



Abbottabad University of Science & Technology
Department of computer science
Session 2025

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Section : C
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Question 1

Write a function `hello_name` that takes a name as an argument and prints "Hello, !".

Answer

```
python.py > ...
1 def hello_name():
2     print('hello,!')
3 hello_name()
```

Output:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE
PS C:\Users\ik611\Documents> & C:/Users/ik611/AppData/Local/Programs/Python/Python38-32/python.py
hello,!
PS C:\Users\ik611\Documents>
```

Question 2

Write a function `calculate_area` that takes length and width as arguments and returns the area of a rectangle. The width should have a default value of 10.

Answer

```
1 def calculate_area(length, width=10):
2     return length * width
3 area1 = calculate_area(5)
4 print(area1)
```

Output:

```
PS C:\Users\ik611> & C:/Users/ik611/AppData/Local/Programs/Python/Python38-32/python.py
2 ex 2.py"
50
```

Question 3

Write a function `is_even` that returns `True` if a given number is even and `False` otherwise.

Answer

```
1 def is_even(number):  
2     return number % 2 == 0  
3 print(is_even(4))  
4 print(is_even(7))
```

Output

```
PS C:\Users\ik611> & C:/U  
True  
False  
PS C:\Users\ik611>
```

Question 4

Create a function that modifies a global variable inside a function using the `global` keyword

Answer

```
1 my_variable = 10  
2 def modify_global():  
3     global my_variable  
4     my_variable = 20  
5 print("Before:", my_variable)  
6 modify_global()  
7 print("After:", my_variable)
```

Output

```
on.py  
Before: 10  
After: 20  
PS C:\Users\ik611>
```

Question 5

Write a recursive function fibonacci(n) that returns the nth Fibonacci number

Answer

```
C: > Users > ik611 > q6 2.py > ...
1  def fibonacci(n):
2      if n <= 1:
3          return n
4      else:
5          return fibonacci(n-1) + fibonacci(n-2)
6      print(fibonacci(5))
7
```

Question 6

Write a lambda function to check if a number is even.

Answer

```
C: > Users > ik611 > q6 2.py > ...
1  is_even = lambda x: x % 2 == 0
2  print(is_even(4))
3  print(is_even(7))
```

output

```
PS C:\Users\ik611> & C:
True
False
PS C:\Users\ik611>
```

Question 7

Write a function operate that takes another function as an argument and applies it to two numbers.

Answer

```
C: > Users > ik611 > q6 2.py > operate
1  def operate(func, num1, num2):
2      return func(num1, num2)
3  add = lambda x, y: x + y
4  print(operate(add, 5, 3))
5  multiply = lambda x, y: x * y
6  print(operate(multiply, 5, 3))
7
```

output

```
PS C:\Users\ik611> & C:\Users\ik611>
8
15
PS C:\Users\ik611>
```

Question 8

Write a function multiply_all that accepts multiple arguments using *args and returns their product.

Answer

```
C: > Users > ik611 > q6 2.py > ...
1  def multiply_all(*args):
2      product = 1
3      for num in args:
4          product *= num
5      return product
6  print(multiply_all(2, 3, 4))
7  print(multiply_all(1, 5, 7, 2))
8  print(multiply_all(10))
9
```

output

```
PS C:\Users\ik611> & C:/Users/ik611/
24
70
10
PS C:\Users\ik611>
```

Question 9

Write a decorator `log_decorator` that prints "Function called" before executing the function

Answer

```
C: > Users > ik611 > q6 2.py > ...
1  def log_decorator(func):
2      def wrapper(*args, **kwargs):
3          print("Function called")
4          return func(*args, **kwargs)
5      return wrapper
6  @log_decorator
7  def greet(name):
8      print(f"Hello, {name}!")
9  greet("Alice")
10 |
```

output

```
PS C:\Users\ik611> & C:
Function called
Hello, Alice!
PS C:\Users\ik611>
```

