**Day 3: Python Functions & Lambda Expressions - Mini Calculator Project (25/07/2025)**

### 📖 Introduction to Functions

In Python, a **function** is a reusable block of code that performs a specific task. It helps break programs into smaller, manageable pieces, promotes reusability, and makes code easier to read and maintain.

#### **Syntax:**

def function\_name(parameters):  
 # code block  
 return result

### 💡 Why Use Functions?

* Reusability
* Cleaner code
* Easy debugging
* Logical code structure

### 🎓 Creating Basic Functions

def add(a, b):  
 return a + b  
  
def subtract(a, b):  
 return a - b  
  
def multiply(a, b):  
 return a \* b  
  
def divide(a, b):  
 if b != 0:  
 return a / b  
 else:  
 return "Error: Division by zero"

These are **named functions** defined using the def keyword.

### 🏋️ Mini Calculator Project

def calculator():  
 print("Mini Calculator")  
 print("1. Add")  
 print("2. Subtract")  
 print("3. Multiply")  
 print("4. Divide")  
  
 choice = input("Enter your choice (1-4): ")  
   
 a = float(input("Enter first number: "))  
 b = float(input("Enter second number: "))  
  
 if choice == '1':  
 print("Result:", add(a, b))  
 elif choice == '2':  
 print("Result:", subtract(a, b))  
 elif choice == '3':  
 print("Result:", multiply(a, b))  
 elif choice == '4':  
 print("Result:", divide(a, b))  
 else:  
 print("Invalid choice")  
  
calculator()

### 🌐 Lambda (Anonymous) Functions

A **lambda function** is a small anonymous function defined using the lambda keyword. They are generally used for short operations where defining a full function is unnecessary.

#### **Syntax:**

lambda arguments: expression

#### **Examples:**

add = lambda a, b: a + b  
subtract = lambda a, b: a - b  
multiply = lambda a, b: a \* b  
divide = lambda a, b: a / b if b != 0 else "Error"  
  
print(add(10, 5)) # 15  
print(subtract(10, 5)) # 5

### 📊 Summary Checklist:

### 📝 Task Completed:

This marks the successful completion of Day 3 in your Python 60-day roadmap! You’re now comfortable working with Python functions, return values, arguments, and lambda expressions.

Next Up: **Day 4 - Logical Operators and Conditional Statements**