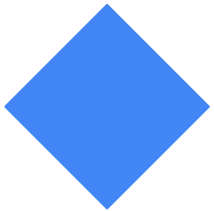
Developer Student Clubs

Universidad Politécnica de Valencia



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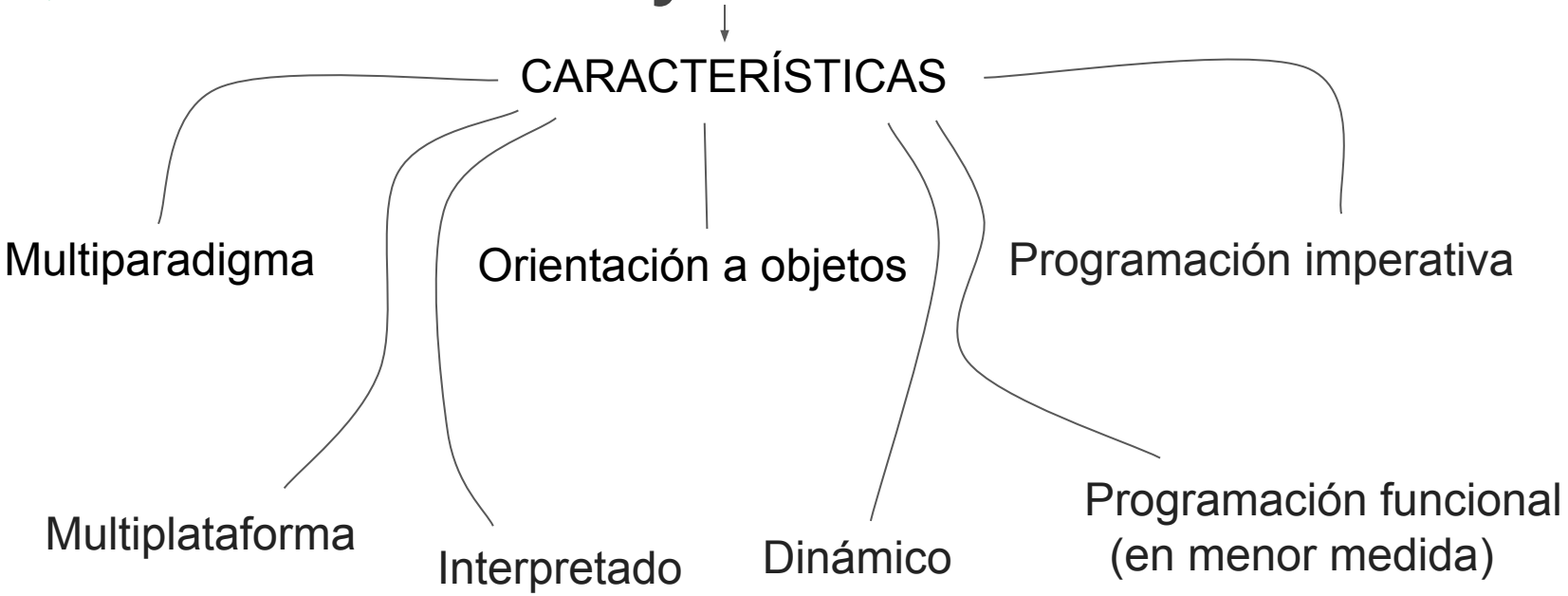
PYTHON & SCRIPTING

Ponentes:

Enrique Tello Barbé

Python


CARACTERÍSTICAS
Multiparadigma
Multiplataforma
Interpretado
Orientación a objetos
Dinámico
Programación imperativa
Programación funcional
(en menor medida)

LOS PRINCIPIOS DE PYTHON

HORA DE LA SINTAXIS

1. MATEMÁTICAS
2. VARIABLES Y MÉTODOS
3. BOOLEAN Y OPERADORES
4. ESTRUCTURAS
5. FUNCIONES

MATEMÁTICAS

```
#Maths
print("Maths")
print(50 + 50 - 50 * 50 / 50)
print(50 ** 2) #exponents
print(50 % 6) #module
print(50 // 6) #number without leftovers
print("Strings")
```

VARIABLES Y MÉTODOS 1

```
#Variables & methods
quote = "All you want"
print(len(quote))
print(quote.upper())
print(quote.lower())
print(quote.title())
print("Casting")
age = 29
gpa = 3.7
name = "   Quique   "
print(int(29.9))
print("My name is" + name + "my age is " + str(age))
age += 1
```

