PYTHON Cheat Sheet

2024

Python Basics

- **Print Statement:**

```
print("Hello, World!")
```

- **Variables:**

```
x = 5
y = "Hello"
```

- **Data Types:**

```
int_var = 10
float_var = 10.5
str_var = "Hello"
list_var = [1, 2, 3]
tuple_var = (1, 2, 3)
dict_var = {"key1": "value1",
"key2": "value2"}
```

Python Basics

- **Lists:**

```
my_list = [1, 2, 3, 4]
my_list.append(5)  # Add an element
my_list[0] = 10  # Modify an element
```

- **Tuples:**

```
my_tuple = (1, 2, 3)
```

- **Dictionaries:**

```
my_dict = {"name": "Alice", "age": 25}
my_dict["age"] = 26  # Modify value
```

Control Flow

- **If Statement:**

```
if x > 10:
    print("x is greater than 10")
elif x == 10:
    print("x is equal to 10")
else:
    print("x is less than 10")
```

- **For Loop:**

```
for i in range(5):
    print(i)
```

- **While Loop:**

```
count = 0
while count < 5:
    print(count)
    count += 1
```

Functions

- **Defining a Function:**

```
def greet(name):
    return f"Hello, {name}!"
```

- **Calling a Function:**

```
print(greet("Alice"))
```

Classes

- **Defining a Class:**

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

    def greet(self):
        return f"Hello, my name is {self.name}."
```

- **Creating an Instance:**

```
person = Person("Alice", 30)
print(person.greet())
```

Exception Handling

- **Try/Except:**

```
try:
    x = 1 / 0
except ZeroDivisionError:
    print("Cannot divide by zero")
finally:
    print("This will always execute")
```

File Handling

- **Reading a File:**

```
with open('file.txt', 'r') as file:
    content = file.read()
    print(content)
```

- **Writing to a File:**

```
with open('file.txt', 'w') as file:
    file.write("Hello, World!")
```

Libraries

- **Importing a Library:**

```
import math
print(math.sqrt(16))
```

- **Using Pandas:**

```
import pandas as pd
df = pd.DataFrame({"A": [1, 2], "B": [3, 4]})
print(df)
```

- **Using NumPy:**

```
import numpy as np
array = np.array([1, 2, 3])
print(array.mean())
```

List Comprehensions

- **Basic List Comprehension:**

```
squares = [x**2 for x in range(10)]
```

Lambda Functions

- **Lambda Function:**

```
add = lambda x, y: x + y
print(add(5, 3))
```