

Class 2 SHP

Fall 2021





Data Types

- Integer **x = 15**
- String **x = "Hello World"**
- Char **x = "a"**
- Float **x = 15.15**
- Double **x = 15.50**
- Bool **true/false, 1/0**
- List ['apples', 'bananas']
- Dict {'hello', 'hola'}
- Set (1, 2, 4)

Ex: `x = input("Hello world!")`

Input always returns a string

If we want to do math on x we have to convert it into a mathematical number first



Casting

- Can't mix or compare different data types
- So we do something called casting, a process that makes one dataset into another

Example:

```
S1 = "7" # this is a string
```

```
N1 = int(S1) # this is the casting
```

```
print(N1)
```

OUTPUT:

```
7 # now this is an integer
```

```
# S1 + S1 = '77', N1 + N1 = 14
```

Operators



=	assignment , always to the left
==	compare if two values are equal
And	both conditions need to be true, for total to be true
Or	one or more condition need to be true, for total to be true
Not	Negates whatever follows (true to false, and false to true)
+, -	adding, subtracting
*, /	multiply, divide
%	mod
^	exponent
>, <, >=, <=	less than or greater than



Boolean Logic

Form of algebra based on 'And', 'Or', and 'Not'. All values are True or False.

True and True = True True and False = False

True or False = True False and False = False

b = 2020 a = 2001

x = (a > b) x = (b > a)

x = (a > b) or (b > a) x = (a > b) and (b>a)

x = (a == b)



Standard Python Library

<https://docs.python.org/3/library/>

Built-in functions that are pre-made for you

`print()`

`abs()`

`sum()`



If Statement

If you go to the store get juice

If there are eggs get milk, else get apples

- What would they get if there are eggs, and if there aren't?

Basically checks if a condition is true or not, if it is, it goes inside the statement,, if not it won't



Translate Statement into Python Code

```
eggs = True
if (eggs):
    print('Get milk')
    print('Get soy milk')
else:
    print('Get apples')
```



Syntax for if;elif;else

```
x = 1
if x == 1:
    print("True")
else:
    print("False")
```

```
x = 2
if x == 1:
    print("True")
else:
    print("False")
```

```
x = 2
if x == 1:
    print("ONE")
elif x==2:
    print("TWO")
else:
    print("NONE")
```