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**Topic 41 - Functions**

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**What**

A function in Python is a block of code that performs a specific task and can be reused as many times as needed by simply calling its name.

**Why**

Using functions saves you from repetitive coding and makes your code more organized and readable.

**How**

1. **Basic Code Without a Function**:
   * Consider adding two numbers and displaying the result without using a function:

python

Copy code

first\_number = 2

second\_number = 3

total = first\_number + second\_number

print(total) # Output: 5

1. **Creating a Function**:
   * We can make this code reusable by turning it into a function:

python

Copy code

def add\_numbers():

first\_number = 2

second\_number = 3

total = first\_number + second\_number

print(total)

* + Here:
    - def is the keyword used to define a function.
    - add\_numbers is the name of the function.
    - The function’s code is indented after the definition line.

1. **Calling a Function**:
   * To execute the code within a function, you must call it by its name followed by parentheses:

python

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add\_numbers() # Output: 5

1. **Order Matters**:
   * Remember that the function definition must appear in the code before the function call. If you try to call a function before defining it, Python will throw an error.

**Summary**

Functions allow you to define reusable code blocks that can be executed on demand, making your programs more efficient and organized.

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