**Operators:**

* Operators in Python are used to test conditions and manipulate values.
* Python provides various operators for different operations, such as arithmetic, comparison, and logical operations.

**Expressions:**

* Most statements in Python contain expressions.
* An expression is a combination of values and operators, which, when evaluated, results in a single value.
* For example, **2 + 3** is an expression that evaluates to the value **5**.

**Comparing Objects of Different Types:**

* When two objects of different types are compared, they are typically not equal, except for specific cases.
* For example, when comparing a string (str) and an integer (int), they are not equal by default.
* However, numeric types like integers and floats can be equal when compared.

**Exception Handling:**

* The operators **<**, **<=**, **>**, and **>=** may raise a **TypeError** exception in specific situations.
* This can occur when:
  + The operands are of different types that cannot be directly compared.
  + There is no defined ordering for the objects being compared.

**Expressions and Operators:**

* Expressions consist of operators and operands. Operators provide functionality to expressions, and operands are the data used by operators.
* Basic operators such as addition, subtraction, multiplication, division, and more are used in mathematical calculations.
* Additional operators like **//**, **%**, **+**, **-**, and others serve specific purposes in calculations.

**Mathematical Functions:**

* Mathematical functions include **abs**, **int**, **float**, **complex**, **divmod**, **pow**, and others that perform specific mathematical operations.
* Examples illustrate how to use these functions with different data types (integers and floats).

**Comparison Operators:**

* Python provides comparison operators for comparing values, including **<**, **<=**, **>**, **>=**, **==**, **!=**, **is**, and **is not**.
* These operators return Boolean values (**True** or **False**) based on the comparison result.

**Assignment Operators:**

* Assignment operators like **-=**, **\*=**, **/=**, and **%=** are used to modify the value of a variable based on the value to the right of the assignment operator.