

LENGUAJES y HERRAMIENTA PARA CIENCIAS DE DATOS I

Uso de Python como una calculadora III Cadenas



Definición de cadenas

- Tipo str
 - ◆ Concatenación de caracteres simples
 - Literales
 - Expresiones
 - ◆ Representación
 - Encerradas entre ‘ ‘ o “ “
 - Utilizar la \ para escapar las comillas

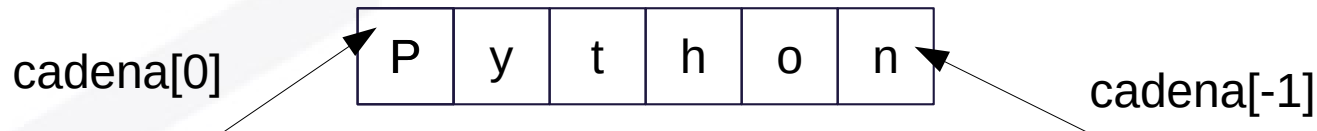
P	y	t	h	o	n
---	---	---	---	---	---

Definición de cadenas

```
m luque@hydrogen: ~  
File Edit View Search Terminal Help  
m luque@hydrogen:~$ python3  
Python 3.6.9 (default, Jan 26 2021, 15:33:00)  
[GCC 8.4.0] on linux  
Type "help", "copyright", "credits" or "license" for more information.  
>>> "hola mundo"  
'hola mundo'  
>>> 'hola mundo'  
'hola mundo'  
>>> 'Juan dijo \"¿Como vamos a ir?\"'  
'Juan dijo "¿Como vamos a ir?'"  
>>> 'I don\'t know it'  
"I don't know it"  
>>> 
```

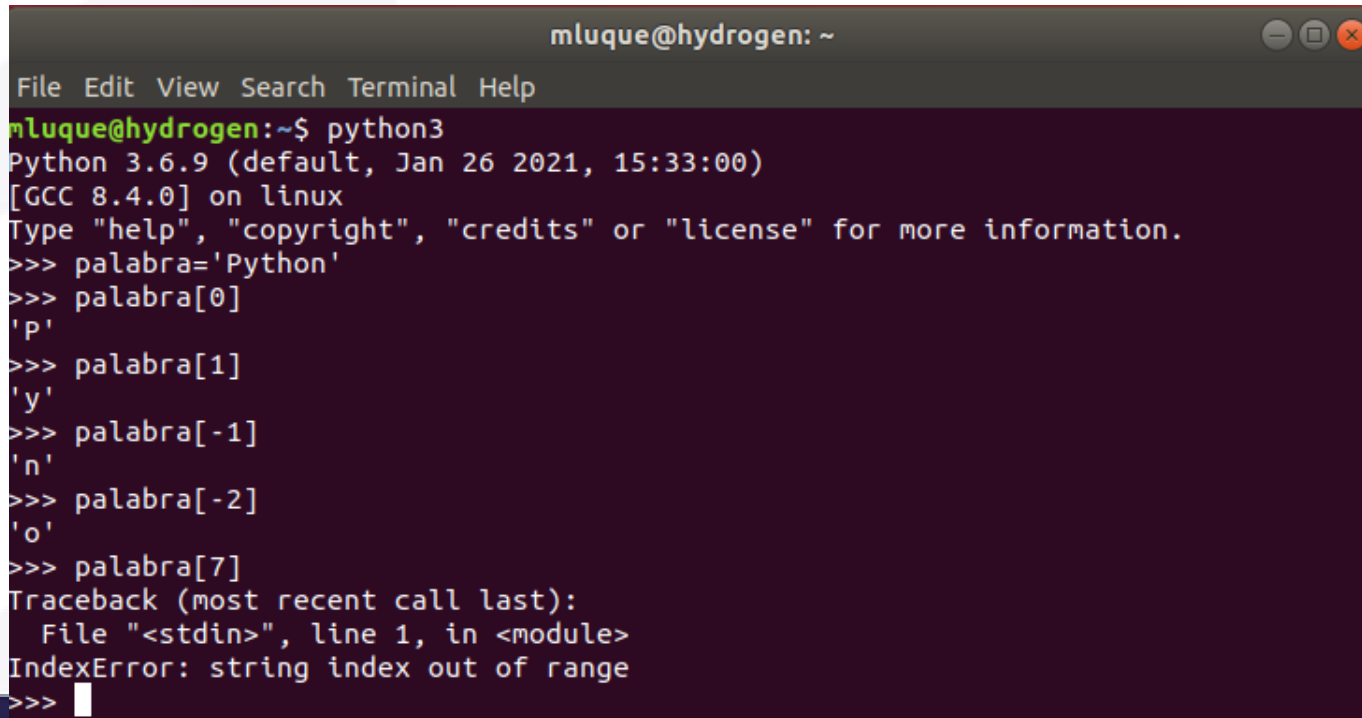
Indexar cadenas

- Acceder a cada elemento de la cadena
 - ◆ `cadena[i]`
 - `i` es un número entero positivo o negativo
 - ◆ El primer elemento ocupa la posición 0
 - ◆ Subíndices negativos para empezar por el final



Indexar cadenas

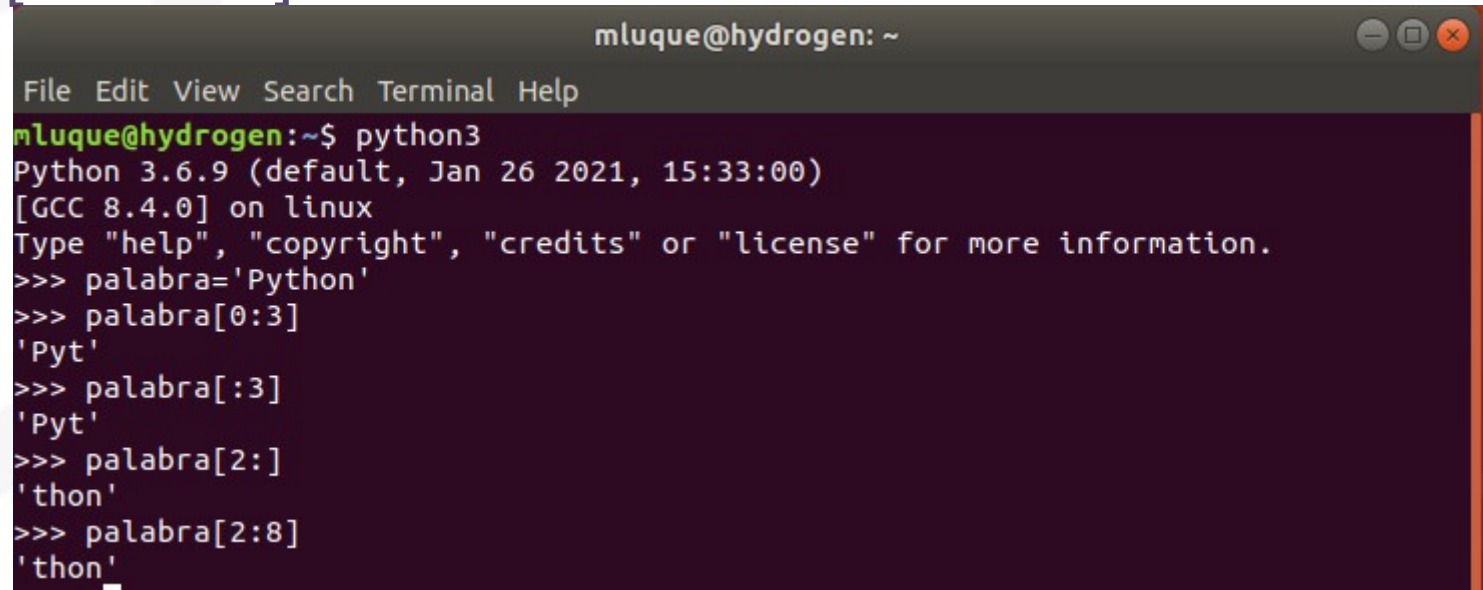
- Acceder a cada elemento de la cadena



```
m luque@hydrogen: ~  
File Edit View Search Terminal Help  
m luque@hydrogen:~$ python3  
Python 3.6.9 (default, Jan 26 2021, 15:33:00)  
[GCC 8.4.0] on linux  
Type "help", "copyright", "credits" or "license" for more information.  
>>> palabra='Python'  
>>> palabra[0]  
'P'  
>>> palabra[1]  
'y'  
>>> palabra[-1]  
'n'  
>>> palabra[-2]  
'o'  
>>> palabra[7]  
Traceback (most recent call last):  
  File "<stdin>", line 1, in <module>  
IndexError: string index out of range  
>>>
```

