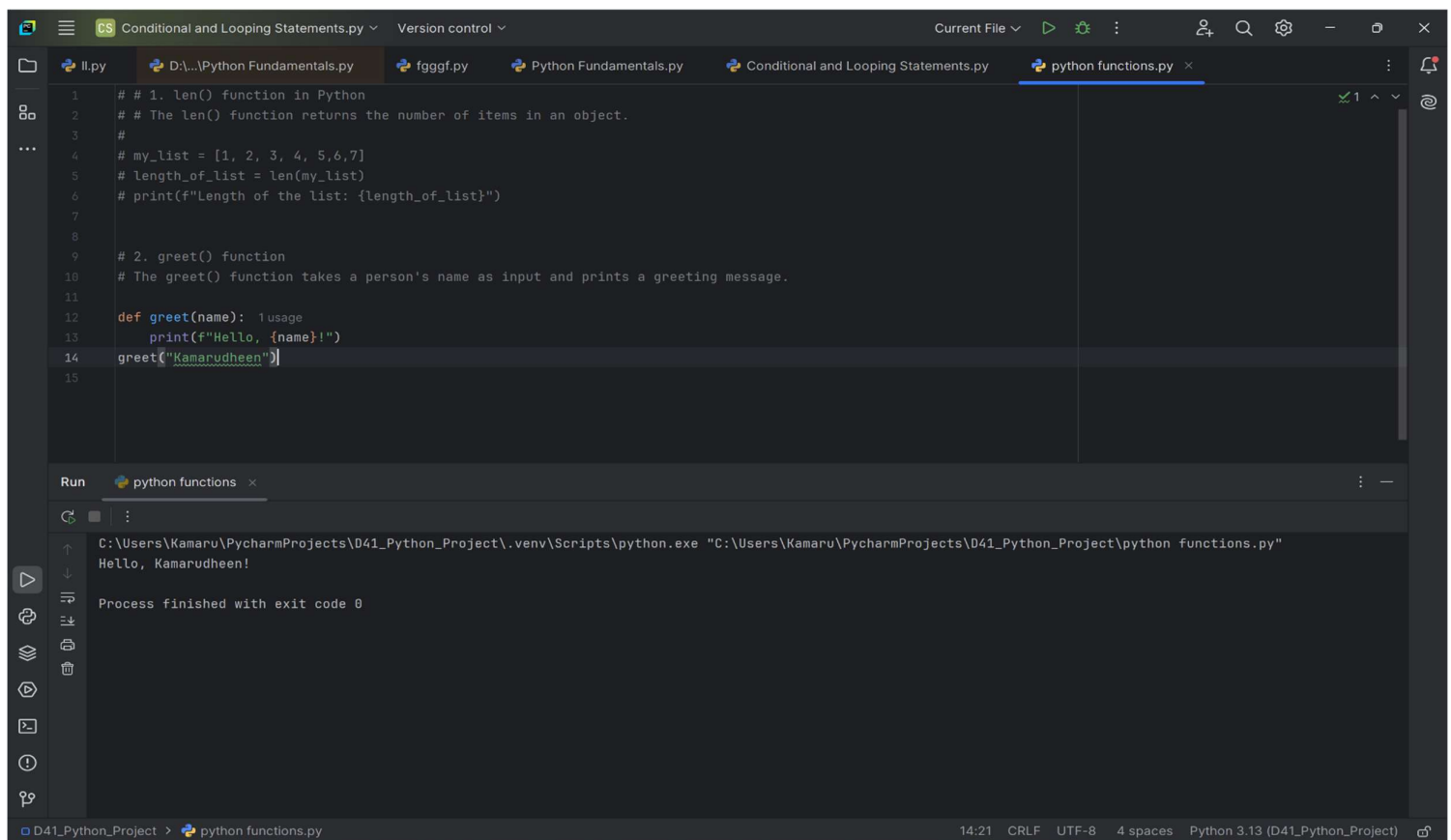
The screenshot shows the PyCharm IDE with a file named `python functions.py` open. The code defines a list `my_list` and uses the `len()` function to find its length. The output in the Run console is "Length of the list: 7".

```
1 # 1. len() function in Python
2 # The len() function returns the number of items in an object.
3
4 my_list = [1, 2, 3, 4, 5, 6, 7]
5 length_of_list = len(my_list)
6 print(f"Length of the list: {length_of_list}")
7
```

