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

**Ans** : There are two values of the Boolean data type.

True = 1

False = 0

**e.g.**

a = True

if a:

print("This is true")

else:

print("This is false")

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

**Ans** : There are 3 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 evaluate ).

**Ans.**

|  |  |  |  |
| --- | --- | --- | --- |
| True | and | True | **True** |
| True | and | False | **False** |
| False | and | True | **False** |
| False | and | False | **False** |
| True | or | True | **True** |
| True | or | False | **True** |
| False | or | True | **True** |
| False | or | False | **False** |

not True -> **False** not False -> **True**

4. What are the values of the following expressions?

(5 > 4) and (3 == 5) **Ans:** False

not (5 > 4) **Ans:** False

(5 > 4) or (3 == 5) **Ans:** True

not ((5 > 4) or (3 == 5))  **Ans:** False

(True and True) and (True == False) **Ans:** False

(not False) or (not True) **Ans:** True

5. What are the six comparison operators?

**Ans:** ==, !=, >, <, >=, <=

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

Ans:

The '**=**' is the assignment operator, which assigns the value at the right hand side to the variable at the left hand side. Ex. x=3, here the value 3 is assigned to 'x'. On the other hand, '**==**' is the comparison operator which is used to check whether the value on both the sides are equal or not.

Eg.

x=3

y=4

if (x == y):

print(“Both are equal”)

else:

print(“Both are not equal”)

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')

**Ans:**

spam = 0

if spam == 10:

print('eggs')

if spam > 5:

print('bacon')

else:

print('ham')

print('spam')

print('spam')

The above different coloured lines represent 3 blocks.

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.

**Ans:**

spam=int(input("enter a number:"))

if (spam == 1):

print("hello")

elif (spam == 2):

print("howdy")

else:

print("greeting!")

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

**Ans:** Ctrl + c (It will terminate the program)

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

**break** statement in loop will terminate the flow of loop where as continue is used to skip the remaining code inside a loop for the current iteration only.

**Example of break**

for num in range(0,10):

if num == 5:

break

print(num)

output - 0

1

2

3

4

**Example of continue**

for num in range(0,10):

if num == 5:

continue

print(num)

output – 0

1

2

3

4

6

7

8

9

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

**Ans: 1:**

for i in range (10):

print(i)

**output-**

0

1

2

3

4

5

6

7

8

9

# Here **10** is the **stop** value. It means the output will start from i = **0** and end with i = **9** as it is mentioned **10** is the stop value.

**2:**

for i in range (0,10):

print(i)

**output:**

0

1

2

3

4

5

6

7

8

9

**#** Here **0** is start value and **10** is stop value. It means the output will start from i = **0** and end with i = **9** as it is mentioned **10** is the stop value.

**3:**

for i in range (0,10,1):

print(i)

**output:**

0

1

2

3

4

5

6

7

8

9

**#** Here **0** is start value, **10** is stop value and **1** is step value. It means the output will start from i = **0** and end with i = **9** as it is mentioned **10** is the stop value and step value **1** will increase the value by 1 in each iteration.

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.

**Ans:**

**By using for loop**

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

print(i)

**output-**

1

2

3

4

5

6

7

8

9

10

**By using while loop**

number = 1

while number <= 10:

print(number)

number += 1

**output-**

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?

**Ans**: spam.bacon()