

## → History:

- 'Guido Van Rossum' invented python programming language in 20th of february 1991.
- The python came from a comedy circus which was telecasted in BBC & the name is 'The Monty's Python Flying Circus'.

→ Python is general purpose, Object Oriented, scripting, dynamically typed, high level and interpreted.

## → Features of python

1. Dynamically typed programming language: In case of this there is no need to declare the data type of a variable and we can change the values of variables at any time.
2. Interpreted programming language:

Compiler	Interpreter
<ul style="list-style-type: none"><li>• It is used to compile &amp; execute the program</li><li>• The compiler will compile entire set of code once &amp; at last it will execute</li><li>• Because of the above stat at the end of execution, will be having a bunch of errors, it will make the programmer difficult to understand &amp; debug an app</li></ul>	<ul style="list-style-type: none"><li>• It is used to compile &amp; execute the program.</li><li>• The interpreter will compile &amp; execute each &amp; every line of code simultaneously.</li><li>• Since the interpreter executes line by line it will make the programmer easy to test an application</li></ul>

3. Executes line by line - Scripting language.

4. Portable: It will support platforms like windows, Linux, Mac.

5. Open Source programming language.

6. Free-Source platform.



7. Python has easier syntax & less no of instruction.
8. Python supports Indentation (space)
9. Case sensitive programming language : Uppercase alphabets differs from lower case alphabet based on the ASCII values.

→ ASCII - American Standard code for information Interchange

- The common difference among lowercase alphabet ASCII value & uppercase alphabet ASCII value is 32.
- If we add 32 to the uppercase alphabet ASCII value we will get ASCII value of lowercase alphabet.
- If we subtract 32 from lowercase alphabet ASCII value we will get ASCII value of uppercase alphabet.

1) ord ( ) <sup>var/val/char</sup>  
                     ↓  
                     ASCII  
 This function will take char as i/p & it will return ASCII value of that character.

2) chr ( ) <sup>ASCII</sup>  
                     ↓  
                     val/char  
 This function will take ASCII value as i/p & it will return character as o/p.

A = 65 , B = 66 , C = 67 , D = 68

a = 97 , b = 98 , c = 99 , d = 100

### Conversion of capital to lowercase alphabet

```
z = 'A' # Assigning value to variable
x = ord(z) # ASCII value of character
y = x + 32 # ASCII value of desired char
u = chr(y) # desired character
print(u) # print
→ 'a' # Output
```

```
z = 'A'
print(chr(ord(z) + 32))
print(chr(ord('A') + 32))
print(chr(65 + 32))
print(chr(97))
print('a')
'a' → Output.
```

### Conversion of lower to Capital alphabet

```
z = 'a' # Assigning value to variable
x = ord(z) # ASCII value of character
y = x - 32 # ASCII value of desired char
u = chr(y) # desired character
print(u) # print
→ 'A' # Output
```

```
z = 'a'
print(chr(ord(z) - 32))
print(chr(ord('a') - 32))
print(chr(97 - 32))
print(chr(65))
print('A')
'A' → Output.
```



Program to convert lowercase to uppercase & uppercase to lowercase alphabet using `char()` & `ord()` function.

```

print(char(ord('a')+32))
print(char(ord('b')+32))
print(char(ord('c')+32))
print(char(ord('d')+32))
print(char(ord('e')+32))
print(char(ord('f')+32))
print(char(ord('g')+32))
print(char(ord('h')+32))
print(char(ord('i')+32))
print(char(ord('j')+32))
print(char(ord('k')+32))
print(char(ord('l')+32))
print(char(ord('m')+32))
print(char(ord('n')+32))
print(char(ord('o')+32))
print(char(ord('p')+32))
print(char(ord('q')+32))
print(char(ord('r')+32))
print(char(ord('s')+32))
print(char(ord('t')+32))
print(char(ord('u')+32))
print(char(ord('v')+32))
print(char(ord('w')+32))
print(char(ord('x')+32))
print(char(ord('y')+32))
print(char(ord('z')+32))

```

```

print(char(ord('A')-32))
print(char(ord('B')-32))
print(char(ord('C')-32))
print(char(ord('D')-32))
print(char(ord('E')-32))
print(char(ord('F')-32))
print(char(ord('G')-32))
print(char(ord('H')-32))
print(char(ord('I')-32))
print(char(ord('J')-32))
print(char(ord('K')-32))
print(char(ord('L')-32))
print(char(ord('M')-32))
print(char(ord('N')-32))
print(char(ord('O')-32))
print(char(ord('P')-32))
print(char(ord('Q')-32))
print(char(ord('R')-32))
print(char(ord('S')-32))
print(char(ord('T')-32))
print(char(ord('U')-32))
print(char(ord('V')-32))
print(char(ord('W')-32))
print(char(ord('X')-32))
print(char(ord('Y')-32))
print(char(ord('Z')-32))

```