

# Python Programming Language Reference Sheet

## Comments:

```
# This is a single-line comment
""" This is a
    multi-line comment """
```

## Variables:

```
name = "John" # Variable assignment
age = 30
height = 175.5
is_student = True
```

## Data Types:

- int: Integer
- float: Floating-point
- str: String
- bool: Boolean
- list: List
- tuple: Tuple
- dict: Dictionary
- set: Set

## Input/Output:

```
print("Hello, World!") # Output
name = input("Enter your name: ") # Input
```

## Operators:

- Arithmetic: +, -, \*, /, %, \*\*
- Comparison: ==, !=, <, >, <=, >=
- Logical: and, or, not
- Assignment: =, +=, -=, \*=, /=
- Increment/Decrement: += 1, -= 1

## Control Flow:

- if, elif, else: Conditional statements

- while: Loop
- for: Loop with iterations
- break: Exit loop
- continue: Skip current iteration
- pass: Do nothing

### **Functions:**

```
def greet(name):  
    print("Hello, " + name)
```

### **Lists:**

```
fruits = ["apple", "banana", "cherry"]  
fruits.append("orange")
```

### **Tuples:**

```
coordinates = (2, 3)  
x, y = coordinates
```

### **Dictionaries:**

```
person = {  
    "name": "John",  
    "age": 30  
}
```

### **Sets:**

```
colors = {"red", "green", "blue"}  
colors.add("yellow")
```

### **File Handling:**

- open(), read(), write(): File operations

### **Exception Handling:**

```
try:  
    # Code that may raise an exception  
except Exception as e:  
    # Handle the exception
```

**Standard Libraries:**

- math: Mathematical functions
- random: Random number generation
- datetime: Date and time
- os: Operating system functions
- sys: System-specific parameters and functions

**Classes and Objects:**

```
class Person:  
    def __init__(self, name, age):  
        self.name = name  
        self.age = age
```

**Objects:**

```
person1 = Person("John", 30)
```

**Memory Allocation:**

- Automatic memory management (garbage collection)

**Compile and Execute:**

```
$ python your_program.py
```