Indexar cadenas

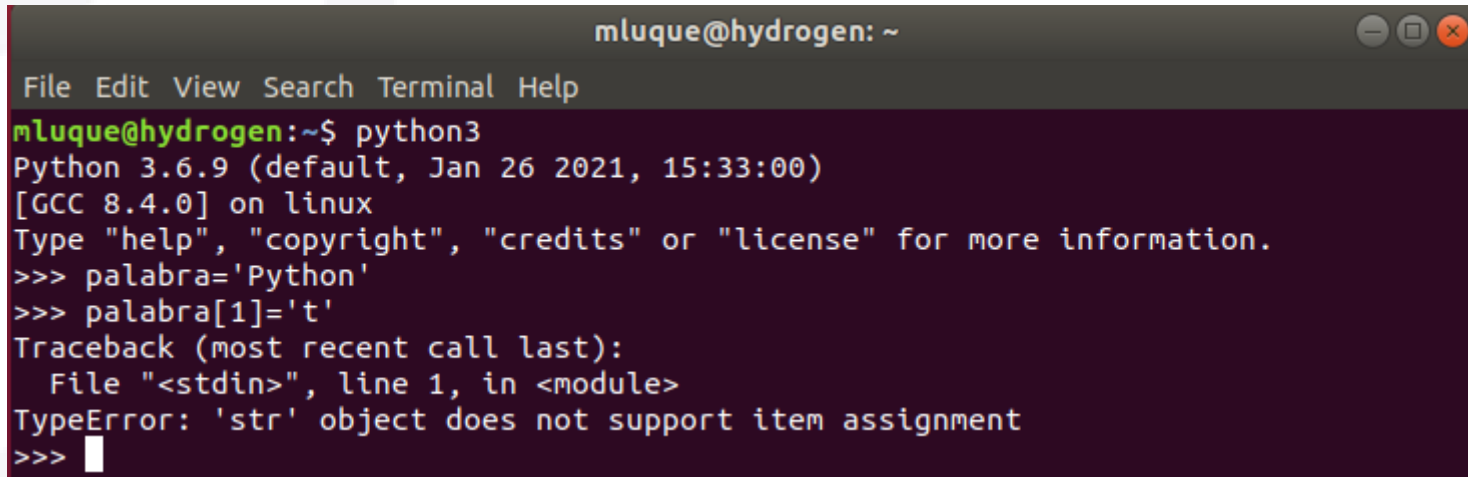
- Acceder a trozos de una cadena (subcadena)
 - ◆ `cadena[inicio:fin]`

A terminal window titled 'mluque@hydrogen: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows a Python 3.6.9 prompt where the string 'Python' is assigned to 'palabra'. Subsequent commands demonstrate slicing: 'palabra[0:3]' returns 'Pyt', 'palabra[:3]' returns 'Pyt', 'palabra[2:]' returns 'thon', and 'palabra[2:8]' returns 'thon'.

```
mluque@hydrogen: ~  
File Edit View Search Terminal Help  
mluque@hydrogen:~$ python3  
Python 3.6.9 (default, Jan 26 2021, 15:33:00)  
[GCC 8.4.0] on linux  
Type "help", "copyright", "credits" or "license" for more information.  
>>> palabra='Python'  
>>> palabra[0:3]  
'Pyt'  
>>> palabra[:3]  
'Pyt'  
>>> palabra[2:]  
'thon'  
>>> palabra[2:8]  
'thon'
```

