Overview

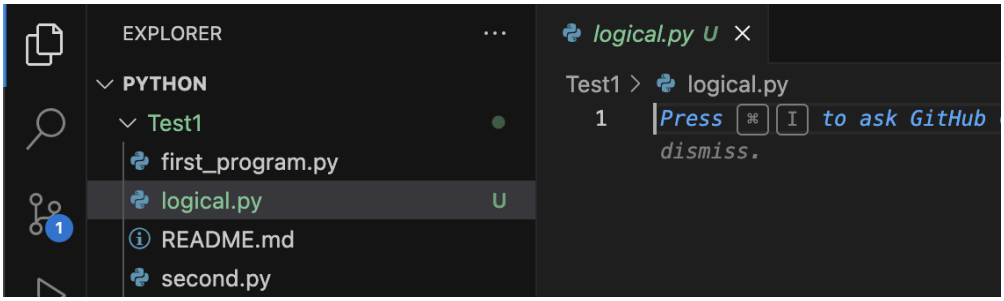
In this worksheet, we will implement logical statements in python. Logical operators in Python are used to combine conditional statements. These operators allow you to perform logical operations such as AND, OR, and NOT. We use these operators to evaluate a statement to return either a True or a False. AND returns True if both statements are true. OR returns True if one of the statements is true and NOT reverses the result, returns False if the result is true

Pre-requisites:

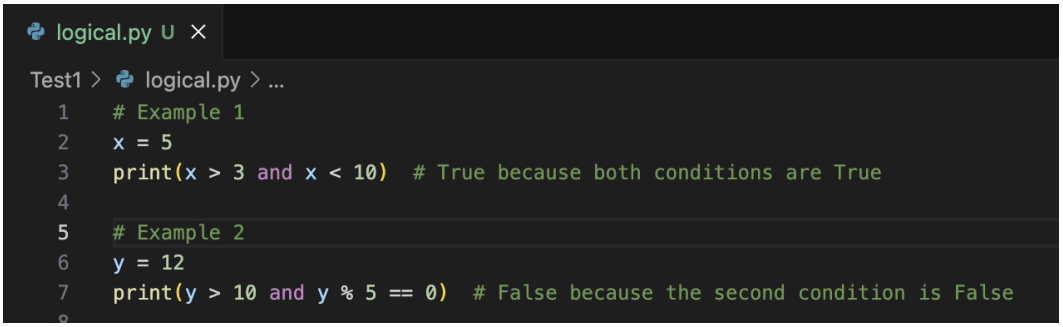
1. Github account
2. Git
3. VSCode
4. Python
5. Basic understanding of Python syntax.
6. Basic understanding of conditional statements (if statements) and logical statements.
7. Familiarity with Boolean data type (True and False).
8. Familiarity with git commands

Instructions:

1. **Open the cloned folder in VSCode**.
    a. Create a python file called “logical.py”



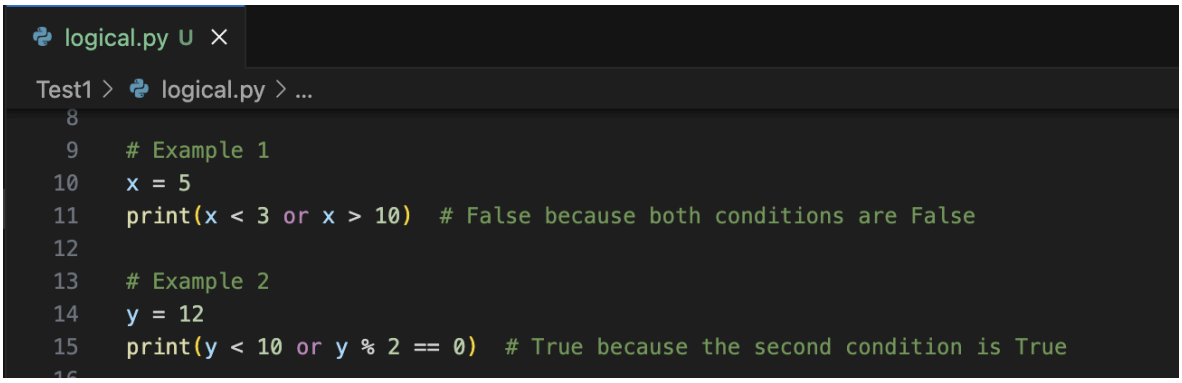
2. **Write a program**:
    a. For the AND operator. Write the following code example in the file and run them.



- The and operator returns True if both the conditions on its left and right sides are True.
- In Example 1, both conditions (x > 3 and x < 10) are True, so the output is True.

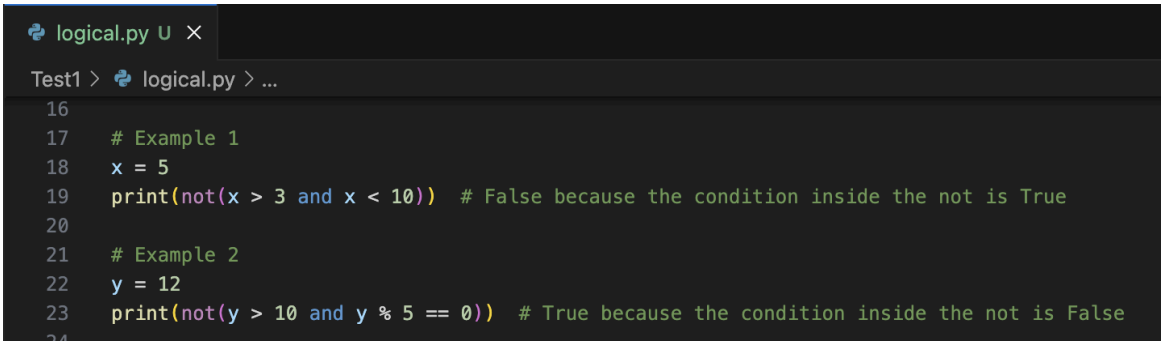
- In Example 2, the first condition (y > 10) is True, but the second condition (y % 5 == 0) is False, so the output is False.

b. For the OR operator, write the following code example in the file and run them.



- The or operator returns True if at least one of the conditions on its left or right sides is True.
- In Example 1, both conditions (x < 3 and x > 10) are False, so the output is False.
- In Example 2, the second condition (y % 2 == 0) is True, so the output is True.

c. For the NOT operator, write the following code example and run them.



- The not operator is used to negate the result of a logical expression.
- In Example 1, the expression inside not (x > 3 and x < 10) is True, so the output is False.
- In Example 2, the expression inside not (y > 10 and y % 5 == 0) is False, so the output is True.

d. Experiment with different values and conditions for better understanding of logical operators

Exercise:
Write a Python program to determine if a person is eligible for a discount on a movie ticket based on their age and whether they are a student or not. Follow these steps:

- Ask the user to input their age.
- Ask the user to input whether they are a student or not (input 'yes' if they are a student, 'no' otherwise).
- Use logical operators to determine if the person is eligible for a discount based on the following criteria:
    - If the person is 12 years old or younger, they get a discount.
    - If the person is between 13 and 18 years old (inclusive) and they are a student, they get a discount.
- Print a message indicating whether the person is eligible for a discount or not.

Sample Input/Output: