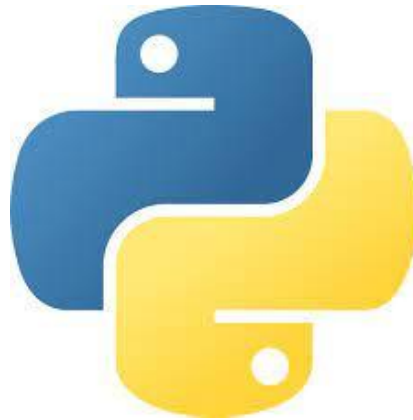


# Introduction to Python

---



# Python ?

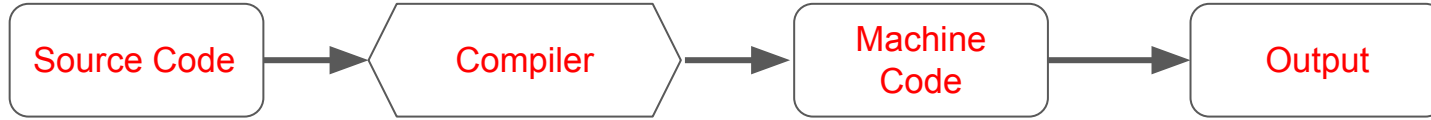
- General purpose programming language
- Often applied in scripting roles i.e scripting language.
- Also called as Interpreted language

## Difference Between Programming language and Scripting language -

<u>Program</u>	<u>Scripting</u>
1. Program is executed.	1. Script is interpreted.
2. Sequence of instruction written to perform a task	2. Code to control other software application



## Compiler



- Execute entire program in one go.
- Best suited for production environment.
- C,C++,C#,Java etc

## Interpreter



- Execute single line of code at a time.
- Best suited for development environment.
- Python,PHP,Ruby etc



## Uses of python ?

- Create web applications (server-side)
- Software development (creating workflows).
- Database systems to access the files.
- Handle big data and perform complex mathematics.
- Rapid prototyping, production-ready software development



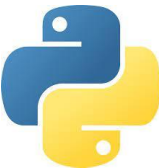
## Who uses python today ?

- Real revenue-generating products by companies.
- Google uses in web search system
- Intel, Cisco, Hewlett-Packard, Seagate, Qualcomm and IBM uses in hardware testing.
- ESRI ( Environmental Systems Research Institute) use as an end-user customization tool for its GIS (Geographic information system) mapping products.
- YouTube video sharing service



## Why Python ?

- Object-oriented language
- Indentation
- Free ( open source)
- Powerful
- Portable
- Mixable
- Easy to use
- Easy to Learn



## Python syntax compare to other languages ?

- Similarities to the English language with influence from mathematics.
- Python uses new lines to complete a command rather than using semicolons or parentheses.
- Python relies on indentation, using whitespace, to define scope (loops, functions and classes) rather than using curly-brackets.



## Essentials ?

- Recent major version of Python is Python 3 (python 3.9.6 June 28,2021)
- Python in an **Integrated Development Environment**, such as Thonny, Pycharm, Netbeans or Eclipse provides a text editor, debugging and other features.
- **Anaconda** is also a tool to focused on data driven projects that aims to simplify package management and deployment.
- Google Colab





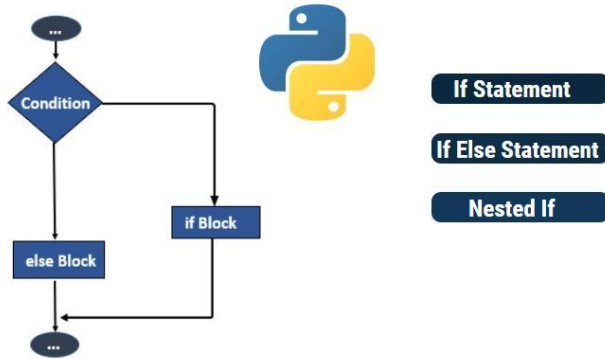
Topics to be covered in this lecture:

- Control flow Statements
- Python data structure



# Control flow Statements

## If Else Statement in Python

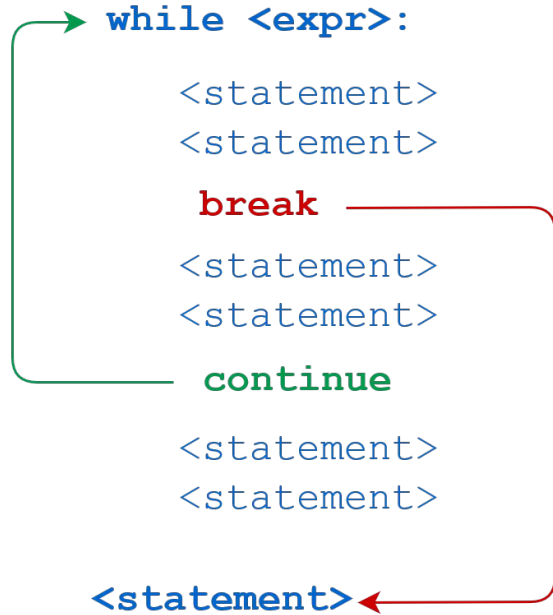


```
In [1]: a = 10  
        b = 20  
        if a == b:  
            print('yes')  
        else:  
            print('no')
```

