Boolean

Chapter No.	2
Status	Completed

- A Boolean is a special kind of variable that only takes on one of two possible values: True or False

▼ Comparing Variables

Comparison Symbols

Comparison Symbol	Meaning
==	equals to
!=	not equals to
<	less than
>	greater than
<=	less than or equals to
>=	greater than or equals to

▼ Two strings can also be compared with each other

- Strings are ordered according to what we call lexicographic order, where a string which comes earlier in Python's dictionary is smaller than a string which comes later
- In Python, the space ' ' comes first, followed by digits '1' to '9', followed by the capital letters 'A' to 'Z' and finally the lowercase letters 'a' to 'z'

▼ Operators Between Booleans

▼ not

Boolean not

x	not x
True	False
False	True

▼ and

Boolean and

x	y	x and y
True	True	True
True	False	False
False	True	False
False	False	False

▼ or

Boolean or

x	y	x and y
True	True	True

x	y	x and y
True	False	True
False	True	True
False	False	False

▼ Typecasting Into/From Boolean

Typecasting into Boolean

Data Type	True	False
int	all values other than 0	0
float	all values other than 0.0	0.0
str	all lists other than an empty string ""	empty string ""
list	all lists other than an empty list [ ]	empty list [ ]
set	all sets other than an empty set { }	empty set { }

▼ Conditionals

▼ if Statements

```
if boolean_expression:
  #execute this code if boolean_expression == True
```

▼ if-else Statements

```
if boolean_expression:
  #execute this code if boolean_expression == True
else:
  #execute this code if boolean_expression == False
```

▼ if-elif-else Statements

```
if boolean_expression_1:
  #execute this code if boolean_expression_1 == True
elif boolean_expression_2:
  #execute this code if boolean_expression_1 == False and boolean_expression_2 == True
else:
  #execute this code if boolean_expression_1 == False and boolean_expression_2 == False
```

▼ Nested Statements

```
if boolean_expression_1:
  if boolean_expression_2:
    #execute this code if boolean_expression_1 == True and boolean_expression_2 == True
  elif boolean_expression_3:
    #execute this code if boolean_expression_1 == True, boolean_expression_2 == False and boolean_expression_3 == True
  else:
    #execute this code if boolean_expression_1 == True, boolean_expression_2 == False and boolean_expression+3 == False
else:
  #execute this code if boolean_expression_1 == False
```