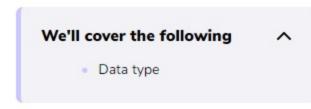


What is NumPy?

This lesson gives a brief introduction to what is NumPy and explains data types in NumPy.



NumPy is a *library for the Python programming language*, adding support for large, multidimensional arrays and matrices, along with a large collection of high-level mathematical functions to operate on these arrays.

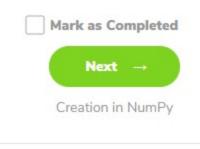
Data type

| 7. | | | |
|------------|------|-------|---|
| Туре | Name | Bytes | Description |
| bool | Ь | 1 | Boolean (True or False) stored as a byte |
| int | 1 | 4-8 | Platform (long) integer (normally either int32 or int64) |
| intp | p | 4-8 | Integer used for indexing (normally either int32 or int64) |
| int8 | i1 | 1 | Byte (-128 to 127) |
| int16 | i2 | 2 | Integer (-32768 to 32767) |
| int32 | i4 | 4 | Integer (-2147483648 to 2147483647) |
| int64 | i8 | 8 | Integer (-9223372036854775 808 to 92233720368547758 07) |
| uint8 | u1 | 1 | Unsigned integer (0 to 255) |
| uint16 | u2 | 2 | Unsigned integer (0 to 65535) |
| uint32 | u4 | 4 | Unsigned integer (0 to 4294967295) |
| uint64 | u8 | 8 | Unsigned integer (0 to 18446744073709551 615) |
| float | f8 | 8 | Shorthand for float64 |
| float16 | f2 | 2 | Half precision float: sign bit, 5 bits exponent, 10 bits mantissa |
| float32 | f | 4 | Single precision float: sign bit, 8 bits exponent, 23 bits mantissa |
| float64 | d | 8 | Double precision float: sign bit, 11 bits exponent, 52 bits mantissa |
| complex | c16 | 16 | Shorthand for complex128. |
| complex64 | c8 | 8 | Complex number, represented by two 32-bit floats |
| complex128 | c16 | 16 | Complex number, represented by two 64-bit floats |

NumPy knows that int refers to np.int_, bool means np.bool_, that float is np.float_ and complex is np.complex_. The other data-types do not have Python equivalents.

Additionally, the names such as intc, long, or double used in the C programming language are defined.

Now that the concept of data types is clear, let's move on to the next lesson "Creation in NumPy".



Stuck? Get help on DISCUSS



