Identifier
Identifier is user defined word.
Identifiers are used to identify programming elements.

1. Variable name
2. Function name
3. Class name
4. Module name
5. Package name

Identifier is user defined word, which is created using alphabets(A-Z,a-z),digits(0-9) allows one special character _

Rule:

1. Identifier should not be keyword

```
>>> rollno=1
>>> rollno
1
>>> pass=40
SyntaxError: invalid syntax
>>>
```

2. Identifier should not start with digit

```
>>> no1=100
>>> 1no=100
SyntaxError: invalid syntax
>>>
```

3. Identifier is only one word, there should not be any space between identifier

```
>>> student rollno=1
SyntaxError: invalid syntax
>>>
```

4. If identifier is having multiple words it is separated with _

```
>>> student_rollno=1
>>> _no=1
>>> no_=2
>>>
>>> _
100
```

```
>>>
```

5. Identifier length can be of any length

```
>>>
aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa=100
>>> aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa
100
>>>
aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa=200
>>>
```

6. Identifier can be defined in upper case or lowercase. Python is case sensitive language it finds the difference between upper case and lower case

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

Data Types

What is data type?

Data types are used to allocate memory for data.

Data type defined for which type of data how much memory has to be reserved.

Python data types are classified into different categories.

1. **Standard Data types**
    a. int
    b. float

c. complex
d. bool
e. None

2. **Collection types or Data structures**
    a. **Sequence types**
        i. Range
        ii. List
        iii. Tuple
        iv. String
        v. Bytes
        vi. bytesarray
    b. **Non Sequence types**
        i. Set
        ii. Frozenset
        iii. Dictionary

Standard data types represents one value.
Collection data types represents more than one value.

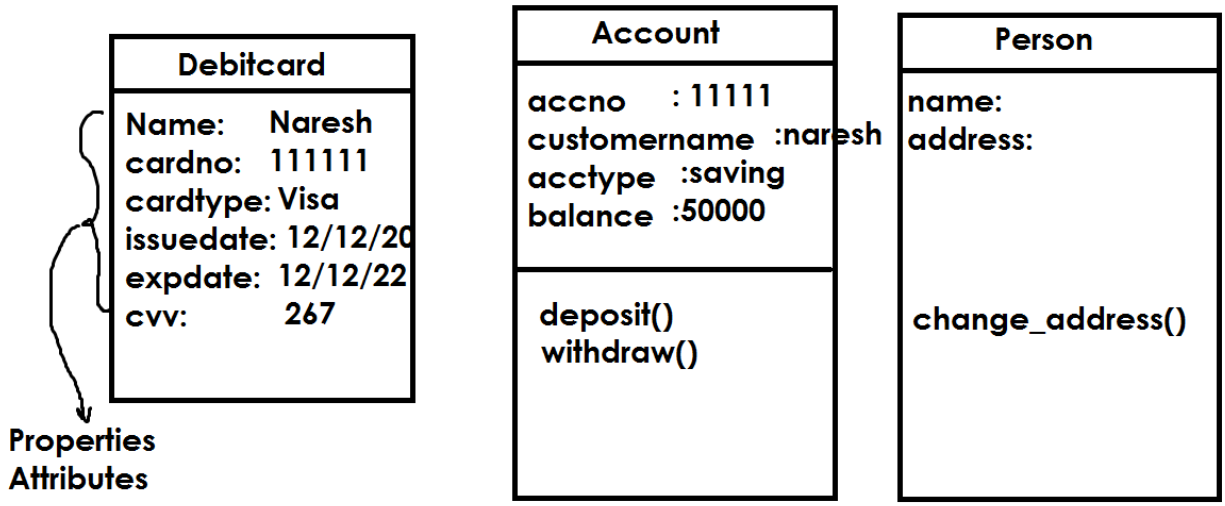
Python is object oriented programming language.
Object oriented is not a language, it is programming paradigm which define set of rules and regulations for organizing data and instructions.

In object oriented programming languages data is represented as objects.

What is object?
An object is real world entity.
Every object is having two characteristics.

1. Properties
2. Behavior

Properties define state of object.
Behavior define functionality object.



Class

Class is encapsulated with properties and behavior of object.
Class is blueprint of object
Class define the structure of object
Class is a template
Class is a data type
Class allocates memory for object
Class is a collection of attributes/fields and functions.
Class is logical entity

Types of classes:

1. Predefined classes or data types
2. User defined classes or data type

The data types or classes provided by python are called predefined class.
The data types or classes build by programmer are called user defined classes.