

Python Cheatsheet

Variables and Strings

Hello World

```
print("Hello world!")
```

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Printing a String

```
msg = "Hello world!"  
print(msg)
```

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Concatenation (combining strings)

```
first_name = 'John'  
last_name = 'Doe'  
  
full_name = first_name + ' ' + last_name  
  
print(full_name)
```

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Lists

Make a List

```
birds = ['eagle', 'hawk', 'falcon']
```

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Get the first item in a List

```
first_bird = birds[0]
```

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Get the last item in a List

```
last_bird = birds[-1]
```

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Lists

Looping through a List

```
for bird in birds:  
    print(bird)
```

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Adding items to a List

```
birds = []  
bikes.append('eagle')  
bikes.append('hawk')  
bikes.append('falcon')
```

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Building a list in a Loop

```
cubes = []  
for x in range(1, 13):  
    cubes.append(x**3)
```

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List comprehensions

```
cubes = [x**3 for x in range(1, 13)]
```

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Slicing a List

```
first_names = ['sam', 'bob', 'billy', 'eddie']  
first_two = first_names[:2]
```

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Copying a List

```
copy_of_birds = birds[:]
```

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Tuples

Creating a Tuple

```
triples = (3,4,5)
```

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If Statements & Booleans (Conditions)

Conditional tests

```
x == 42  
x != 42  
x > 42  
x >= 42  
x < 42  
x <= 42
```

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Conditional test with lists

```
'eagle' in birds  
'pigeon' not in birds
```

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Assigning Boolean values

```
screen_on = True  
file_open = False
```

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A simple if Test

```
age = 31 # Change this value to see how the printed results change  
  
if age >= 21:  
    print("You can drink!")  
else:  
    print("You're underage")
```

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If Statements (Conditions)

If-elif-else statements

```
if age < 4:  
    bus_fare = 0  
elif age < 18:  
    bus_fare = 1.50  
else:  
    bus_fare = 2.50
```

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Dictionaries

A simple Dictionary

```
mana = {'color': 'blue', 'amount': 100}
```

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Accessing a Value

```
print("You have " + mana['amount'] + " mana left!")
```

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Adding a new key-value pair

```
mana['regen'] = 0.25
```

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Looping through all key-value pairs

```
birth_months = {'sam': 'september', 'billy': 'october'}  
for name, month in birth_months.items():  
    print(name + ' was born in ' + month)
```

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Dictionaries

Looping through all keys

```
birth_months = {'sam': 'September', 'billy': 'October'}  
for name in birth_months.keys():  
    print(name)
```

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Looping through all the values

```
birth_months = {'sam': 'September', 'billy': 'October'}  
for month in birth_months.values():  
    print(month)
```

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While Loops

Basic while loop

```
num = 2  
while num <= 10:  
    print(num) |  
    num += 1
```

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Loop with user input

```
msg = ''  
while msg != 'bye':  
    msg = input("Say your name: ")  
    print("Hi " + msg + "!")
```

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Functions

Basic function

```
def greet_user():
    #Display a simple greeting.
    print("Hello!")

greet_user()
```

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Passing an argument

```
def greet_user(name):
    #Display a personalized greeting.
    print("Hi, " + name + "!")

greet_user('bob')
```

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Default values for parameters

```
def make_sandwich(patty='chicken'):
    #Make a simple sandwich.
    print("Have a " + patty + " sandwich!")

make_sandwich()
make_sandwich('beef')
```

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Returning a value

```
def mul_numbers(x, y):
    #Multiply two numbers and return the product.
    return x * y

product = mul_numbers(2, 10)
print(product)
```

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Exceptions

Catching Exceptions

```
prompt = "How many apples do you want to buy? "
num_apples = input(prompt)

try:
    num_apples = int(num_apples)
except ValueError:
    print("Please enter a number.")
else:
    print("Thank you for shopping with us!")
```

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