*#  OBject types / data types*

>>> 2\*\*100

1267650600228229401496703205376

>>> 15.2 \*2

30.4

>>> import math

>>> math.pi

3.141592653589793

>>> random.choice([1, 2, 3, 4, 5])

Traceback (most recent call last):

  File "<python-input-4>", line 1, in <module>

    random.choice([1, 2, 3, 4, 5])

    ^^^^^^

NameError: name 'random' is not defined. Did you forget to import 'random'?

>>> import random

>>> random.choice([1, 2, 3, 4, 5])

1

>>>

>>> random.choice([1, 2, 3, 4, 5])

4

>>> random.choice([1, 2, 3, 4, 5])

2

>>> username = "chaiaurcode"

>>> len(username)

11

>>> username[0]

'c'

>>> username[1:3]

'ha'

>>> dir(username)

['\_\_add\_\_', '\_\_class\_\_', '\_\_contains\_\_', '\_\_delattr\_\_', '\_\_dir\_\_', '\_\_doc\_\_', '\_\_eq\_\_', '\_\_format\_\_', '\_\_ge\_\_', '\_\_getattribute\_\_', '\_\_getitem\_\_', '\_\_getnewargs\_\_', '\_\_getstate\_\_', '\_\_gt\_\_', '\_\_hash\_\_', '\_\_init\_\_', '\_\_init\_subclass\_\_', '\_\_iter\_\_', '\_\_le\_\_', '\_\_len\_\_', '\_\_lt\_\_', '\_\_mod\_\_', '\_\_mul\_\_', '\_\_ne\_\_', '\_\_new\_\_', '\_\_reduce\_\_', '\_\_reduce\_ex\_\_', '\_\_repr\_\_', '\_\_rmod\_\_', '\_\_rmul\_\_', '\_\_setattr\_\_', '\_\_sizeof\_\_', '\_\_str\_\_', '\_\_subclasshook\_\_', 'capitalize', 'casefold', 'center', 'count', 'encode', 'endswith', 'expandtabs', 'find', 'format', 'format\_map', 'index', 'isalnum', 'isalpha', 'isascii', 'isdecimal', 'isdigit', 'isidentifier', 'islower', 'isnumeric', 'isprintable', 'isspace', 'istitle', 'isupper', 'join', 'ljust', 'lower', 'lstrip', 'maketrans', 'partition', 'removeprefix', 'removesuffix', 'replace', 'rfind', 'rindex', 'rjust', 'rpartition', 'rsplit', 'rstrip', 'split', 'splitlines', 'startswith', 'strip', 'swapcase', 'title', 'translate', 'upper', 'zfill']

>>> mylist = [123, 'chai', 3.14]

>>> mylist

[123, 'chai', 3.14]

>>> mylist[1]

'chai'

>>> mylist[:1]

[123]

>>> mydir = {'one':'lemon', 'two':'green', 'three':'ginger'}

>>> mydir

{'one': 'lemon', 'two': 'green', 'three': 'ginger'}

>>> mydir['two']

'green'

>>> mydir['three']

'ginger'

>>> mytup = (1, 2, 3)

>>> mytup

(1, 2, 3)

>>> len(tup)

Traceback (most recent call last):

  File "<python-input-25>", line 1, in <module>

    len(tup)

        ^^^

NameError: name 'tup' is not defined

>>> len(mytup)

3

>>> mytup[0]

1

>>> a = 3

>>> a = chaiaurcode

Traceback (most recent call last):

  File "<python-input-29>", line 1, in <module>

    a = chaiaurcode

        ^^^^^^^^^^^

NameError: name 'chaiaurcode' is not defined

>>>

PS C:\Users\HP\OneDrive\Desktop\New folder\python\_learning\01\_Basic> python

Python 3.13.3 (tags/v3.13.3:6280bb5, Apr  8 2025, 14:47:33) [MSC v.1943 64 bit (AMD64)] on win32

Type "help", "copyright", "credits" or "license" for more information.

