Tokens in Python

- The smallest unit/element in the python program/script is known as a Token or a Lexical unit.
- Python has following Tokens:
  - Keywords
  - Identifiers
  - Literals
  - Operators
  - Punctuators

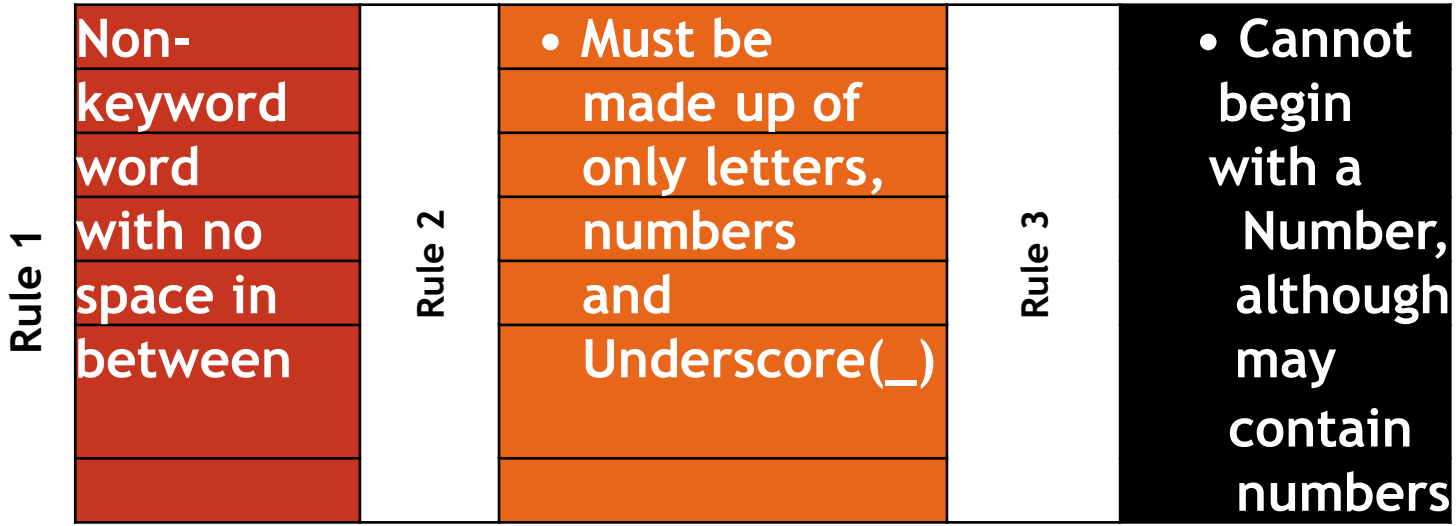
Keywords

Keywords are the reserve words/pre-defined words/special words of python which have a special meaning for the interpreter.

False	True	None	def	if
lambda	class	yield	continue	else
assert	or	while	break	elif
del	from	is	not	pass
for	global	finally	import	as
in	nonlocal	return	With	And
int	except	Raise	print	

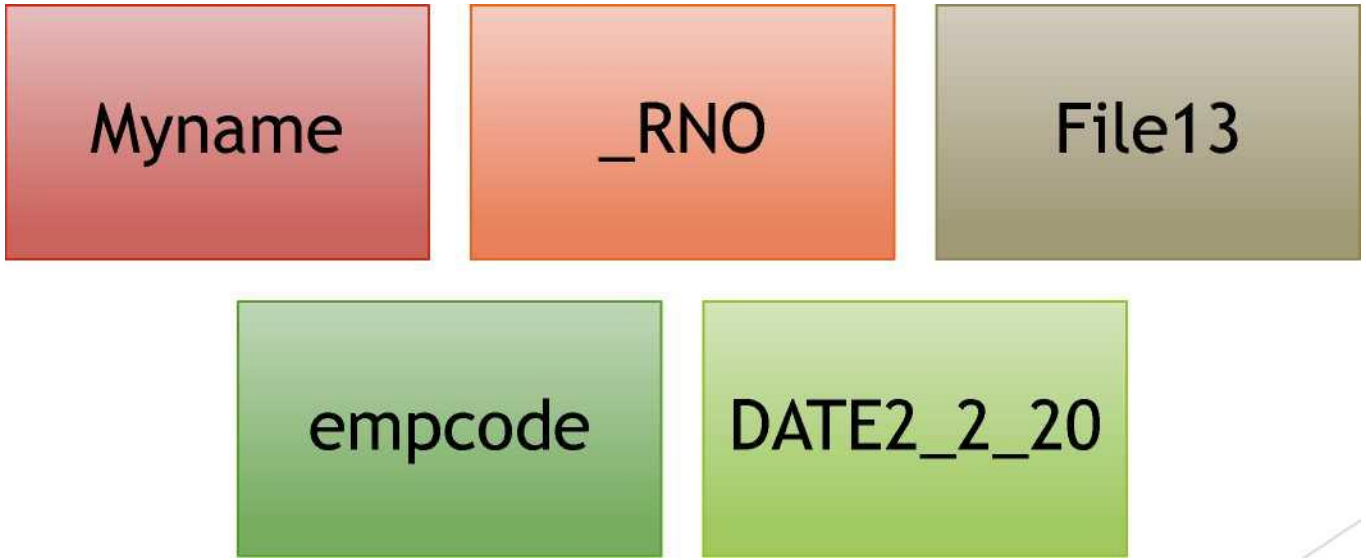
Identifiers(user defined names)