Run console output:

```
C:\Users\Kamaru\PycharmProjects\D41_Python_Project\.venv\Scripts\python.exe "C:\Users\Kamaru\PycharmProjects\D41_Python_Project\python functions.py"
Length of the list: 7
Process finished with exit code 0
```

2. GREET FUNCTION



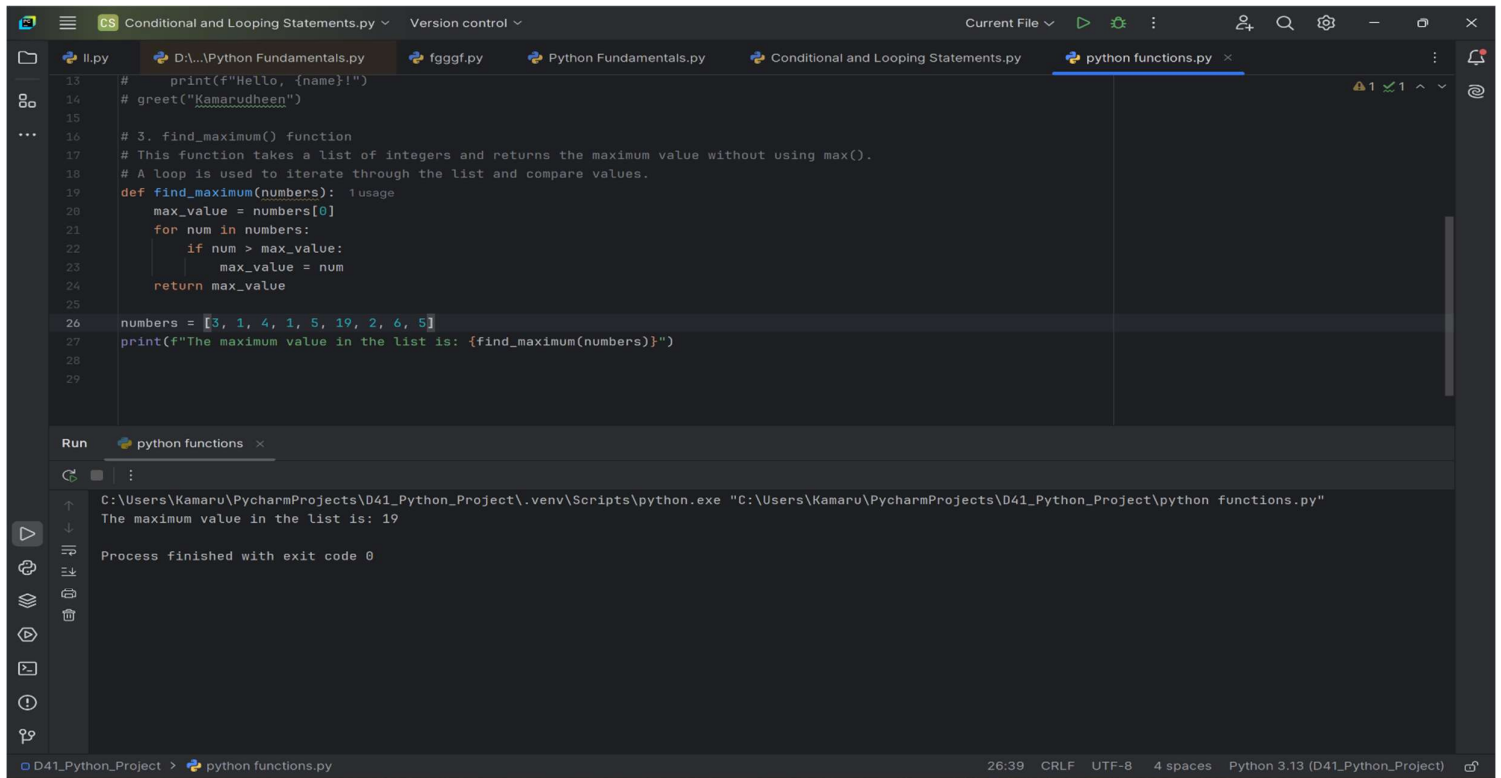
The screenshot shows the PyCharm IDE with the same file `python functions.py`. The code now includes a `greet()` function that takes a name as input and prints a greeting. The output in the Run console is "Hello, Kamarudheen!".

```
1 # 1. len() function in Python
2 # The len() function returns the number of items in an object.
3 #
4 # my_list = [1, 2, 3, 4, 5, 6, 7]
5 # length_of_list = len(my_list)
6 # print(f"Length of the list: {length_of_list}")
7
8
9 # 2. greet() function
10 # The greet() function takes a person's name as input and prints a greeting message.
11
12 def greet(name):
13     print(f"Hello, {name}!")
14 greet("Kamarudheen")
15
```