>>> a = 3

>>> a

3

>>> a = "chai aur code"

>>> a

'chai aur code'

>>> a = 5

>>> b = 2

>>> a = a + 2

>>> a

7

>>> l1 = [1, 2, 3]

>>> l2 = l1

>>> l2

[1, 2, 3]

>>> l1

[1, 2, 3]

>>> l2[1] = 40

>>> l2

[1, 40, 3]

>>> l1

[1, 40, 3]

>>> l1 = [1, 3, 5]

>>> l2 = l1

>>> l2 = [1, 3, 5]

>>> l1

[1, 3, 5]

>>>

>>> l2

[1, 3, 5]

>>> l1 = l2

>>> l1 = = l2

  File "<python-input-22>", line 1

    l1 = = l2

         ^

SyntaxError: invalid syntax

>>> l1 == l2

True

>>> l1 is 12

<python-input-24>:1: SyntaxWarning: "is" with 'int' literal. Did you mean "=="?

False

>>>

PS C:\Users\HP\OneDrive\Desktop\New folder\python\_learning\01\_Basic>

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Python 3.13.3 (tags/v3.13.3:6280bb5, Apr  8 2025, 14:47:33) [MSC v.1943 64 bit (AMD64)] on win32

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>>> x = 2

>>> y = 3

>>> z = 4

>>> x + y

5

>>> 40 + int(3.15)

43

>>> x + (y \* z)

14

>>> x, y, z

(2, 3, 4)

>>> x + 1, y + 3

(3, 6)

>>> z \*\* 2

16

>>> result = 1/3.0

>>> result

0.3333333333333333

>>> repr('chai')

"'chai'"

>>> str('chai')

'chai'

>>> print('chai')

chai

>>> 1<2

True

>>> 5.0 ==  3.5

False

>>> 4.0 != 5.0

True

>>> x < y < z

True

>>> 1 == 2 < 3

False

>>> 1 == 2 and 2 < 3

False

>>> import math

>>> math.floor(4.5)

4

>>> math.floor(-2.8)

-3

>>> (2 + 3J) \* 3

(6+9j)

>>> int(64, 8)

Traceback (most recent call last):

  File "<python-input-24>", line 1, in <module>

    int(64, 8)

    ~~~^^^^^^^

TypeError: int() can't convert non-string with explicit base

>>> int('64', 8)

52

>>> int('64', 2)

Traceback (most recent call last):

  File "<python-input-26>", line 1, in <module>

    int('64', 2)

    ~~~^^^^^^^^^

ValueError: invalid literal for int() with base 2: '64'

>>> int('10000', 10)

10000

>>> int('64', 16)

100

>>> bin(64)

'0b1000000'

>>> x = 1

>>> x << 3

8

>>>  x << 2

  File "<python-input-32>", line 1

    x << 2

IndentationError: unexpected indent

>>> import random

>>> random.random()

0.9637580038720304

>>> random.randint(1,10)

2

>>> random.randint(1,10)

3

>>> l1 = ['lemon', 'masala', 'ginger', 'mint']

>>> random.choice(l1)

'lemon'

>>> random.choice(l1)

'masala'

>>> random.shuffle(l1)

>>> l1

['ginger', 'lemon', 'masala', 'mint']

>>> decimal(0.1)+decimal(0.2)+decimal(0.3)-decimal(0.6)

Traceback (most recent call last):

  File "<python-input-42>", line 1, in <module>

    decimal(0.1)+decimal(0.2)+decimal(0.3)-decimal(0.6)

    ^^^^^^^

NameError: name 'decimal' is not defined. Did you forget to import 'decimal'?

