Advanced programming (Lecture2)

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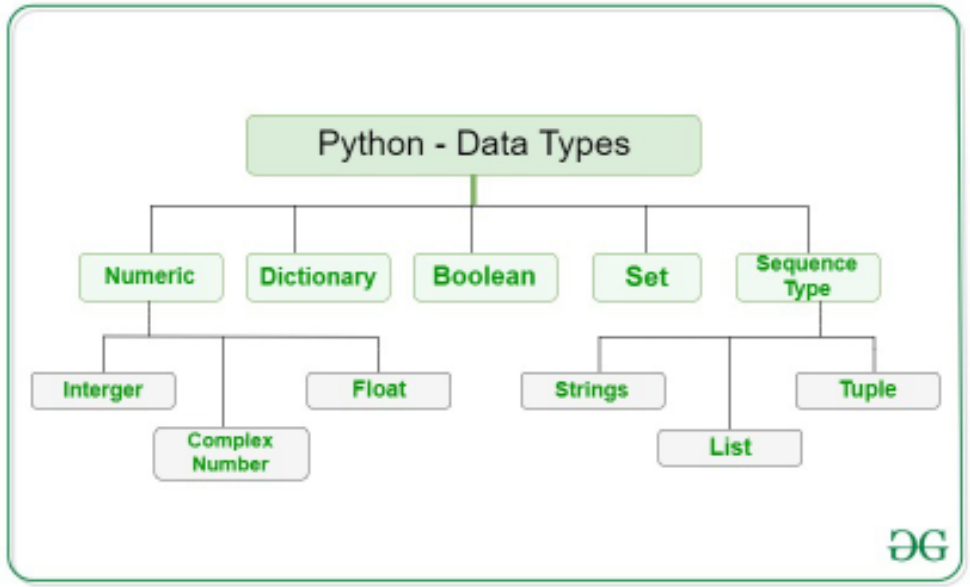
Data types in Python

- **Built-in data types (int, float):** strings, numeric, list, distortionary,…



- **Class data types:** user-defined classes

Data types in Python- numerical data types

- **Int:**

Operator	Examples	results
+	123+4	127
-	123-4	119
*	123*4	492
//	123//4	30
%	123%4	3
**	123**4	228886641

Data types in Python- numerical data types

- **Float:**

Operator	Examples	results
+	123.0+4.0	127.0
-	123.0-4.0	119.0
*	123.0*4.0	492.0
//	123.0//4.0	30.0
%	123.0%4.0	3.0
**	123.0**4.0	228886641.0

Data types in Python

- **Type conversion: implicit type conversion**

  x=110.0*3, x will be a float class data type

- **Type conversion: explicit type conversion**

  x=int(110.0)*2, x will be an int class data type

String data types- simple string operations

- Find
- Split
- Upper
- Lower
- Replace
- Index
- List
- …

```
MyString = "MyFirstName MyLastName"
Length = len(MyString)
print("The length of String is:", Length) #strings are indexted from 0
print(MyString[0])
print(MyString[5])
print(MyString[-1])
print(MyString[1:10:2])
#browsing the array:
print(MyString.index("M"))
print(MyString.upper())
print(MyString.lower())
#replacing a word in a sentence
NewString = MyString.replace("MyLastName","is Ali")
print(NewString)
#finding a word in a sentence
MySentence = "The weather today is beautiful...."
MyFoundWord = MySentence.find("is")
print(MyFoundWord)
#splitting and listing the sentece to the words and characters
MyWords = MySentence.split()
print(MyWords)
MyCharacter = list(MySentence)
print(MyCharacter)
```

String data types- simple string operations

- Find
- Split
- Upper
- Lower
- Replace
- Index
- List
- …

```
The length of String is: 22
M
s
e
yisNm
0
MYFIRSTNAME MYLASTNAME
myfirstname mylastname
MyFirstName is Ali
18
['The', 'weather', 'today', 'is', 'beautiful....']
['T', 'h', 'e', ' ', 'w', 'e', 'a', 't', 'h', 'e', 'r', ' ', 't', 'o', 'd', 'a',
 'y', ' ', 'i', 's', ' ', 'b', 'e', 'a', 'u', 't', 'i', 'f', 'u', 'l', '.', '.',
 '.', '.']
```

Conditional statements in Python- if condition

```
If  Condition:
    statement
```

Conditional statements in Python- if condition

```
if  Condition:
        statement1
else:
        statement2
```

```
Id = input("Enter your ID:")
Characters = len(Id)
if Characters==10:
    print("Your ID is valid")
else:
    print("your ID is not valid.")
```

```
enter your ID:23653
your ID is not valid.
```

Conditional statements in Python- if condition

```
if  Condition:
        statement1
else:
        statement2
```

```
Id = input("Enter your string:")
if Id[0] == "A" and Id[-1] == "0":
    print("Your ID is valid")
else:
    print("your ID is not valid.")
```

```
Enter your string:Amir0
Your ID is valid
```