```
In [1]:   1   ### Literate Programming
          2   - Programming along with documentation
          3   - maintaining notes
          4
```

...

```
In [2]:   1   coding/programming
          2        - we provided the solution for the given question/task
          3
```

...

```
In [3]:   1   interlinked--python file
          2
```

...

```
In [4]:   1   python,julia,html,R and matlab....languages
          2
```

...

```
In [5]:   1   ##
          2   Chapter Name
          3   Headings
          4   Sub headings
          5   parapraghs/description
          6
```

...

Python

- It is a general purpose, high level and interpreted language
- It is semi-object oriented programming language
- General purpose
  - It is used for many purposes
- high level language
  - user understandable language
- interpreted language
  - it gives us the line by line execution
- **Features of Python**
  - Simple to learn and easy to code
  - it is syntax free
  - it is case sensitive and space sensitive
- similar to English language
- words,user convient
- **Need of Python**
  - Scientific Computation
  - Integrations,derivations,logorithms,exponentials etc..
  - it is the build block of all current running technologies such as
    - Data Science, Cloud Computing,Web development,application s/w, system s/w Machine Learning,Robotics, IOT etc...
  - C language is used to design the Operating System
  - Java accesories--

■ Python running.

```
In [4]:    1  # write a python program to print "welcome to python"
           2  # single line comments
           3  '''
           4      ---- mutliple line comments
           5  '''
```
...

```
In [5]:    1  # line by line
           2  # is used to display the message on screen
           3  print("double quotations") # text, new line
           4  print('single quotations') # text
```
```
double quotations
single quotations
```

```
In [7]:    1  # "welcome to python"
           2  print("Welcome to Python")
           3  print('Welcome to Python')
```
```
Welcome to Python
Welcome to Python
```

heading1

Heading2

heading3

heading4

python

vemu college

I am *Italic*

I am **Bold text**

I am ***Bold italic*** in this line

I am *italic*
I am **bold** in this sentence
I am ***bold italic***

```
In [7]:    1  ....markdown syntax......
           2  # represent the Heading1
           3  ## heading2
           4  ### heading3...
           5  ###### heading6
```

```
6  *italic text*
7  **bold text**
8  *** bold italic text***   ...
```

In [8]:
```python
1  #  write a python program to add 2 no.s
2  # 4+6=10 value which is integer
3  print("4+6098u874bnfhfuiyfdjdfkjiglihdjhdusdfjkdfikjd") # text,string
4  print('4+6') # string/text
5  print(4+6) # value,integer
6
```

```
4+6098u874bnfhfuiyfdjdfkjiglihdjhdusdfjkdfikjd
4+6
10
```

In [9]:
```python
1  5+10 # returns value to the processor/kernel
2
```

Out[9]: 15

In [12]:
```python
1  print("started with double quotes and ended with single quoates')
2  # won't work
3
```

```
  File "<ipython-input-12-652858fac634>", line 1
    print("started with double quotes and ended with single quoates')
                                                                     ^
SyntaxError: EOL while scanning string literal
```

Errors in Python

- Error is an invalid statement in program
- 3 types
  - Syntax Error
    - Error is related to Syntax
  - Type Error and
    - Error related to type or value
  - Indetation Error
    - Error related to space

In [13]:
```python
1  # arithmetic operations on numbers
2  # "example": can you subtract your lastname from your full name:
3  9-45
4
```

Out[13]: -36

In [14]:
```python
1  "45"+45 # type error
2
```

```
-----------------------------------------------------------------------
-----
TypeError                                 Traceback (most recent call
last)
<ipython-input-14-1973aed77365> in <module>
```

Variables in Python

- A variable is a container that stores the data/vallue
- No type declaration in python
- num=45 # integer
- name="ruthu" # string
- multi variable assignment
- multi value assignment

In [15]:
```python
1  x=10
2  y=10
3  z=15
4  print("value of x",x) # separate the outputs by ','
5
```

value of x 10

In [16]:
```python
1  print("value of y",y) #
2
```

value of y 10

In [17]:
```python
1  print(z)
2
```

15

In [22]:
```python
1  x,y,z=10,10,15 # mutliple assignments in single line
2  print("value of x",x)
3  print('value of y',y)
4  print(z)
```

value of x 10
value of y 10
15

In [18]:
```python
1  # mutli variable assignments to a single value
2  f=s=th=10 # it is possible
3  print("first is ",f)
4  print("second is ",s)
5  print("third value is ",th)
6
```

first is 10
second is 10
third value is 10

In [19]:
```python
1  ''' 3 types of erros
2  1)syntax error--syntax '''
3  print("Hi I am') # invalid statement
```

```
  File "<ipython-input-19-a5550f8ac15f>", line 3
    print("Hi I am') # invalid statement
                                        ^
SyntaxError: EOL while scanning string literal
```

In [22]:
```python
1  print(4+5) # numbers
2  print(10*5)
3  print(9-56)
4  print(10/3) # float division
5  print(10//3) # integer division/exact division
6
```

```
9
50
-47
3.3333333333333335
3
```

In [23]:
```python
1  "words1" + "words2" # concatenation
2
```

Out[23]: 'words1words2'

In [24]:
```python
1  45+6
2
```

Out[24]: 51

In [26]:
```python
1  45+"sindhu"  # type error
2
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-26-f4b77e52ce7a> in <module>
----> 1 45+"sindhu"  # type error

TypeError: unsupported operand type(s) for +: 'int' and 'str'
```

In [ ]:
```python
1
```