In [ ]:
```
import re
```

RegEx Functions

Findall

In [ ]:
```
txt = "The rain in Spain"
x = re.findall("ai", txt)
print(x)
```

In [ ]:
```
txt = "The rain in Spain"
x = re.findall("Portugal", txt)
print(x)
```

Search

In [ ]:
```
txt = "The rain in Spain"
x = re.search("rain", txt)

if x:
    print("Yes")
else:
    print("No")
```

In [ ]:
```
x.start()
```

In [ ]:
```
x.end()
```

In [ ]:
```
txt = "The rain in Spain"
x = re.search("Portugal", txt)

if x:
    print("Yes")
else:
    print("No")
```

Split

In [ ]:
```
txt = "The rain in Spain"
x = re.split(" ", txt)
print(x)
```

In [ ]:
```
txt = "The rain in Spain"
x = re.split("a", txt)
print(x)
```

In [ ]:
```
txt = "The rain in Spain"
x = re.split("a", txt, 1)
print(x)
```

In [ ]:
```
txt = "The rain in Spain"
x = re.split("a", txt, 2)
print(x)
```

Sub

In [ ]:
```
txt = "The rain in Spain"
x = re.sub("a", "9", txt)
print(x)
```

In [ ]:
```
txt = "The rain in Spain"
x = re.sub("a", "9", txt, 1)
print(x)
```

In [ ]:
```
txt = "The rain in Spain"
x = re.sub("a", "9", txt, 2)
print(x)
```

Metacharacters

In [ ]:
```
txt = "The rain in Spain"

#Find all lower case characters alphabetically between "a" and "m":

x = re.findall("[a-m]", txt)
print(x)
```

In [ ]:
```
txt = "That will be 59 dollars"

#Find all digit characters:

x = re.findall("\d", txt)
print(x)
```

In [ ]:
```
txt = "That will be 59 dollars"

#Find all space characters:

x = re.findall("\s", txt)
print(x)
```

In [ ]:
```
txt = "hello planet"

#Search for a sequence that starts with "he", followed by two (any) character
s, and an "o":

x = re.findall("he..o", txt)
print(x)
```

In [ ]:
```
txt = "hello planet"

#Check if the string starts with 'hello':

x = re.findall("^hello", txt)
if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "hello planet"

#Check if the string starts with 'hello':

x = re.findall("^hi", txt)
if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "hello planet"

#Check if the string ends with 'planet':

x = re.findall("planet$", txt)
if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "hello planet"

#Check if the string ends with 'hello':

x = re.findall("hello$", txt)
if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "hello planet"

#Search for a sequence that starts with "he", followed by 0 or more  (any) cha
racters, and an "o":

x = re.findall("he.*o", txt)

print(x)
```

In [ ]:
```
txt = "heo planet"

#Search for a sequence that starts with "he", followed by 0 or more  (any) cha
racters, and an "o":

x = re.findall("he.*o", txt)

print(x)
```

In [ ]:
```
txt = "heppo planet"

#Search for a sequence that starts with "he", followed by 0 or more "p", and a
n "o":

x = re.findall("hep*o", txt)

print(x)
```

In [ ]:
```
txt = "hello planet"

#Search for a sequence that starts with "he", followed by 0 or more "p", and a
n "o":

x = re.findall("hep*o", txt)

print(x)
```

In [ ]:
```
txt = "hello planet"

#Search for a sequence that starts with "he", followed by 1 or more  (any) cha
racters, and an "o":

x = re.findall("he.+o", txt)

print(x)
```

In [ ]:
```
txt = "heo planet"

#Search for a sequence that starts with "he", followed by 1 or more  (any) cha
racters, and an "o":

x = re.findall("he.+o", txt)

print(x)
```

In [ ]:
```
txt = "hello planet"

#Search for a sequence that starts with "h", followed by 0 or 1  (any) charact
er, and an "llo":

x = re.findall("h.?llo", txt)

print(x)
```

In [ ]:
```
txt = "hello planet"

#Search for a sequence that starts with "he", followed by 0 or 1  (any) charac
ter, and an "o":

x = re.findall("he.?o", txt)

print(x)
```

In [ ]:
```
txt = "hello planet"

#Search for a sequence that starts with "he", followed excactly 2 (any) charac
ters, and an "o":

x = re.findall("he.{2}o", txt)

print(x)
```

In [ ]:
```
txt = "The rain in Spain falls mainly in the plain!"

#Check if the string contains either "falls" or "stays":

x = re.findall("falls|stays", txt)

print(x)

if x:
  print("Yes")
else:
  print("No")
```

Special Sequences

In [ ]:
```
txt = "The rain in Spain"

#Check if the string starts with "The":

x = re.findall("\AThe", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "The rain in Spain"

#Check if "ain" is present at the beginning of a WORD:

x = re.findall(r"\bain", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "The rain in Spain"

#Check if "ain" is present at the end of a WORD:

x = re.findall(r"ain\b", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "The rain in Spain"

#Check if "ain" is present, but NOT at the beginning of a word:

x = re.findall(r"\Bain", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "The rain in Spain"

#Check if "ain" is present, but NOT at the end of a word:

x = re.findall(r"ain\B", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "The rain in Spain"

#Check if the string contains any digits (numbers from 0-9):

x = re.findall("\d", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "The rain in Spain"

#Return a match at every no-digit character:

x = re.findall("\D", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "The rain in Spain"

#Return a match at every white-space character:

x = re.findall("\s", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "The rain in Spain"

#Return a match at every NON white-space character:

x = re.findall("\S", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "The rain in Spain"

#Return a match at every word character (characters from a to Z, digits from 0
-9, and the underscore _ character):

x = re.findall("\w", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "The rain in Spain"

#Return a match at every NON word character (characters NOT between a and Z. L
ike "!", "?" white-space etc.):

x = re.findall("\W", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "The rain in Spain"

#Check if the string ends with "Spain":

x = re.findall("Spain\Z", txt)

if x:
  print("Yes")
else:
  print("No")
```

Sets

In [ ]:
```
txt = "The rain in Spain"

#Check if the string has any a, r, or n characters:

x = re.findall("[arn]", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "The rain in Spain"

#Check if the string has any characters between a and n:

x = re.findall("[a-n]", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "The rain in Spain"

#Check if the string has other characters than a, r, or n:

x = re.findall("[^arn]", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "The rain in Spain"

#Check if the string has any 0, 1, 2, or 3 digits:

x = re.findall("[0123]", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "8 times before 11:45 AM"

#Check if the string has any digits:

x = re.findall("[0-9]", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "8 times before 11:45 AM"

#Check if the string has any two-digit numbers, from 00 to 59:

x = re.findall("[1-4][0-9]", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "8 times before 11:45 AM"

#Check if the string has any characters from a to z lower case, and A to Z upp
er case:

x = re.findall("[a-zA-Z]", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "8 times before 11:45 AM"

#Check if the string has any + characters:

x = re.findall("[+]", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```
txt = "8 times before 11:45 AM"

#Check if the string has any + characters:

x = re.findall("[:]", txt)

if x:
  print("Yes")
else:
  print("No")
```

In [ ]:
```

```