**Python Function Documentation**

In Python, a function is a block of reusable code that performs a specific task. Functions allow you to organize your code, make it more modular, and avoid redundancy by encapsulating functionality. They are defined using the def keyword, and you can pass parameters to a function, and it may return a value.

def greet(name):

"""

This function greets the person passed as a parameter.

"""

print(f"Hello, {name}!")

# Calling the function

greet("Alice")

In this example:

* greet is the function name.
* (name) is the parameter list. Functions can have multiple parameters separated by commas.
* The docstring (enclosed in triple quotes) provides a brief description of the function's purpose.

**In Python, functions can be categorized into several types based on their characteristics and how they are defined or used. Here are some common types of functions in Python:**

**Built-in Functions:**

* **These are functions that come pre-defined in Python and are available for use without the need for additional imports. Examples include print(), len(), sum(), and type().**

**Example-**

print("Hello, World!")

length = len([1, 2, 3, 4])

**User-Defined Functions:**

* **These are functions created by the programmer to perform specific tasks. They are defined using the def keyword.**

**Example-**

def greet(name):

print(f"Hello, {name}!")

greet("Alice")

**Anonymous Functions (Lambda Functions):**

* **These are small, unnamed functions defined using the lambda keyword. They are often used for short, simple operations.**

**Example-**

multiply = lambda x, y: x \* y

result = multiply(3, 4)

Python offers the following list functions:

* **sort()**: Sorts the list in ascending order.
* **type(list)**: It returns the class type of an object.
* **append()**: Adds a single element to a list.
* **extend()**: Adds multiple elements to a list.
* **index()**: Returns the first appearance of the specified value.
* **max(list)**: It returns an item from the list with max value.
* **min(list)**: It returns an item from the list with min value.
* **len(list)**: It gives the total length of the list.
* **list(seq)**: Converts a tuple into a list.
* **cmp(list1, list2)**: It compares elements of both lists list1 and list2.
* **filter(fun,list)**: filter the list using the Python function.