

# Python Cheat Sheet

## OUTPUT

```
# This is a comment
```

```
print ("Hello World")
```

**Displays:** "Hello World"

```
print ("Hello " + "World")
```

Concatenates the string.

**Displays:** "Hello World"

```
str()
```

Converts another data type into a string.

**Example:** `str(3)` returns "3"

```
print ("There are " + str(3) + " apples")
```

**Displays:** "There are 3 apples"

## VARIABLES

```
# Initialize Variables
i = 0
name = ""
workshop = "Introduction to CS"
```

## ARITHMETIC OPERATORS

+	Add	-	Subtract	*	Multiply
/	Divide	//	Integer division (drops decimal)		
**	Exponent				

```
int()
```

Converts another data type into an integer

**Example:** `int(2)` returns 2

```
float()
```

Converts another data type into a decimal number

**Example:** `float(2)` returns 2.0

```
round()
```

Rounds a real number to the nearest integer

**Example:** `round(2.8)` returns 3

## KEYBOARD INPUT

```
number = input("Enter a number:")
```

## STRINGS

```
string = "Python"
len()
```

Determines the number of characters in the string

**Example:** `len(string)` returns 6

```
string[i]
```

Gets the character in the string at index `i`

**Example:** `string[0]` Returns "P", the first character. `string[-1]` Returns "n", the last character.

```
string[x:y]
```

Gets the substring from index `x` to index `y`

**Example:** `string[1:4]` returns "yth"

```
string.upper()
```

Converts the string to all uppercase letters

Returns "PYTHON"

```
string.lower()
```

Converts the string to all lowercase letters

Returns "python"

## LISTS

```
# Initialize a list; Lists can have multiple data types
```

```
L = []
```

```
L = ["a", 12, "abc"]
```

```
L[i]
```

Gets the character in the string at index i

**Example:** L[0] returns "a", the first element

```
len(L)
```

Determines the length of the list.

Returns 3

```
L.append(4)
```

Adds an element to the end of the list

L is now: ["a", 12, "abc", 4]

```
L.remove("abc")
```

Removes the value from the list.

L is now: ["a", 12, 4]

```
L.pop(0)
```

Removes the value at index 0

L is now: [12, 4]

## CONDITIONAL STATEMENTS

### Relational Operators

== Equal to                != Not equal to

> Greater than           < Less than

>= Greater than or equal to

<= Less than or equal to

### Boolean Operators - evaluate to True or False

and Example evaluating to True:

```
(1 > 0) and (4 > 0)
```

or Example evaluating to True:

```
(1 > 3) or (4 > 3)
```

not Example evaluating to True:

```
not (1 == 2)
```

### One Way Selection

```
if name == "Sudo":
```

```
print ("Hello Sudo")
```

### Two Way Selection

```
if mark >= 50:
    print ("Pass")
else:
    print ("Fail")
```

### Multiple Selection

```
if number > 0:
    print ("Positive")
elif number < 0:
    print ("Negative")
else:
    print ("Zero")
```

## LOOPS

### Counted Loops

```
for i in range (1, 10):
    print (i)
```

This prints the values 1-9.

```
L = [1, 2, 3]
for element in L:
    print (element)
```

This prints all elements in the list L

### Conditional Loops

```
i = 1
while (i <= 10):
    print (i)
    i = i + 1
```

This also prints the values 1-9.

## FUNCTIONS

```
# Sample function that adds two
numbers
def addNumbers (number1, number2):
    sum = number1 + number2
    return sum

print (addNumbers(3, 4 ))
```

**Displays:** 7