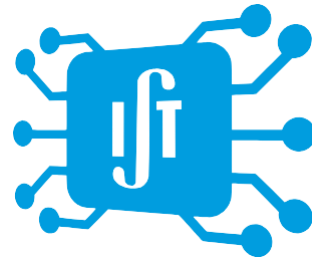


NEEC



BASIC

#this is a comment
Makes a comment.
help(print)
Gives help about a function.

INPUT AND OUTPUT

print("Hello World", x)
Prints string "Hello World" and the value of the variable x.

input()
Reads string from the stdin.

TYPES

Variables do not need to be declared with any particular type and can even change type after they have been set.

INT
is positive or negative integer of unlimited length).
EX: x=1 or x= int(1)

FLOAT
is positive or negative number containing one or more decimals.
EX: y=2.8 or x=float(2.8)

STRING
is a array of bytes representing unicode characters.
EX: w= "Hello World" or w=str("Hello World")

1- **len(x)** Returns the number of items (length) of an object. Can be used in any object: lists, sets, etc..
EX: len("Hello, World!"), returns 13
2- **("Hello").lower()** returns the string "Hello" in lower case.
3- **("Hello").upper()** returns the string "Hello" in upper case.
4- **("Hello").replace("H", "J")**
Replaces a string with another string.
5- **("Hello").center(width, fillchar)**
Center the text and fill the blank spaces with the fillchar.
6- **"peso: {} Kg".format(57.2)** - move the objects in () to place marked by {}.

LIST

is a collection which is ordered and changeable. Allows duplicate members.

EX: **thislist = ["apple", "banana", "cherry"]** or **thislist=list(("apple", "banana", "cherry"))**

1- **print(thislist[1])** - Access the list items by referring to the index number: **prints banana.**
2- **thislist.append("orange")** - add an item to the end of the list.
3- **thislist.insert(1, "orange")** - add an item at the specified index.
4- **thislist.remove("banana")** removes the specified item.
5- **thislist.pop(1)** removes the specified index, (or the last item if index is not specified).
6- **del thislist** delete the list completely.
7- **thislist.clear()** empties the list.
8- **thislist.count("banana")** returns the number of elements with the specified value.
9- **thislist.sort** Sorts the list.
10- **thislist.extend(vegetables)** add the elements of vegetables to the thislist list.
11- **thislist.index("banana")** returns the index of the first element with the specified value.

TUPLE

is a collection which is ordered and unchangeable. Allows duplicate members.

EX: **thistuple = ("apple", "banana", "cherry")** or **thistuple=tuple(("apple", "banana", "cherry"))**

1- **prints(thistuple[1])** Access the tuple items by referring to the index number: **prints banana.**
2- **del thistuple** delete the tuple completely.
3- **thistuple.count("apple")** returns the number of elements with the specified value.
4- **thistuple.index("apple")** returns the index of the first element with the specified value.

SET

is a collection which is unordered and unindexed. No duplicate members.

EX: **thisset = {"apple", "banana", "cherry"}** or **thisset = set(("apple", "banana", "cherry"))**

1- **thisset.add("orange")** Adds an element to the set.
2- **thisset.clear()** empties the tuple.
3- **thisset.difference(y)** Returns a set containing the difference between two or more sets.
4- **thisset.intersection(y)** Returns a set, that is the intersection of two other sets.
5- **thisset.issubset(y)** returns whether another set contains this set or not.
6- **thisset.issuperset(y)** returns whether this set contains another set or not.
7- **thisset.pop("apple")** removes a random element from the set.
8- **thisset.remove("apple")** removes the specified element.
9- **thisset.union(y)** return a set containing the union of sets.

DICTIONARY

is a collection which is unordered, changeable and indexed. No duplicate members.