Indexar cadenas

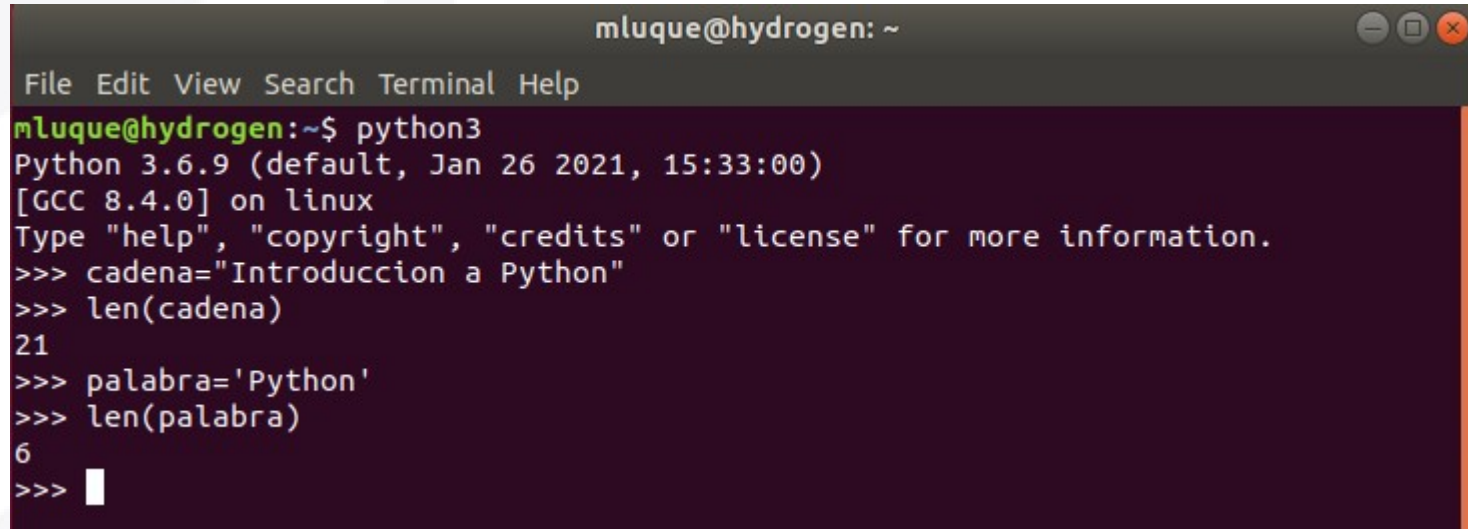
- Los cadenas son objetos inmutable
 - ◆ No se pueden modificar su caracteres



```
m luque@hydrogen: ~  
File Edit View Search Terminal Help  
m luque@hydrogen:~$ python3  
Python 3.6.9 (default, Jan 26 2021, 15:33:00)  
[GCC 8.4.0] on linux  
Type "help", "copyright", "credits" or "license" for more information.  
>>> palabra='Python'  
>>> palabra[1]='t'  
Traceback (most recent call last):  
  File "<stdin>", line 1, in <module>  
TypeError: 'str' object does not support item assignment  
>>> 
```

Longitud cadena

- Función incorporada *len*
 - ◆ `len(cadena)`



```
mluque@hydrogen: ~  
File Edit View Search Terminal Help  
mluque@hydrogen:~$ python3  
Python 3.6.9 (default, Jan 26 2021, 15:33:00)  
[GCC 8.4.0] on linux  
Type "help", "copyright", "credits" or "license" for more information.  
>>> cadena="Introduccion a Python"  
>>> len(cadena)  
21  
>>> palabra='Python'  
>>> len(palabra)  
6  
>>> 
```