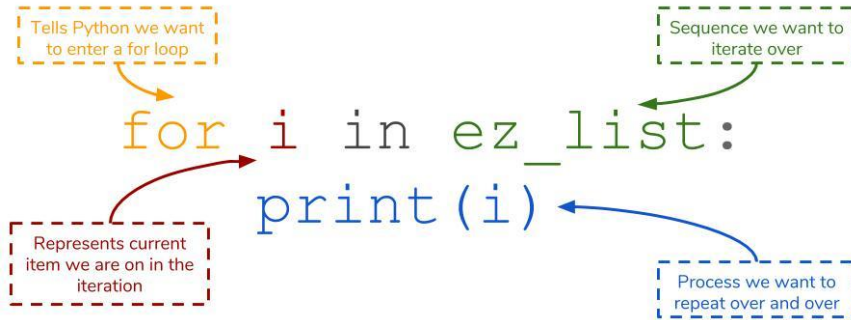
no



## Continue ; Break



# Loops:



```
while x < y:
```

```
    while x < y:
```

```
        print(x)
```

```
        if x == z:
```

```
            break
```

```
    else:
```

```
        print("...")
```



## Indexes -

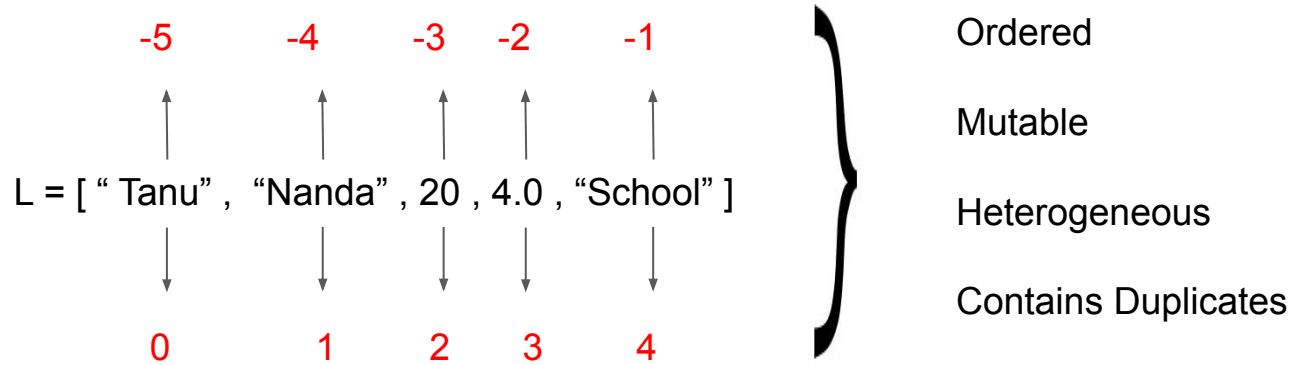
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<i>-12</i>	<i>-11</i>	<i>-10</i>	<i>-9</i>	<i>-8</i>	<i>-7</i>	<i>-6</i>	<i>-5</i>	<i>-4</i>	<i>-3</i>	<i>-2</i>	<i>-1</i>

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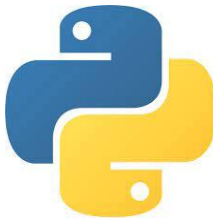
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# Python data structure

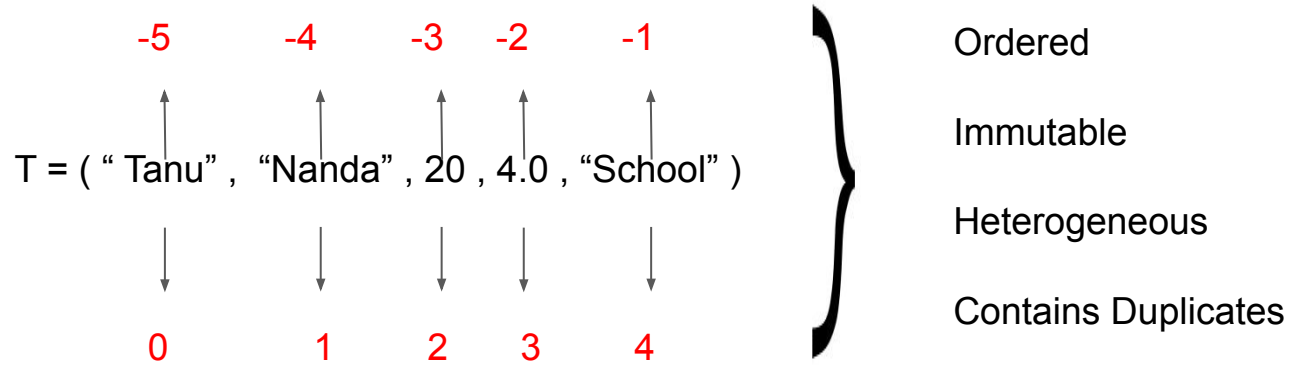


## Lists



# hash()

Method returns the hash value of an object if it has one



## Tuple