EX: **thisdict = {"Brand": "NEEC", "age": 15, "year": 2018}** or **thisdict = dict(brand="NEEC", age=15, year=2018)**

1- **thisdict["age"]** or **thisdict.get("age")** get the value of "model" key.
2- **thisdict["year"] = 2018** change the value of a specific item.
3- **Thisdict.pop("year")** removes the item with the specified key name.
4- **del thisdict** delete the dictionary completely.
5- **del thisdict["year"]** removes the item with the specified key name.
6- **thisdict.clear()** empties the dictionary.



OPERATORS

ARITHMETIC

```
x + y Addition
x - y Subtraction
x * y Multiplication
x / y Division
x % y Modulus-rest of the division
x ** y Exponentiation-  $x^y$ 
```

COMPARISON

```
x == y Equal
x != y Not Equal
x > y Greater than
x < y Less than
x >= y Greater than or equal to
x <= y Less than or equal to
```

LOGICAL

```
x and y Returns True if both
statements are true
x or y Returns True if one of the
statements is true
not x Reverse the result, returns
False if the result is true
```

IDENTITY

```
x is y Returns True if both variables  
are the same object  
x is not y Returns True if both  
variables are not the same object
```

MEMBERSHIP

```
x in y Returns True if a sequence  
with the specified value is present  
in the object  
x not in y Returns True if a sequence  
with the specified value is not  
present in the object
```

CONDITIONS

```
if b > a:
    print("b is greater than
a")
elif a == b:
    print("a and b are equal")
else:
    print("a is greater than
b")
```

Indentation is important here.

LOOPS

For Loops

```

for x in WS: iterate through the
array WS
    print(x)
print NEEC on the screen.
for x in range(2,6):
    if x == 4, condition
to continue to the next loop
        continue
    print(x)
print the numbers 2, 3 and 5 on the
screen, doesn't print the number 4.
for item in [2,4,8,10]: iterates
through the list [2,4,8,10].
for item in (2,4,8,10): iterates
through the tuple (2,4,8,10).
for x in range(2,4): will iterate
through the numbers
    print (x)
print the numbers 2 and 3 on the
screen.
for x in range(2,10,3): will iterate
through the numbers, 3 by 3
    print (x)
print the numbers 2, 5 and 8 on the
screen.
for x in range(2,6)
    if x == 4
        break will stop the
loop
    print(x)
print the numbers 2 and 3 on the
screen.

```

While Loops

```
i = 1
while i < 6:
    print(i)
    if i == 3:
        break
    i += 1
print the numbers 1 and 2 on the
screen.
```

```
i = 0
while i < 4:
    i += 1
    if i == 2:
        continue
    print(i)
print the numbers 1, 3 and 4 on the
screen.
```

FUNCTIONS

```
def first_function()
    print("NEEC")
first_function is defined using the
def keyword.
first_function()
whenever the function is call, will
print NEEC on the screen.
```

Lambda

```
Lambda functions can take any number
of arguments.
x = lambda a, b : a + b
print(x(5, 6))
print the number 11 on the screen.
A lambda function that take 2
arguments and add argument a with
argument b and print the result.
```

CLASSES AND OBJECTS

```
Class MyWS:
```

```
x = 20
```

This is how to create a class, with one property (x).

```
pobj = MyWS()  
print(pobj.x)
```

This is how to create an object and print the value of x.

The __init__() Function

```
class brand:
    def __init__(brand, name, age):
        brand.name = name
        brand.age = age

p1 = brand("NEEC", 15)

print(p1.name)
print(p1.age)
print NEEC and the number 15 on the
screen.
This is how to create a class named
brand, use the __init__() function to
assign values for name and age
p1.name = NEECIST
This is how you can modify properties
on objects.
del p1.age
This is how to delete a property on a
Object.
```

MODULES

```
This code is saved in the file
WSModule.py
brand1 = {
    "name": "NEEC",
    "age": 15,
    "country": "Portugal"
}
```

```
You can import a module like this:
import WSmodule
a = WSmodule.brand1["name"]
print(a)
print the NEEC on the screen.
Create an alias for mymodule called
WS:
import mymodule as WS
```