Run console output:

```
C:\Users\Kamaru\PycharmProjects\D41_Python_Project\.venv\Scripts\python.exe "C:\Users\Kamaru\PycharmProjects\D41_Python_Project\python functions.py"
Hello, Kamarudheen!
Process finished with exit code 0
```

3. MAXIMUM () FUNCTION



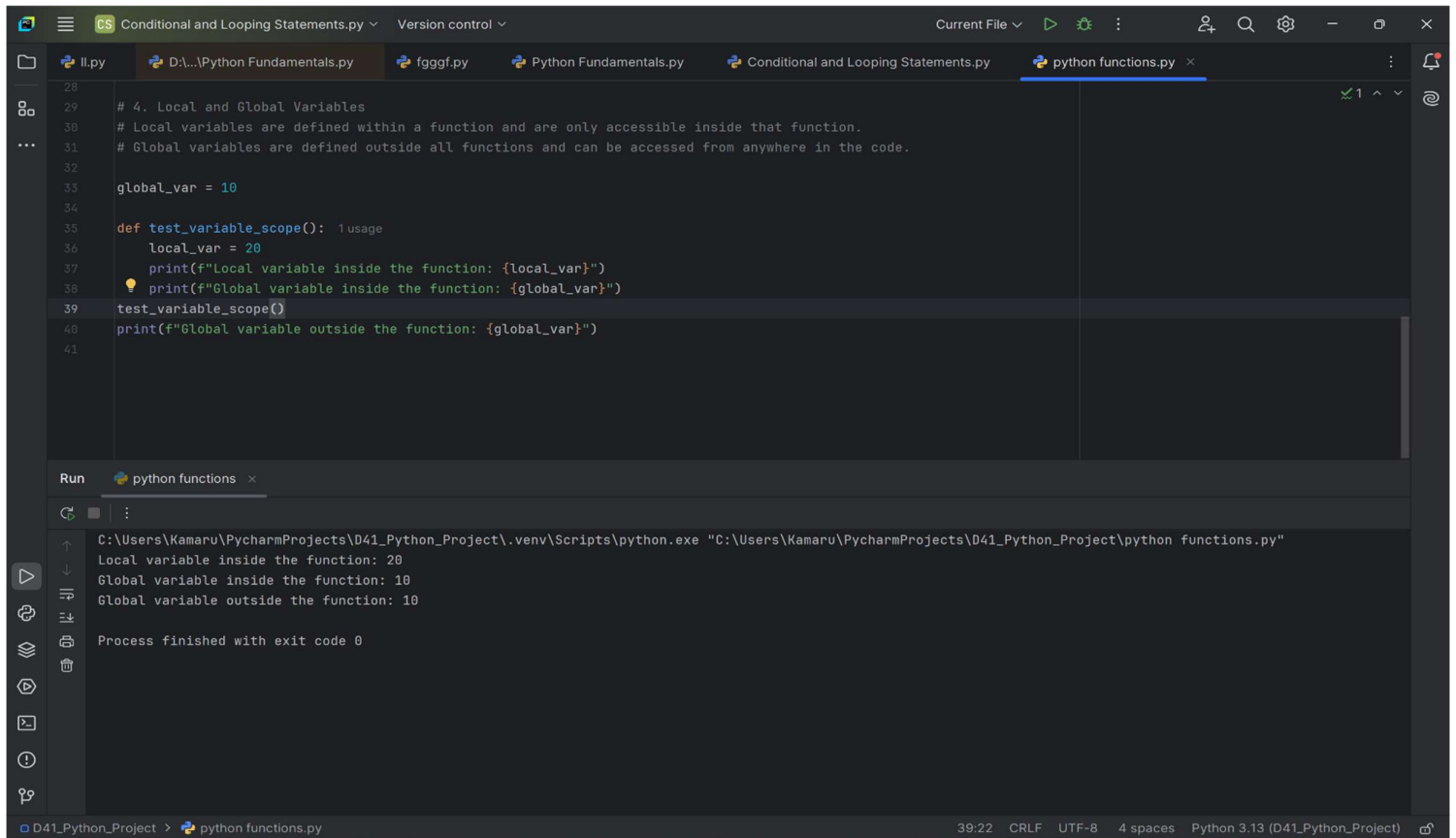
The screenshot shows the PyCharm IDE with a file named `python functions.py` open. The code defines a `find_maximum` function that iterates through a list of numbers to find the maximum value without using the `max()` function. The function is called with a list of numbers, and the result is printed. The Run console shows the output: "The maximum value in the list is: 19".

```
13 # print(f"Hello, {name}!")
14 # greet("Kamarudheen")
15
16 # 3. find_maximum() function
17 # This function takes a list of integers and returns the maximum value without using max().
18 # A loop is used to iterate through the list and compare values.
19 def find_maximum(numbers): 1 usage
20     max_value = numbers[0]
21     for num in numbers:
22         if num > max_value:
23             max_value = num
24     return max_value
25
26 numbers = [3, 1, 4, 1, 5, 19, 2, 6, 5]
27 print(f"The maximum value in the list is: {find_maximum(numbers)}")
28
29
```

