Install Python

`Python` installation gives you following things by default -

- `Python libraries`
- `Binaries`
- `IDLE (IDE for writing single line python code)`
- `Python interpreter`

Windows

- `Command Prompt (default app on windows machine)`
- `Commands` `Python` -> `Python interpreter`

- `Python interpreter` runs code line by line

Terminology

- plain-text: text without formatting
- rich-text : text with formatting (bold, italic, underline, background highlighting...etc)
- IDE (Integrated Developement Environment) - editors created dedicated for programming languages are called as IDE.
- Examples of IDE - vim, emacs, eclipse, pycharm, jupyter-notebook, spider, vs-code, ...etc
- pseudo-code - steps to perform certain task written in human language
- library - collection of functionality
- GUI : Graphical User Interface
- variable : - reference to a memory location

  - `label`

- Syntax: Rules of programming language

In [ ]:

```
   name     profession  skill     insti
["prashant"]["engineer"]["python"]["velocity"][][][][]
```

In [ ]:

```
name = "prashant"
```

RULE -

- code always has to be written in `plain-text`

In [ ]:

```
- Most widely programming language - `Java`
- Most popular programming lang - `Python`



##### Examples of languages

C
C++
C#
html
.net
R
Ruby
CSS
Javascript
SQL
AngularJS
Swift
Golang
Typescript
ReactJS
PHP
Kotlin
NodeJS
COBOL

ABAP (SAP)
```

In [ ]:

```
Object-oriented programming

    object (data) - functionality1
                  - functionality2
                  - functionality3


Procedure-oriented programming

    input -> functionility -> output
```

Types of application

Application = interface (front-end) + back-end

- Desktop application (front-end, back-end : Python)
- Mobile application (front-end, back-end : Python)
- Web portal (website) (back-end: Python)

Features of `Python`

- Easy to code

- Easy to read
- Free and open source
- Robust library support (community)
- Interpreted (line by line code execution)
- portable
- Both Object-oriented and procedure-oriented programming are supported
- Exensible
- Supports GUI
- Dynamically typed (duck typing)

Python - excel manipulation

Library function1 function2 function3 ....

pseudo code vs python code

- Step 1: open a file called `test.txt`
- Step 2: read content of file line by line
- Step 3: print lines which start with `India`

In [3]:

```
with open("test.txt") as foo:
    for line in foo.readlines():
        if line.startswith("India"):
            print(line)
```

```
India is great

India is big country

India is love
```

In [ ]:

```
### c/ java/ cpp programming

string name;
name = "prashant";
```

In [ ]:

```
name = "prashant"
```

basic data types in python

- int (1, 20, 3000, ...)

- float (20.30, 40.40, 0.5,...)

- string ("prashant", "python", "velocity")

- boolean (True, False)

In [ ]:

```
- "Don't check whether something is duck. Just check if it quaks like a duck and wal
```