Python 101

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Variables

- Variables are containers for storing data values
- A variable name must start with a letter or the underscore character
- A variable name cannot start with a number
- A variable name can only contain alphanumeric characters and underscores (A-z, 0-9, and _)
- Variable names are case-sensitive (age, Age and AGE are three different variables)
- A variable can not be a keyword (reserved names)
- A variable can be defined using assignment operator (=)

Variables

var.py

```
a = 12
print(a)

b = 3.1415
print(b)

c = “this is nice”
print(c)
```

output

```
12
3.1415
this is nice
```

Types

Text type	str
Numeric type	int, float, complex
Sequence type	list, tuple, range
Set/Map type	set, dict, frozenset
Boolean type	bool
Binary Type	bytes, bytearray, memoryview

Type of a variable can be checked using type() function.

Types

type.py

```
a = 12
print(type(a))

b = 34.76
print(type(b))

b = “variables can be reused”
print(type(b))

c = True
print(type(c))
```

output

```
<class 'int'>
<class 'float'>
<class 'str'>
<class 'bool'>
```

* We will explore other data types later.

Input

input() command will return full line entered by the user as ‘str’.

io.py

```
print(“Enter anything:”)
i = input()
print(“You entered:”)
print(i)
```

output

```
Enter anything:
47
You entered:
47
```

Casting

casting.py

```
print(int(1))
print(int(3.9))
print(int("54"))
print()
print(float(1))
print(float(3.9))
print(float("54"))
print()
print(str(1))
print(str(3.9))
print(str("54"))
```

output

```
1
3
54

1.0
3.9
54.0

1
3.9
54
```

Arithmetic operators

+	Addition	x + y	2 + 3 = 5
-	Subtraction	x - y	5 - 1 = 4
*	Multiplication	x * y	2 * 3 = 6
/	Division	x / y	5 / 2 = 2.5
%	Modulus	x % y	5 % 2 = 1
**	Power	x ** y	2 ** 3 = 8
//	Floor division	x // y	5 // 2 = 2

Comment

Comments can be used to explain Python code.
Comments can be used to make the code more readable.
Comments can be used to prevent execution when testing code.

io.py

```
# this program doubles the number
x = int(input())
y = 2 * x  # this will double x
print(y)
```

output

```
4
8
```

Adding numbers

add.py

```
print("Enter two
numbers:")
x = int(input())
y = int(input())
z = x + y
print("sum is", z)
```

output

```
Enter two numbers:
45
12
sum is 57
```

Centimeters to feet and inches

example.py

```
print("Enter height in cm:")
c = int(input())
# 30.48 cm is 1 feet
# 1 cm is 1/30.48 feet
# c cm is c/30.48 feet
f = c / 30.48
# This will give us the integer part of it
feet = int(f)
# 1 foot is 12 inches
inches = int(12*(f - feet))
print("Your height is", feet, inches)
```

output

```
Enter height in cm:
180
Your height is 5 10
```

Assignments

- Write a program to take feets and inches from user and convert it to centimeter.
- Write a program to take temperature as celsius from user and output in fahrenheit.
- Write a program to take temperature as fahrenheit from user and output in celsius.
- Write a program to take cost price and selling price from user and print profit in percentage.

That's all folks!