02-bool-type

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1 bool type

`True` and `False` are two keywords that are used to represent truth values.

Booleans are a subclass of integers, and behave respectively like 1 and 0.

The equivalent of the int class for Booleans is the bool class, which returns either True or False.

```
[1]: int(True)
```

```
[1]: 1
```

```
[2]: int(False)
```

```
[2]: 0
```

```
[3]: bool(1)
```

```
[3]: True
```

```
[4]: bool(-1324123123)
```

```
[4]: True
```

```
[5]: bool(0)
```

```
[5]: False
```

1.1 Logical operators

```
[6]: 1 < 2
```

```
[6]: True
```

```
[7]: 1 > 2
```

```
[7]: False
```

```
[8]: 1 < 2 < 3
```

```
[8]: True
```

```
[9]: 1 < 2 > 3
```

```
[9]: False
```

```
[10]: True or False
```

```
[10]: True
```

```
[11]: True and False
```

```
[11]: False
```

```
[12]: True & False
```

```
[12]: False
```

```
[13]: True | False
```

```
[13]: True
```

1.2 What "is True"? What "is False"?

```
[14]: bool('')
```

```
[14]: False
```

```
[15]: bool(' ') # a space
```

```
[15]: True
```

```
[16]: bool('bla')
```

```
[16]: True
```

```
[17]: bool([])
```

```
[17]: False
```

```
[18]: bool([1, 2, 3])
```

```
[18]: True
```

```
[19]: bool(())
```

```
[19]: False
```

```
[20]: bool((1,2,3))
```

```
[20]: True
```

```
[21]: bool({})
```

```
[21]: False
```

```
[22]: bool({'a' : 1})
```

```
[22]: True
```

1.3   Bitwise operations (optional)

Remeber that $(2)_b = 010$ and $(7)_b = 111$

```
[23]: 2 | 7
```

```
[23]: 7
```

```
[24]: 2 & 7
```

```
[24]: 2
```

```
[25]: 2 ^ 7     # xor
```

```
[25]: 5
```

```
[26]: 2 << 1      # left shift
```

```
[26]: 4
```

```
[27]: 2 >> 1      # right shift 010 -> 001
```

```
[27]: 1
```

```
[ ]:
```