# Day 2 - Interview Questions

1. **What is the difference between '==' and 'is' when comparing variables in Python?**
   '==' is used to compare the values of two variables, whereas 'is' is used to compare the memory addresses of two objects. '==' checks if the content is the same, while 'is' checks if the objects themselves are the same.

2. **What is operator precedence in Python, and how does it affect expressions?**
   Operator precedence determines the order in which operators are evaluated in an expression. Operators with higher precedence are evaluated first. Python follows the standard operator precedence rules, like multiplication and division before addition and subtraction.

3. **Explain the purpose of the // operator in Python.**
   The // operator is used for floor division. It divides two numbers and returns the largest integer less than or equal to the result. For example, 7 // 3 equals 2.

4. **How can you use the 'in' and 'not in' operators to check for membership in Python?**
   The 'in' operator checks if a value is present in a sequence (e.g., a list, string, or tuple).
   The 'not in' operator checks if a value is not present in a sequence.

5. **What is a variable in Python, and how are variables defined?**
   A variable in Python is a name that refers to a value or object in memory. Variables are defined by assigning a value to a name using the assignment operator =.

6. **Explain the difference between mutable and immutable variables in Python.**
   Mutable variables can be changed or modified after creation. Lists and dictionaries are examples of mutable types.
   Immutable variables cannot be changed after creation. Integers, strings, and tuples are examples of immutable types.

7. **Are there constants in Python, and if so, how are they typically defined?**
   While Python doesn't have built-in constants like some other programming languages, constants are often represented in Python using uppercase variable names to indicate that their values should not be changed.

8. **Explain the difference between / and // operators in Python.**

/ performs standard division, resulting in a floating-point number.
// performs floor division, which rounds the result down to the nearest integer.

9. **Explain the use of the += operator in Python with an example.**
   The += operator is used for addition assignment. It adds the value on the right to the variable on the left and updates the variable with the result.

10. **What are logical operators in Python?**
    Logical operators in Python are used to perform logical operations on Boolean values. They include and, or, and not.