365 DataScience True and False in Python

Step 1 Combine Boolean expressions with the logical operator 'and'

If either of the expressions is False, the line will return False.

```
True and True
```

```
True and False
```

```
False and False
```

Step 2 Combine Boolean expressions with the logical operator 'or'

If either of the expressions is True, the line will return True.

```
True or True
```

```
True or False
```

```
False or False
```

Step 3 The 'not' keyword

The 'not' keyword negates the result of the condition.

```
not True
```

```
not False
```

Step 4 Combining logical operators

Just as there is an order of the operations in a mathematical expression, there is a similar hierarchy in programming. In maths, dealing with parentheses comes first, then comes multiplication/division and only then do we perform addition/subtraction. The hierarchy of the logical operators in programming is as follows:

- First comes 'not'
- Then comes 'and'
- Finally comes 'or'

In the example below, we first evaluate 'not False' to 'True', so the expression becomes:
$$\text{True and False or True}$$
Next comes 'True and False' which evaluates to 'False', so the expression reduces to
$$\text{False or True}$$
Finally, the 'or' operator applied to 'True' and 'False' gives 'True' and this is the output we see on the screen.

```
True and False or not False
```

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