





POLITÉCNICA Universidad Politécnica de Madrid

# Practical IoT with Raspberry Pi

## Module 2: Introduction to Python Language

*Practical IoT with Raspberry Pi*



POLITÉCNICA Universidad Politécnica de Madrid

### Roadmap

- Compound data types:  
`list [], tuple (), dictionary {}`
- Control keywords:  
Loops: `while, for ... in`  
Decision: `if...elif...else`  
Breaks: `break, continue, else`
- Functions definition

Module 2: Introduction to Python Language Speaker: M. Hernando

## Practical IoT with Raspberry Pi



### 2.2 `list []`, `tuple ()`, `dictionary {}`



Module 2: Introduction to Python Language

Speaker: M. Hernando

## Practical IoT with Raspberry Pi



### 2.2 `list []`, `tuple ()`, `dictionary {}`

- **Lists:** a mutable list of values

```
my_list = [1, 2, 67, 23]
```

- **Tuples:** an immutable list

```
my_tuple = (2, "Two", 6)
```

- **Dictionaries:** a set of key-value

```
my_dictionary = {'two':2, 'three':3, 'nine':9}
```

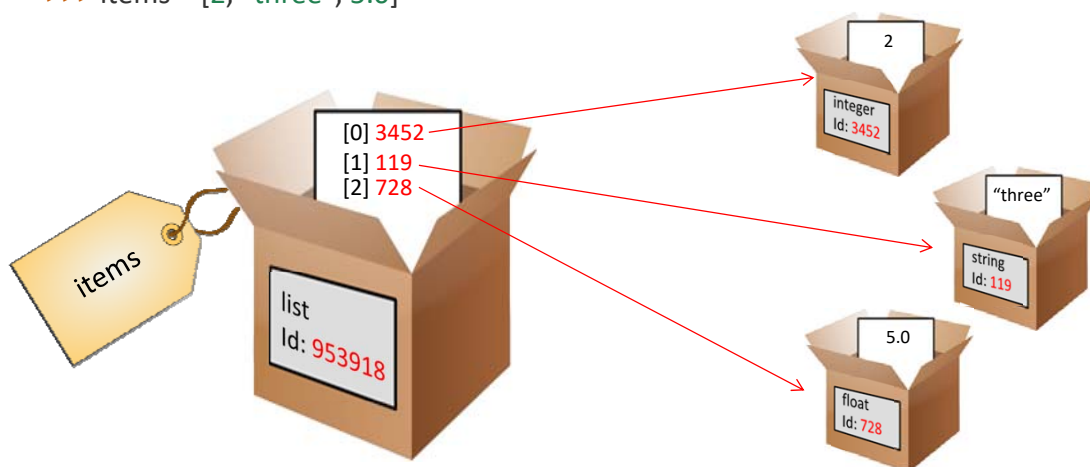
Module 2: Introduction to Python Language

Speaker: M. Hernando

## Lists: a mutable list of items

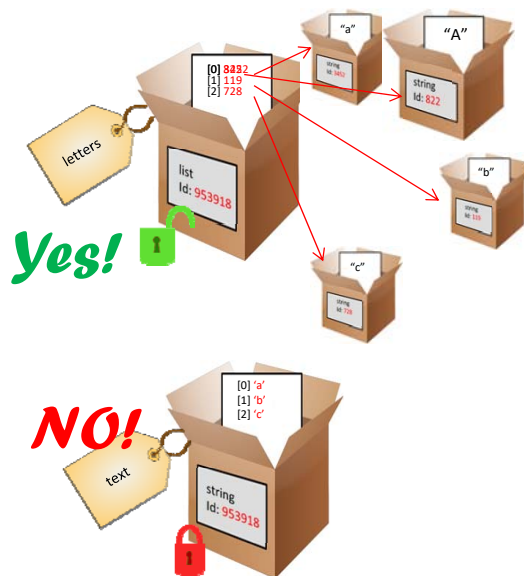
## Lists: a mutable list of items

```
>>> items = [2, "three", 5.0]
```



## Lists: a mutable list of items

## MUTABLE vs IMMUTABLE



## Practical IoT with Raspberry Pi



### Lists: a mutable list of items

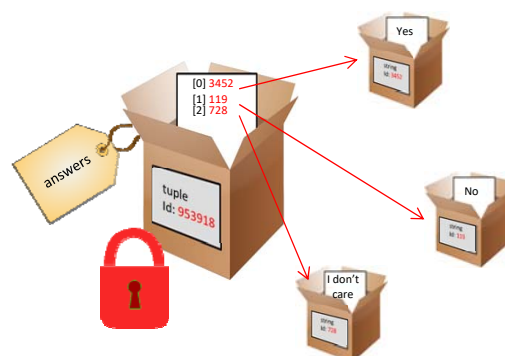
Module 2: Introduction to Python Language

Speaker: M. Hernando

## Practical IoT with Raspberry Pi



### Tuple: an immutable list

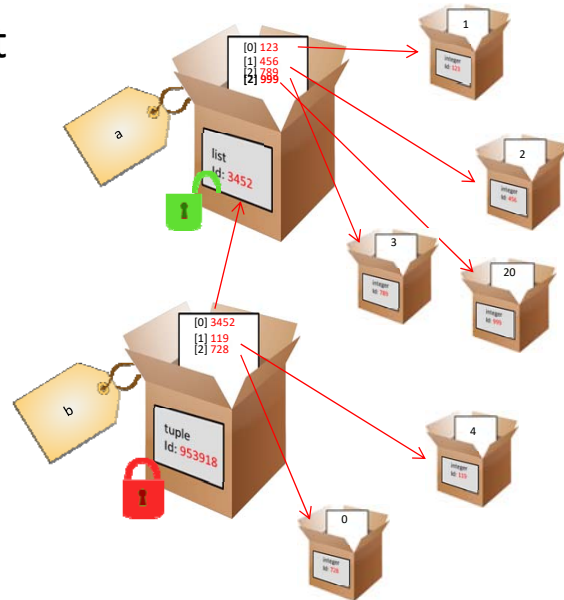


index	Value
0	"Yes"
1	"No"
2	"I don't care"

Module 2: Introduction to Python Language

Speaker: M. Hernando

## Tuple: an immutable list



## Dictionaries: a set of key-value

( Tuples )

[ Lists ]

{ Dictionaries }



## Practical IoT with Raspberry Pi



### Dictionaries: a set of key-value

**Access key** → **Info**

Name	Phone Number
John	645 98 67 67
Anne	788 56 54 78
Joseph	899 67 66 11
Claire	656 23 21 45

**key** → **value**

phones = { "John": 645986767, "Anne": 788565478 }

Module 2: Introduction to Python Language

Speaker: M. Hernando

## Practical IoT with Raspberry Pi



### Dictionaries: a set of key-value



Module 2: Introduction to Python Language

Speaker: M. Hernando

## Dictionaries: a set of key-value

## Summary

- ✓ **Lists**, methods and operations

```
my_list = [1, 2, 67, 23]
```

- ✓ **Tuples**, immutable lists

```
my_tuple = ('a', 2, 3)
```

- ✓ **Dictionary**, key-value set

```
my_dict = {'I':1, 'V':5, 'X':10}
```

- ✓ **Mutable & Immutable**