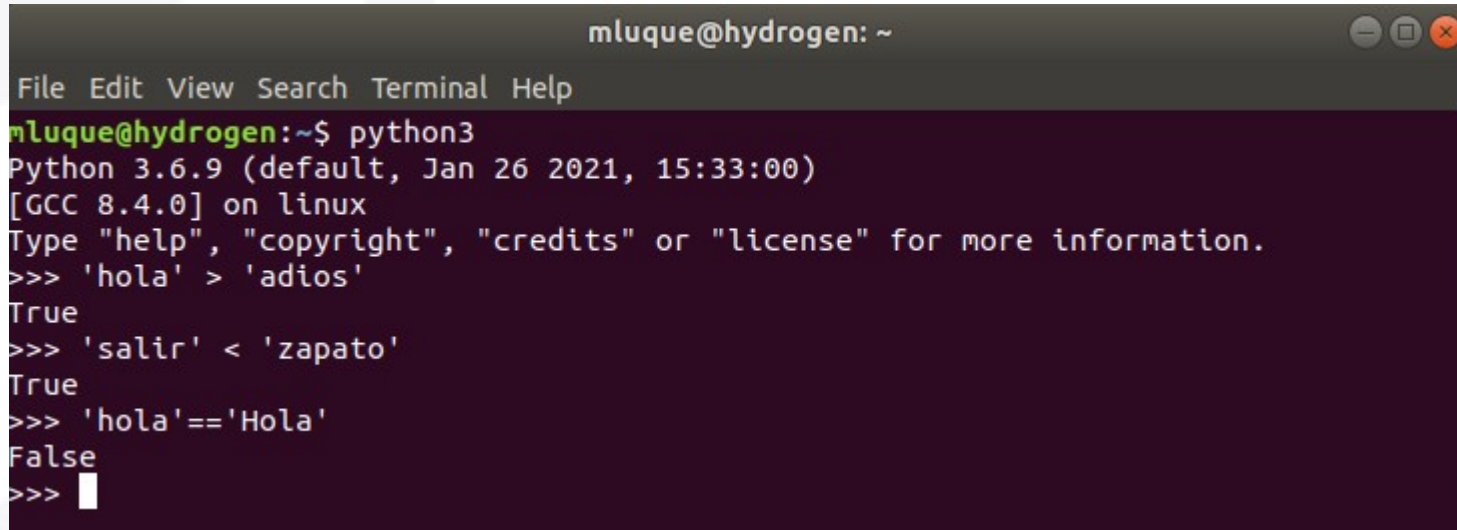

Concatenar cadenas

- Operador +
 - ◆ cadena1 + cadena2

```
mluque@hydrogen: ~  
File Edit View Search Terminal Help  
mluque@hydrogen:~$ python3  
Python 3.6.9 (default, Jan 26 2021, 15:33:00)  
[GCC 8.4.0] on linux  
Type "help", "copyright", "credits" or "license" for more information.  
>>> nombre='Maria'  
>>> frase='Mi nombre es '+nombre  
>>> frase  
'Mi nombre es Maria'  
>>> 'Estamos enseñando ' 'Python'  
'Estamos enseñando Python'  
>>>
```

Comparar cadenas

- <, > <=, >=, ==, !=
 - ◆ Comparación alfabética

A terminal window titled 'mluque@hydrogen: ~' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows a Python 3.6.9 shell session. The user enters 'python3', and the shell displays version and system information. Then, the user enters three comparison expressions: 'hola' > 'adios' (returns True), 'salir' < 'zapato' (returns True), and 'hola' == 'Hola' (returns False).

```
mluque@hydrogen: ~  
File Edit View Search Terminal Help  
mluque@hydrogen:~$ python3  
Python 3.6.9 (default, Jan 26 2021, 15:33:00)  
[GCC 8.4.0] on linux  
Type "help", "copyright", "credits" or "license" for more information.  
>>> 'hola' > 'adios'  
True  
>>> 'salir' < 'zapato'  
True  
>>> 'hola' == 'Hola'  
False  
>>> 
```

Métodos de str

- Transformación cadenas
 - ◆ lower, upper, title, capitalize, ...
 - ◆ replace, strip
- Determinar el tipo de caracteres en la cadena
 - ◆ isalnum, isalpha, isdigit, islower, isupper, ...
- Buscar dentro de una cadena
 - ◆ Count, find

Métodos de str

```
File Edit View Search Terminal Help
nluque@hydrogen:~$ python3
Python 3.6.9 (default, Jan 26 2021, 15:33:00)
[GCC 8.4.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> palabra="paraguas"
>>> palabra.upper()
'PARAGUAS'
>>> palabra.isalpha()
True
>>> palabra.isdigit()
False
>>> telefono='123456789'
>>> telefono.isdigit()
True
>>> telefono.isalpha()
False
>>> palabra.count('a')
3
>>> palabra.replace('a','o')
'poroguos'
```

