

Python Workshop Cheat Sheet

Variables

Variables are names we give to pieces of data. You can name your variables anything you want, but in Python, the convention is to use lowercase words with underscores to separate them. Examples of variables:

```
var = "hello world"
x = True
test_value = 12
```

Data Types

As with most programming languages, Python recognizes a number of different data types. Here are some of the most common ones:

int - an integer (ex. 1, -10, 37)

str - a string, meaning a sequence of characters (ex. "hello", "xyx")

bool - a boolean value, either true or false (ex. True, False)

list - a container that holds a list of data (ex. [1, 2, 3], ["cat", 47, True])

dict - maps keys to values (ex. {"name": "Ivy", "age": 19})

Operators

= assigns a value to a variable
== checks for equality between variables
+, -, *, / work as usual (**//** is integer division)
+ concatenates strings ("a" + "b" = "ab")
x and y returns true if both x and y are true
x or y returns true if either is true

Useful Functions to Know

print() - prints whatever is in the parentheses to the console (note that if you want to print a string, it must go in quotes)

input(message) - asks for user input and stores it as a variable
x = input("please input a number")
x is now the number the user typed

len() - returns the length of whatever is in the parentheses
len([2, 4, 6, 8]) → 4
len("apple") → 5

type() - returns the data type of whatever is in the parentheses
type("cat") → class 'str'
type(10) → class 'int'
type(True) → class 'bool'

append() and **remove()** - adds/removes an element from a list
my_list.append("a") adds "a"
my_list.remove("a") removes "a"

Syntax for If Statements and Loops

```
if <condition>:
    <code>
elif <other condition>:
    <code>
else:
    <code>
```

```
while <condition>:
    <code>
```

```
for <item> in <list>:
    <code>
```