

1. What are the two values of the Boolean data type? How do you write them?

True and False are the two values of the Boolean data type.

True

False

2. What are the three different types of Boolean operators?

and, or, not

3. Make a list of each Boolean operator's truth tables (i.e. every possible combination of Boolean values for the operator and what it evaluates to).

and operator:

Statement A	Statement B	A and B
True	True	True
False	True	False
True	False	False
False	False	False

or operator:

Statement A	Statement B	A or B
True	True	True
False	True	True
True	False	True
False	False	False

not operator:

Statement A	not A
True	False
False	True

4. What are the values of the following expressions?

(5 > 4) and (3 == 5)	-	False
not (5 > 4)	-	False
(5 > 4) or (3 == 5)	-	True
not ((5 > 4) or (3 == 5))	-	False

(True and True) and (True == False) - False

(not False) or (not True) - True

5. What are the six comparison operators?

Less than (<)

Greater than (>)

Equal to (==)

Less than or equal to (<=)

Greater than or equal to (>=)

Not equal to (!=)

6. How do you tell the difference between the equal to and assignment operators? Describe a condition and when you would use one.

Equal to used to compare two values and evaluates a Boolean (==)

Assignment operator used to store the values in a variable. (=)

Ex: if spam == 1: - Equal operator used here.

spam = 1 - Assignment operator used here.

7. Identify the three blocks in this code:

```
spam = 0
```

```
if spam == 10:
```

```
    print('eggs')
```

```
if spam > 5:
```

```
    print('bacon')
```

```
else:
```

```
    print('ham')
```

```
    print('spam')
```

```
    print('spam')
```

Three blocks in the above statement are :

```
if spam == 10:
```

```
    print('eggs')
```

```
if spam > 5:
```

```
print('bacon')
```

```
else:
```

```
print('ham')
```

```
print('spam')
```

```
print('spam')
```

8. Write code that prints Hello if 1 is stored in spam, prints Howdy if 2 is stored in spam, and prints Greetings! if anything else is stored in spam.

```
spam = 1
```

```
if spam == 1:
```

```
    print('Hello')
```

```
elif spam == 2:
```

```
    print('Howdy')
```

```
else:
```

```
    print('Greetings')
```

```
In [39]: 1 spam = 1
          2 if spam == 1:
          3     print('Hello')
          4 elif spam == 2:
          5     print('Howdy')
          6 else:
          7     print('Greetings')
```

Hello

```
In [40]: 1 spam = 2
          2 if spam == 1:
          3     print('Hello')
          4 elif spam == 2:
          5     print('Howdy')
          6 else:
          7     print('Greetings')
```

Howdy

```
In [43]: 1 spam = 'error'
          2 if spam == 1:
          3     print('Hello')
          4 elif spam == 2:
          5     print('Howdy')
          6 else:
          7     print('Greetings')
```

Greetings

9.If your programme is stuck in an endless loop, what keys you'll press?

Use **ctrl - C**

10. How can you tell the difference between break and continue?

Break statement will move to the execution just after a loop, whereas continue will move to the execution to the start of the loop.

11. In a for loop, what is the difference between range(10), range(0, 10), and range(0, 10, 1)?

They are all the same.

range(10) – calls range 0 to 10th value (i.e 0,1,2,3,4,5,6,7,8,9)

range(0,10) – says that loop starts with 0 and ends with 10th value.

range(0,10,1) -says that loop starts with 0 with the incremental value of 1 step till 10th value.

12. Write a short program that prints the numbers 1 to 10 using a for loop. Then write an equivalent program that prints the numbers 1 to 10 using a while loop.

#for loop

```
for i in range(1,11):
```

```
    print(i)
```

```
In [22]: 1 for i in range(1,11):
          2     print(i)
```

```
1
2
3
4
5
6
7
8
9
10
```

#while loop

```
n = 1
```

```
m = 10
```

```
while n<=m:
```

```
    print(n)
```

```
    n=n+1
```

In [21]:

```
1 n = 1
2 m = 10
3 while n<=m:
4     print(n)
5     n=n+1
```

```
1
2
3
4
5
6
7
8
9
10
```

13. If you had a function named `bacon()` inside a module named `spam`, how would you call it after importing `spam`?

`spam.bacon()`