- Identifiers are the **name** given to the different **programming elements** like variables, objects, classes, functions, lists, dictionaries etc.



Identifiers

Some Valid Identifiers:



Identifiers

Some Invalid Identifiers:

VID-REC

- Contains special character -(hyphen)

2020RNO

- Starting with a Digit

continue

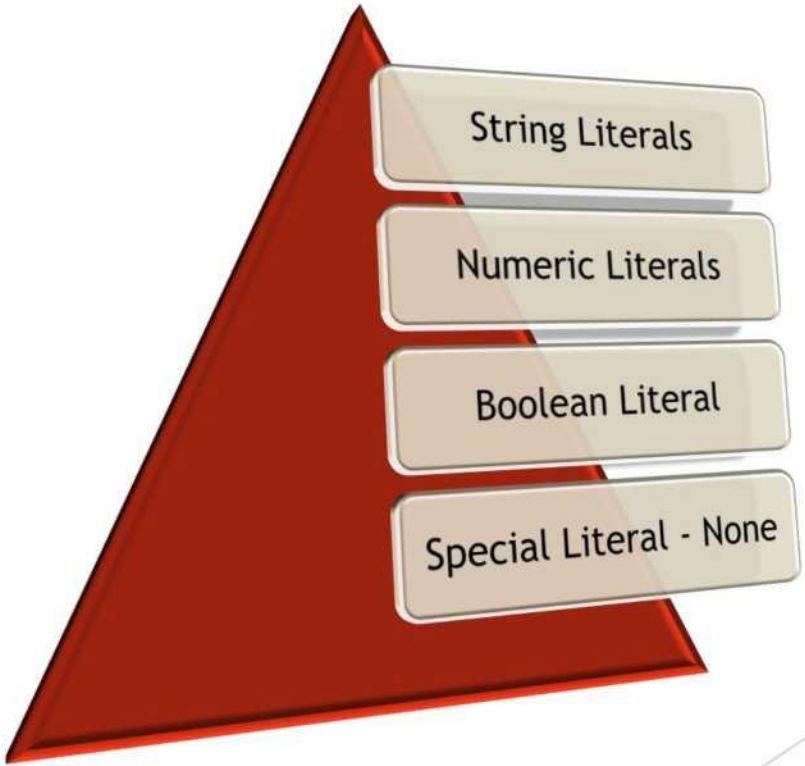
- Reserved keyword

Emp.Code

- Contains special character . (dot)

Literals

- Literals are the data items that have a fixed or constant value



String Literals

- A string literal is a sequence of characters surrounded by Quotes (Single, Double or Triple Quotes).