Run console output:

```
C:\Users\Kamaru\PycharmProjects\D41_Python_Project\.venv\Scripts\python.exe "C:\Users\Kamaru\PycharmProjects\D41_Python_Project\python functions.py"
The maximum value in the list is: 19
Process finished with exit code 0
```

4.LOCAL AND GLOBAL VARIABLES



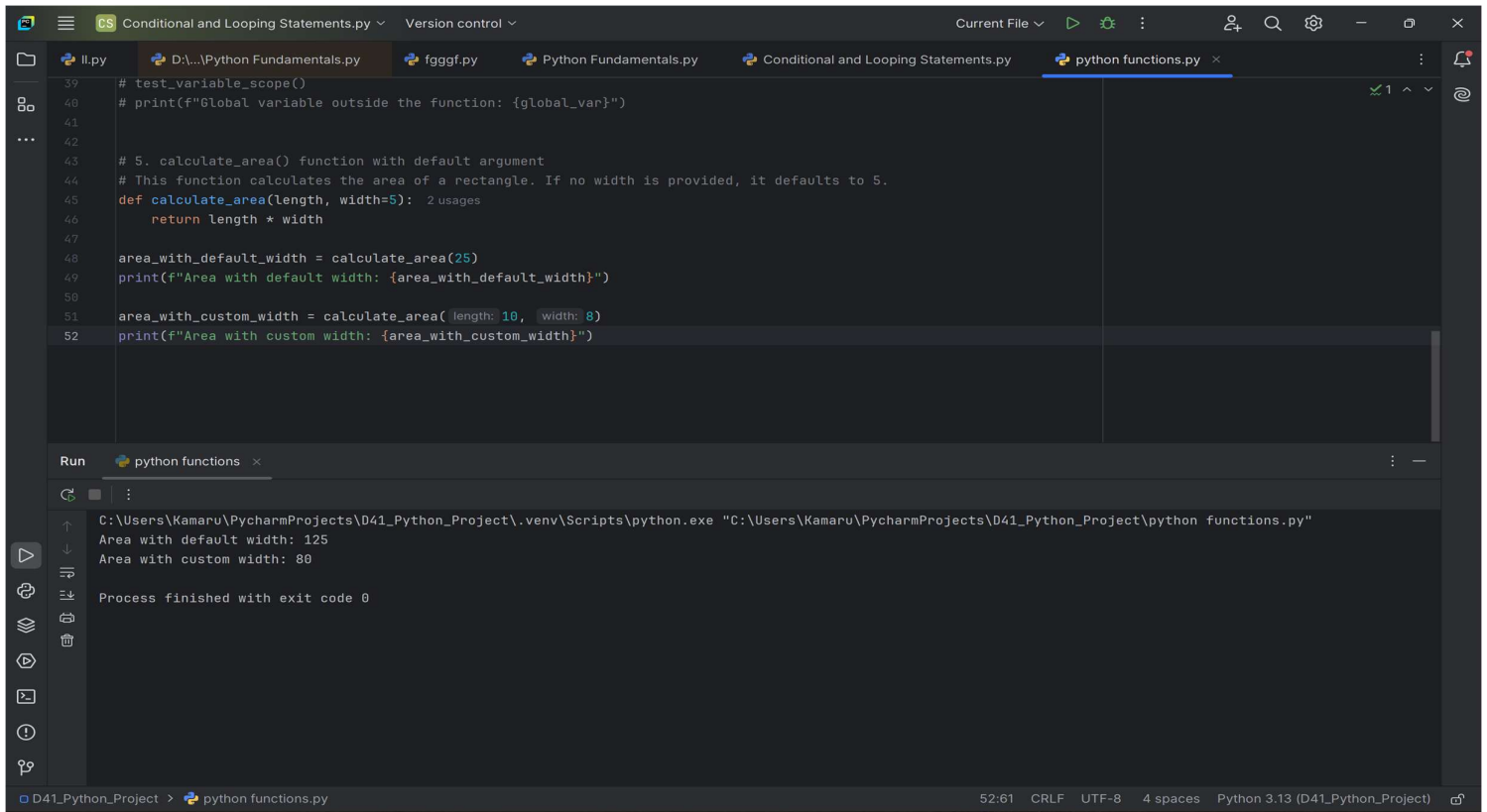
The screenshot shows the PyCharm IDE with a file named `python functions.py` open. The code demonstrates the scope of variables by defining a global variable and a function that uses both local and global variables. The function is called, and the results are printed. The Run console shows the output: "Local variable inside the function: 20", "Global variable inside the function: 10", and "Global variable outside the function: 10".

```
28 # 4. Local and Global Variables
29 # Local variables are defined within a function and are only accessible inside that function.
30 # Global variables are defined outside all functions and can be accessed from anywhere in the code.
31
32 global_var = 10
33
34 def test_variable_scope(): 1 usage
35     local_var = 20
36     print(f"Local variable inside the function: {local_var}")
37     print(f"Global variable inside the function: {global_var}")
38
39 test_variable_scope()
40 print(f"Global variable outside the function: {global_var}")
41
```

Run console output:

```
C:\Users\Kamaru\PycharmProjects\D41_Python_Project\.venv\Scripts\python.exe "C:\Users\Kamaru\PycharmProjects\D41_Python_Project\python functions.py"
