



Python 101

WRITING COMMENTS

Anything written after a '#' is a comment. It helps people understand the program without affecting the code.

PRINTING STATEMENTS

```
print("Hello World")  
  
# Outputs "Hello World"
```

VARIABLE TYPES

String ->	"hi", "101"
Integer ->	101, 2000
Float ->	3.141, 1.01
Boolean ->	TRUE, FALSE
List ->	[1, 2, 3, 4]

BASIC OPERATORS

+	Plus
-	Minus
/	Divide
*	Multiply
<	Less than
>	Greater than
>=	Greater or equal to
<=	Less or equal to
!=	Not equal to
==	Equal to

IF/ELSE CONDITIONS

```
if score >= 75:  
    grade = 'A'  
  
elif score >= 65:  
    grade = 'B'  
  
else:  
    grade = 'C'  
  
# if score == 80,  
# print(grade) outputs 'A'
```

LISTS AND INDEXING

```
# Indexing starts from 0  
scores = ['A', 'B', 70, 60]  
  
scores[0]          # 'A'  
# Gets item at 0th index  
  
scores[1:3]        # 'B', 70  
# Gets items from 1st to 3rd  
# index, but excludes the 3rd  
  
scores[2:]         # 70, 60  
# Items from 2nd index onwards  
  
scores[:2]         # 'A', 'B'  
# Gets items until it reaches  
# the 2nd last index  
  
# When counting backwards,  
# index starts from -1  
  
len(scores)        # 4  
# Number of items in list
```



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FOR LOOPS

```
grades = ['A', 'B', 'C', 'D']

for item in grades:
    print(item)

# Prints all items in grades
# Outputs 'A', 'B', 'C', 'D'

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

# Prints numbers up to 4
# Outputs 0, 1, 2, 3, 4

# range gives a sequence of
# numbers. it starts from 0
# by default and stops before
# the specified number
```

TYPE CONVERSION

```
int('345')      # 345
str(678)         # "678"
```

WHILE LOOPS

```
i = 0
grades = ['A', 'B', 'C', 'D']

while i < len(grades):
    print(i)
    i += 1

# Outputs 0, 1, 2, 3

k = 0

while True:
    k += 1
    if k == 2:
        continue
    if k == 5:
        break
    print(i)

# Outputs 1, 3, 4

# continue goes to next loop
# break ends the loop
```

FUNCTIONS

```
def addNumbers(num1, num2):
    num1 = int(num1)
    num2 = int(num2)
    total = num1 + num2
    return total
```

```
addNumbers("3", 5)
# Outputs 8
# Why is there no error?
```

```
def areaTriangle(base, height):
    area = 0.5 * base * height
    txt = "Area: " + area + "m2"
    return txt
```

```
areaTriangle(10, 20)
# Outputs 'Area: 100m2'
```

Try building your own function!