## Data Types:

- A data type represents the type of the data stored into a variable or memory
- type() is predefined function in python
- This is used to check type of the variables

demo.py

```
emp_id=1

name="Sachin"

salary=100.50

print("My employee id is: ", emp_id)
print("My name is: ", name)
print("My salary is: ", salary)

print("emp_id type is: ", type(emp_id))
print("name type is: ", type(name))
print("salary type is: ", type(salary))
```

Output:

```
My employee id is: 1
My name is: Sachin
My salary is: 100.5

emp_id type is: <class 'int'>
name type is: <class 'str'>
salary type is: <class 'float'>
```

### *Types of data types:*

- There are two type of data types
  - **Built-in data types:**The data types which are already available in python are called built-in data types. Those are int, float, bool, None, str, list, set, tuple, dict, range.
  - **User defined data types:**Data types which are created by programmer.

### *Data types:*

- **numeric:** The numeric types represent numbers, these are divided into three types,
  1. **int**: The int data type represents values or numbers without decimal values.In python there is no limit for int data type.It can store very large values conveniently.
  2. **float:**The float data type represents a number with decimal values

- **bool:**bool data type represents boolean values in python.bool data type having only two values those are,True,False.Python internally represents, True as 1(one), False as 0(zero), an empty string ("") represents as False.
- **None:** None data type represents an object that does not contain any value.If any object having no value, then we can assign that object with None data type
- **Sequences:** Sequence means an object. Sequence object can store a group of values
    1. **str:** str data type means its string type.A group of characters enclosed within single quotes or double quotes or triple quotes are called as string.
    2. **list:**list is a data structure in python programming language.A data structure is an object which stores a group of values.We can create list data structure by using square brackets []
    3. **tuple:**tuple is a data structure in python programming language. A data structure is an object which stores a group of values.We can create tuple data structure by using parenthesis ().We will discuss more about in upcoming tuple data structure chapter.
    4. **set:**set is a data structure in python programming language.A data structure is an object which stores a group of values.We can create set data structure by using curly braces .We will discuss more about in upcoming set data structure chapter
    5. **dict:**dict is a data structure in python programming language.A data structure is an object which stores a group of values.We can create dict data structure by using curly braces .We will discuss more about in upcoming data structure dict chapter.
    6. **range:**range is a data type in python.Generally, range means a group of values from starting to ending.We can create range of values by using range() predefined function.The range datatype represents a sequence of numbers.range data type is immutable means we cannot modify or change the existing range object
- Mutable: A first name or second name we can update in banking application
- Immutable: Account number in bank application

***User defined data types :***

- The datatype which are created by the programmers are called 'user-defined' datatypes, example is class, module, array etc
- Please refer OOPS concepts.