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VARIABLES Y MÉTODOS 2

```python
#Listas

abecedario = ["a","b","c","d"]
print(abecedario[0])
print(abecedario[-1])
print(abecedario[0:3])
print(abecedario[1:])
print(abecedario[:1])

abecedario.append("seañadecomoultimo")
print(abecedario)
abecedario.pop() #quita el último elemento
print(abecedario)
abecedario.pop(1) #quita el de la posición que indiques
print(abecedario)

vocales = ["a","e","i","o","u"]
combined = zip(abecedario, vocales)
print(combined)
print(list(combined))
```

VARIABLES Y MÉTODOS 3

```python
#Tuples
grades = ("A","B", "C", "D", "F") #Tuples have parenthesis
                                  #and cannot be change

print(grades[1])
```

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BOOLEAN Y OPERADORES

```
#Boolean expressions and Relational/Boolean Operators
bool2 = 3*3 == 9
greater_than = 7 > 5
test_and = (7 > 5) and (5 < 7)
test_or = (7 > 5) or (5 < 7)
test_not = not True
print(type(test_or))
```

ESTRUCTURAS

1. Condicional

```
#Conditional
def alcohol(age, money):
        if (age >= 21) and (money >=5):
                return "ole"
        elif (age >= 21) and (money < 5):
                return "ola"
        else:
                return "olu"

print(alcohol(21,5))
```

ESTRUCTURAS
2. Looping

```
#Looping
for x in abecedario:
        print(x)

i = 1
while i < 10 :
        print(i)
        i += 1
```

ESTRUCTURAS
3. Excepciones

```
try:
    print(function)
except:
    print("error")
```

FUNCIONES

```
#Functions

print("Añade")
def add(x,y):
        print(x + y)

add(7,7)
add(305,305)

#Functions using return

print("Multiplica")
def multiply(x,y):
        return x * y

print(multiply(2,2))


print("Exponente")
def square_root(x):
        return x ** 5

print(square_root(64))
```

EJERCICIO

Función: crear_pass
Intención: Crear una contraseña random con letras --> list(ascii_letters), dígitos→ list(string.digits) y signos→list(string.punctuation).
Parámetros de entrada: Ancho del password.
Librerías: random y string
Métodos utilizados: random.choice, join, input

```python
#Author: eduar766
#!/bin/python
import random
import string

def crear_pass(n):
    allChars = list(string.ascii_letters) + list(string.digits) + list(string.punctuation)
    passphrase = []

    for i in range(n):
        tmp = random.choice(allChars)
        passphrase.append(tmp)

    res = "".join(passphrase)
    return res

n = input("Ingresa ancho de Password: ")
test = crear_pass(n)
try:
    print(test)
except:
    print("Debe ingresar el ancho del Password")
```

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PYTHON & SCRIPTING

2ª Parte

Ponentes:

Enrique Tello Barbé

BUFFER OVERFLOW
BOF.PY

```
#!/usr/bin/python
import sys
import socket
from time import sleep

buffer = "A" * 100
while True:
        try:
                s.socket.socket(socket.AF_INET,socket.SOCK_STREAM)
                s.connect(('197.168.1.1',9999))
                s.send(('TRUN /.:/' + buffer))
                s.close()
                sleep(1)
                buffer = buffer + "A"*100
        except:
                print "Fuzzing crashed at %s bytes" % (str(len(buffer)))
                sys.exit()
```

Port Scanner

```python
#!/bin/python3

import sys
import socket
from datetime import datetime

if len(sys.argv) == 2:
        target = socket.gethostbyname(sys.argv[1])
        #cambia un host name por IPV4
else:
        print("Invalid amount of arguments.")
        print("Syntax: python3 scanner.py <ip>")
        sys.exit()

#Banner
print("-" * 50)
print("Scanning target "+target)
print("Time started: "+str(datetime.now()))
print("-" * 50)

try:
        for port in range(50,85):
                s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
        #INET =  tu IPV4 , stream = el puerto
                socket.setdefaulttimeout(1)
                result = s.connect_ex((target,port)) #error indicator
                print("Checking port {}".format(port))
                if result == 0:
                        print("Port {} is open".format(port))
                s.close()
except KeyboardInterrupt:
        print("\nExiting program. ")
        sys.exit()

except socket.gaierror:
        print("Hostname could not be resolved. ")
        sys.exit()

except socket.error:
        print("Couldn't connect to server. ")
        sys.exit()
```

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