Local variable inside the function: 20
Global variable inside the function: 10
Global variable outside the function: 10
Process finished with exit code 0
```

5.CALCULATE AREA () FUNCTION



The screenshot displays the PyCharm IDE interface. The top toolbar includes icons for file operations, search, and running code. The editor window shows a Python file named 'python functions.py' with the following code:

```
39 # test_variable_scope()
40 # print(f"Global variable outside the function: {global_var}")
41
42
43 # 5. calculate_area() function with default argument
44 # This function calculates the area of a rectangle. If no width is provided, it defaults to 5.
45 def calculate_area(length, width=5): 2 usages
46     return length * width
47
48 area_with_default_width = calculate_area(25)
49 print(f"Area with default width: {area_with_default_width}")
50
51 area_with_custom_width = calculate_area( length= 10, width= 8)
52 print(f"Area with custom width: {area_with_custom_width}")
```

Below the editor, the 'Run' panel shows the execution command and output:

```
C:\Users\Kamaru\PycharmProjects\D41_Python_Project\.venv\Scripts\python.exe "C:\Users\Kamaru\PycharmProjects\D41_Python_Project\python functions.py"
Area with default width: 125
Area with custom width: 80
Process finished with exit code 0
```

The status bar at the bottom indicates the file path 'D41_Python_Project > python functions.py', line 52, column 61, and the Python version 'Python 3.13 (D41_Python_Project)'.