Single Line Strings

- Must terminate in one line

MultiLine Strings

- Spread across multiple lines

String Literals

Single line String

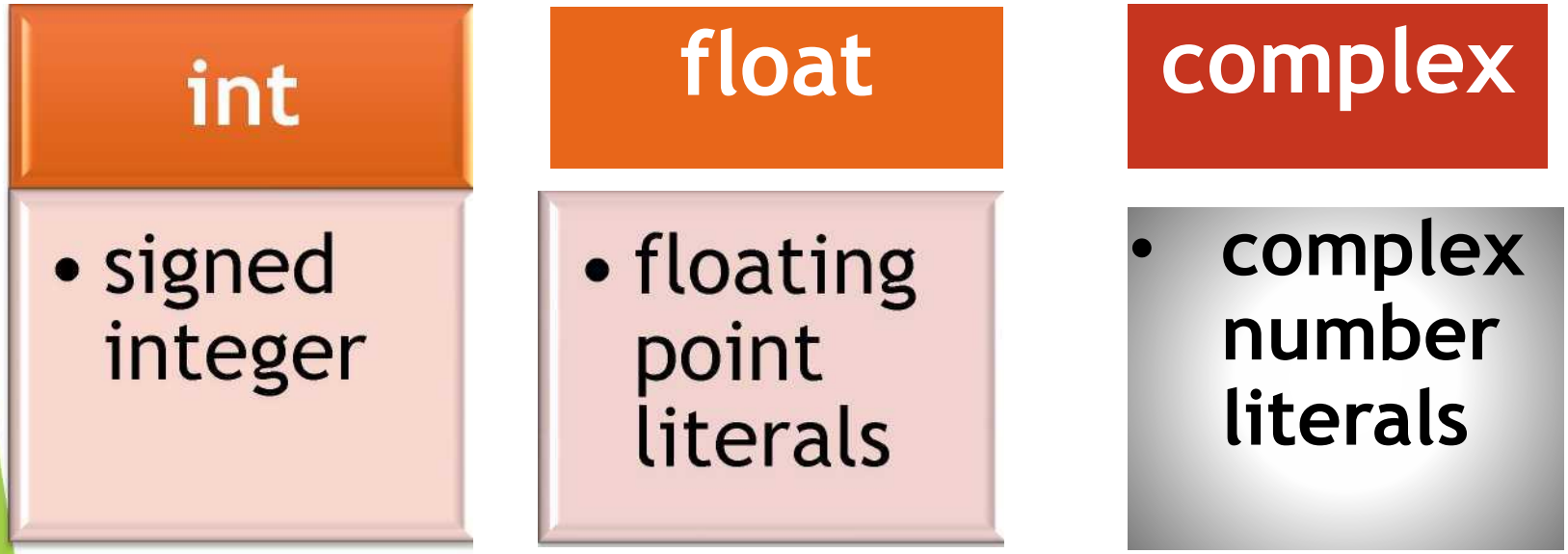
```
>>>Txt1 = “Hello World”
```

Multiline string

```
>>>Txt2 = “Hello\
World”
>>>Txt3 =‘’’Hello World”’
```

Numeric Literals

- Numeric Literals are numeric values like integer floating point number or a complex number



Numeric Literals

- integer literals

Decimal Form	Octal Form	Hexadecimal form
• Digits 0-9 • Base 10 • e.g. 1234	• Begin with Oo • Base 8(0-7) • e.g. 0o32	• Begin with Ox • Base 16(0-9,a-f) • e.g.OxAF

Numeric Literals

- Floating Point Literals/ Real Literals & Complex Numbers

Floating point		Complex Number
• Decimal point		• a+bj form
divides the		• a & b are real
integer and fraction part		• j = v-1, imaginary • e.g. 2+3j
• e.g. -13.0, 3.E2, 0.17E5		

Boolean Literals

- A Boolean literal in Python is used to represen one of the two Boolean Values i.e. True or False

Boolean True

Boolean False

Special Literal - None(empty legal value)

In python, None literal is used to indicate absence of value

Operators in Python

► Operators are the symbols or words that perform some kind of operation on given values (operands) in an expression and returns the result.

arithmetic	• +,-,/,*,%,**,//
bitwise	• &, ^, |
identity	• is, is not
relational	•>,<,>=,<=,==,!=
logical	• and, or
shift	• <<, >>
assignment	• =
membership	• in, not in
arithmetic-assignment	+=,-=,//=,**=,*=,/=

Punctuators in Python

- Punctuators are the **symbols** that are used in programming language **to organize sentence structure**, indicate the rhythm and **emphasis of expressions**, statements and **Program Structure**.
- Common Punctuators are:

Tokens in Python

- Keywords are the reserve words of python which have a special meaning for the interpreter.
- Identifiers are the name given to the different programming elements like variables, objects, classes, functions, lists, dictionaries etc.
- Literals are the data items that have a fixed /constant value.
- Operators are the symbols or words that perform some kind of operation on given values (operands) in an expression and returns the result.
- Punctuators are the symbols that are used in programming language to organize sentence structure, indicate the rhythm and emphasis of expressions, statements and Program Structure.