>>> import decimal

>>>  decimal(0.1)+decimal(0.2)+decimal(0.3)-decimal(0.6)

  File "<python-input-44>", line 1

    decimal(0.1)+decimal(0.2)+decimal(0.3)-decimal(0.6)

IndentationError: unexpected indent

>>> from decimal import decimal

Traceback (most recent call last):

  File "<python-input-45>", line 1, in <module>

    from decimal import decimal

ImportError: cannot import name 'decimal' from 'decimal' (C:\Users\HP\AppData\Local\Programs\Python\Python313\Lib\decimal.py). Did you mean: 'Decimal'?

>>>

>>> setone = {1, 2, 3, 4, 5}

>>> setone &{1,3}

{1, 3}

>>> setone |{1,3}

{1, 2, 3, 4, 5}

>>> setone - {1, 2, 3, 4, 5}

set()

>>> chai = "masala chai"

>>> print(chai)

masala chai

>>> first\_char = chai[0]

>>> print(first\_char)

m

>>> num\_list = "0123456789"

>>> num\_list[:]

'0123456789'

>>> num\_list[3:]

'3456789'

>>> chai

'masala chai'

>>> print(chai.upper())

MASALA CHAI

>>> print(chai.lower())

masala chai

>>> print(chai.strip())

masala chai

>>> chai = "leman chai"

>>> print(chai.replace("black chai"))

Traceback (most recent call last):

  File "<python-input-25>", line 1, in <module>

    print(chai.replace("black chai"))

          ~~~~~~~~~~~~^^^^^^^^^^^^^^

TypeError: replace() takes at least 2 positional arguments (1 given)

>>> print(chai.replace('leman chai', "black tea"))

black tea

>>> chai

'leman chai'

>>> chai = 'leamon', 'black', "milk"

>>> print(chai.find(chai))

Traceback (most recent call last):

  File "<python-input-29>", line 1, in <module>

    print(chai.find(chai))

          ^^^^^^^^^

AttributeError: 'tuple' object has no attribute 'find'

>>>

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Type "help", "copyright", "credits" or "license" for more information.

>>> chai\_type = "masala"

>>> quantity = 2

>>> order = "i order {} cups of {} chai"

>>> order

'i order {} cups of {} chai'

>>> print(order.format(quantity, chai\_type))

i order 2 cups of masala chai

>>> chai\_verity = ['masla', 'lemon', 'milk', 'ginger']

>>> print(", ".join(chai\_verity))

masla, lemon, milk, ginger

>>> print(len(chai))

Traceback (most recent call last):

  File "<python-input-7>", line 1, in <module>

    print(len(chai))

              ^^^^

NameError: name 'chai' is not defined

>>> chai = "HE SAID,\'masala chai is awesome\'"

>>> chai

"HE SAID,'masala chai is awesome'"

>>> tea\_varities = ['black', "green", "oolong", "masala"]

>>> print(tea\_varities)

['black', 'green', 'oolong', 'masala']

>>> print(tea\_varities[-1])

masala

>>> for tea in tea\_varities:

...     print(tea)

...

black

green

oolong

masala

>>> if "oolong" in tea\_varities:

...     print("i have a oolong tea")

...

i have a oolong tea

>>> tea\_varities.pop()

'masala'

>>> tea\_varities.insert(3, "alu-chai")

>>> tea\_varities

['black', 'green', 'oolong', 'alu-chai']

>>> tea\_varities.remove('oolong')

>>> tea\_varities

['black', 'green', 'alu-chai']

>>> tea\_varities\_copy = tea\_varities.copy()

>>> tea\_varities\_copy.insert(3,"red-masal")

>>> tea\_varities

['black', 'green', 'alu-chai']

>>> tea\_varities\_copy

['black', 'green', 'alu-chai', 'red-masal']

>>> squared\_num = [x\*\*2 for x in range (10)]

>>> squared\_num

[0, 1, 4, 9, 16, 25, 36, 49, 64, 81]

>>> cube\_num = [x \*\* 3 for x in range(10)]

>>> cube\_num

[0, 1, 8, 27, 64, 125, 216, 343, 512, 729]

>>>