Identifiers

Identifier is a user defined word, which is used to identify programming elements.

1. Variable name
2. Function name
3. Data type name
4. Program name/module name
5. Package name
6. Constant name

Identifier is a single word, it is created using alphabets (A-Z,a-z English), other languages,0-9 (digits) and allows only one special character _

Rules for defining identifiers

1. Identifier should not be keyword
```
>>> a=10
>>> a
10
>>> abc=100
>>> abc
100
>>> pass=200
SyntaxError: invalid syntax
```

2. Identifier start with alphabet or _ (OR) identifier should not start with digit or special character (except _)
```
>>> $amt=100
SyntaxError: invalid syntax
>>> n1=10
>>> n2=20
>>> 3n=30
SyntaxError: invalid decimal literal
>>> _n=100
>>> _n
100
>>> n_=200
>>> n_
```

```
200
>>> _=300
>>> _
300
>>> _n_=400
>>> _n_
400
```

3. There should not be any space between identifier

```
>>> student rollno=1
SyntaxError: invalid syntax
>>> student sub1 marks=60
SyntaxError: invalid syntax
>>> student_rollno=1
>>> student_rollno
1
```

4. Identifiers can be defined in uppercase or lowercase. Python is case sensitive language and finds the difference between uppercase and lowercase

```
>>> a=100
>>> A=200
>>> a
100
>>> A
200
```

5. The maximum length of identifier is unlimited

```
>>> aaaaaaaaaaaaaaaaaaaaaaaa=100
>>> aaaaaaaaaaaaaaaaaaaaaaaa
100
>>> bbbbbbbbbbbbbbbbbbbbbbbb=200
>>> bbbbbbbbbbbbbbbbbbbbbbbb
200
```

Literals and Data types

What is literal?
Literal is nothing a value which never changed.
Python support various types of literals
  1. Numeric literals
  2. Non Numeric literals

What is data type?
Data type defines for which type of data how much memory has to reserve.
Data types are used to represent data within memory.
Python data types are classified 2 categories

  1. Scalar Data types
  2. Collection Data types

Scalar data types
Scalar data types are used to represent single value within memory.
Python support 5 scalar data types

  1. Int
  2. Float
  3. Complex
  4. Bool
  5. NoneType

Collection Data types
Collection data types are used to represent more than one value.
Based on organization of data, these collection data types are classified
into 3 categories

  1. Sequences
       a. List
       b. Tuple
       c. String
       d. Range
       e. Bytes
       f. Bytesarray
  2. Sets
       a. Set
       b. Frozenset
  3. Mapping

      a. Dictionary

Collection and scalar data types are called standard data types of python. Python support 14 standard data types.

Int data type

"int" is predefined data type in python.
This data type is used to represent integer literals or values in memory.

What is integer literal or value?
Integer is a numeric value without fractional part.
Example: whole numbers, even numbers, odd numbers, prime numbers, ..

How much memory is reserved by "int" data type (OR) size of int data type in python?