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In [ ] : #More on Regular Expression

In [ ] : Pre-defined Character classes
\s --> Space Character
\S --> Any character except Space Character
\d --> any digit from 0 to 9
\D --> All chracters except digits
\w --> any word character[a-zA-z0-9_]
\W --> any character except [a-zA-z0-9_]
. --> any character including special characters --> newLine , parenthesis , anysymbol
#Note : dot class will considered all types of symbols except new line symbol(\n)

In [43]: #\s
import re
matcher=re.finditer("\s", "a7b Q@#k9x")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

0-----1-----a
1-----2-----7
2-----3-----b
3-----4-----
4-----5-----Q
5-----6-----@
6-----7-----#
7-----8-----k
8-----9-----
9-----10-----)
10-----11-----9
11-----12-----x
12-----13----- (

In [17]: #\S
import re
matcher=re.finditer("\S", "a7b Q@#k 9x")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

0-----1-----a
1-----2-----7
2-----3-----b
4-----5-----Q
5-----6-----@
6-----7-----#
7-----8-----k
9-----10-----9
10-----11-----x

In [18]: #\d
import re
matcher=re.finditer("\d", "a7b Q@#k 9x")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

1-----2-----7
9-----10-----9

In [19]: #\D
import re
matcher=re.finditer("\D", "a7b Q@#k 9x")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

0-----1-----a
2-----3-----b
3-----4-----
4-----5-----Q
5-----6-----@
6-----7-----#
7-----8-----k
8-----9-----
10-----11-----x

In [20]: #\w
import re
matcher=re.finditer("\w", "a7b Q@#k 9x")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

0-----1-----a
1-----2-----7
2-----3-----b
4-----5-----Q
7-----8-----k
9-----10-----9
10-----11-----x

In [21]: #\W
import re
matcher=re.finditer("\W", "a7b Q@#k 9x")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

3-----4-----
5-----6-----@
6-----7-----#
8-----9-----

In [22]: #.
import re
matcher=re.finditer(".", "a7b Q@#k 9x")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

0-----1-----a
1-----2-----7
2-----3-----b
3-----4-----
4-----5-----Q
5-----6-----@
6-----7-----#
7-----8-----k
8-----9-----
9-----10-----9
10-----11-----x

In [ ] : Quantifiers -->to specify the number of occurances to a match
a -> Exactly one 'a'
a+ --> atleast one 'a'
a* --> any number of a including zero number
a? --> atmost one 'a'
a(m) --> exactly m number of a
a(m,n)-->minimum m number of a and maximum n number of a

In [24]: #a
import re
matcher=re.finditer("a", "abbaabaaab")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

1-----2-----b
2-----3-----b
5-----6-----b
9-----10-----b

In [28]: #a+
import re
matcher=re.finditer("a+", "abbaabaaaaaaaaaab")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

0-----1-----a
3-----5-----aa
6-----17-----aaaaaaaaaa

In [29]: #a*
import re
matcher=re.finditer("a*", "abbaabaaab")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

0-----1-----a
1-----1-----
2-----2-----
3-----5-----aa
5-----5-----
6-----9-----aaa
9-----9-----
10-----10-----

In [30]: #b*
import re
matcher=re.finditer("b*", "abbaabaaab")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

0-----0-----
1-----3-----bb
3-----3-----
4-----4-----
5-----6-----b
6-----6-----
7-----7-----
8-----8-----
9-----10-----b
10-----10-----

In [31]: #a?
import re
matcher=re.finditer("a?", "abbaabaaab")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

0-----1-----a
1-----1-----
2-----2-----
3-----4-----a
4-----5-----a
5-----5-----
6-----7-----a
7-----8-----a
8-----9-----a
9-----9-----
10-----10-----

In [35]: #a{n}
import re
matcher=re.finditer("a{2}", "abbaabaaab")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

3-----5-----aa
6-----8-----aa

In [39]: #a{m,n}
import re
matcher=re.finditer("a{2,4}", "abbaabaaaaaab")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

3-----5-----aa
6-----10-----aaaa
10-----12-----aa

In [45]: #a{m,n}
import re
matcher=re.finditer("a{2,5}", "abbaabaaaaaab")
for match in matcher:
    print(str(match.start())+"-----" +str(match.end())+"-----"+str(match.group()))

3-----5-----aa
6-----11-----aaaaa

In [7]: #Check the mobile number is valid or not
Rules:
    1.every number should contain exactly 10digit
    2.the 1st digit must be 7 or 8 or 9 or 6

[6-9] # starting of number
[0-9] #exactly a digit /d

Input In [7]
a{n} --> exactly five characters
^
SyntaxError: invalid syntax

In [ ] : 6-9 --> first digit
[0-9] --> next 9 digit
{9}

In [55]: import re
n=input("Enter your mobile Number")
m=re.fullmatch("[6-9][0-9]{9}",n)
if m!=None:
    print("Mobile number is valid")
else:
    print("Mobile number is invalid")

Enter your mobile Number9876543210
Mobile number is valid

In [ ] : #identifier --> any name of class , variable or method it is known as an identifier
a.The only allowed character for an identifier in python is
--> alphabet symbols --> EITHER IN LOWER CASE OR UPPER CASE
--> Digits(0-9)
-->underscore(_)
2.identifier should never start with a digit
3.identifier are case sensitive
4.keywords cannot be used as an identifier
5.There is no any limit for an identifier but it is recommended to use short convention of identifier
6.Spaces are not allowed

In [75]: import keyword
len(keyword.kwlist)

Out[75]: 36

In [68]: Exercise:
1.123total #Invalid
2.total123 #valid
3.java2share #valid
4.ca$h #invalid
5.__abc__ #valid
6.def #invalid
7. if #invalid

In [ ] : file=open("abc.txt")
#If we are not giving any mode then By default mode of file handling in python is read mode
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