Python Basics Cheat Sheet

The Right Way to Start

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## Welcome to the Python Basics Cheat Sheet!

This cheat sheet is designed to help you get started with the basics of Python programming. Python is a high-level, interpreted programming language that is easy to learn and fun to use. With Python, you can create a wide range of programs, from simple scripts to complex applications.

### What’s in this cheat sheet?

This cheat sheet covers the basic syntax and features of Python, including:

* Variables and data types
* Control structures (if/else, for loops, while loops)
* Functions
* Import statements

### How to use this cheat sheet:

* Use this cheat sheet as a reference guide to help you learn the basics of Python.
* Try out the examples and exercises to practice your skills.
* Use this cheat sheet to review and reinforce your understanding of Python basics.

### What’s next?

Once you’ve mastered the basics of Python, you can move on to more advanced topics, such as:

* **Fetching Data from APIs** (Session 2): Learn how to fetch data from APIs using Python and the requests library.
* **Parsing JSON Data** (Session 3): Learn how to parse JSON data using Python and the json library.
* **Building the Weather Dashboard** (Session 4): Use your new Python skills to build a basic weather dashboard.

Remember, practice makes perfect! The more you practice, the better you’ll become at writing Python code.

Happy coding!

## Variables

* Assign a value to a variable using the assignment operator (=)
* Use the print() function to print the value of a variable
* Use the type() function to check the data type of a variable

Example:

x = 5 # assign the value 5 to the variable x  
print(x) # print the value of x  
print(type(x)) # print the data type of x

## Data Types

* Integers (int): whole numbers, e.g. 1, 2, 3, etc.
* Floats (float): decimal numbers, e.g. 3.14, -0.5, etc.
* Strings (str): sequences of characters, e.g. “hello”, ‘hello’, etc.
* Boolean (bool): true or false values
* Lists (list): ordered collections of values, e.g. [1, 2, 3], [“a”, “b”, “c”], etc.
* Tuples (tuple): ordered, immutable collections of values, e.g. (1, 2, 3), (“a”, “b”, “c”), etc.

## Control Structures

* Conditional statements:
  + if statement: execute a block of code if a condition is true
  + elif statement: execute a block of code if a condition is true and the previous conditions are false
  + else statement: execute a block of code if none of the previous conditions are true
* Loops:
  + for loop: iterate over a sequence of values
  + while loop: execute a block of code while a condition is true

Example:

x = 5  
if x > 10:  
 print("x is greater than 10")  
elif x == 5:  
 print("x is equal to 5")  
else:  
 print("x is less than 5")

## Functions

* Define a function using the def keyword
* Use the return statement to return a value from a function
* Call a function by its name, passing in arguments as needed

Example:

def greet(name):  
 print("Hello, " + name + "!")  
greet("John") # call the function with the argument "John"

## Import Statements

* Use the import statement to import a module or function from another file
* Use the from keyword to import specific functions or variables from a module

Example:

import math  
print(math.pi) # print the value of pi  
from math import sin  
print(sin(3.14)) # print the sine of 3.14

This is just a basic cheat sheet, and there is much more to learn about Python. But this should give you a good starting point for your Python jopurney!