In [3]:
```python
import regex as re
```

In [2]:
```python
# Q-1
```

In [6]:
```python
string = "scahin tendulkar scored 99 runs on 56 bolls"
pattern = "\w+"
regex = re.findall(pattern,string)
print (regex)
```

```
['scahin', 'tendulkar', 'scored', '99', 'runs', 'on', '56', 'bolls']
```

In [ ]:

In [7]:
```python
# Q-2
```

In [44]:
```python
def match_pattern1(string):
    pattern = r"ab*"
    match = re.match(pattern,string)
    if match:
        return True
    else:
        return False
```

In [45]:
```python
string1 = "abb"
print(match_pattern1(string1))
```

```
True
```

In [46]:
```python
string2 = "xyz"
print(match_pattern1(string2))
```

```
False
```

In [ ]:
```python
# Q-3
```

In [47]:
```python
def match_pattern2(string):
    pattern = r"ab+"
    match = re.match(pattern,string)
    if match:
        return True
    else:
        return False
```

In [48]:
```python
string1 = "abbb"
print(match_pattern2(string1))
```

```
True
```

```
In [49]: strign2 = "baa"
         print(match_pattern2(string2))
```

```
False
```

```
In [ ]:
```

```
In [ ]: # Q-4
```

```
In [50]: def match_pattern3(string):
             pattern = r"ab?"
             match = re.match(pattern,string)
             if match:
                 return True
             else:
                 return False
```

```
In [51]: string1= "xyz"
         print(match_pattern3(string1))
```

```
False
```

```
In [52]: string2 = "abb"
         print(match_pattern3(string2))
```

```
True
```

```
In [53]: string3 = "abcb"
         print(match_pattern3(string3))
```

```
True
```

```
In [ ]:
```

```
In [ ]: # Q-5
```

```
In [54]: def match_pattern4(string):
             pattern = r"ab{3}"
             match = re.match(pattern,string)
             if match:
                 return True
             else:
                 return False
```

```
In [55]: string1 = "xyz"
         print(match_pattern3(string1))
```

```
False
```

```
In [56]: string2 = "ab"
         print(match_pattern4(string2))
```

False

```
In [58]: string3 = "abb"
         print(match_pattern4(string3))
```

False

```
In [59]: string4 = "abbb"
         print(match_pattern4(string4))
```

True

```
In [ ]:
```

```
In [ ]: # Q-6
```

```
In [78]: sample_text ="ImportanceOfRegularExpressionInPython"
         pattern = r'(?=[A-Z])'
         x= re.split(pattern,sample_text)
         print(x)
```

['', 'Importance', 'Of', 'Regular', 'Expression', 'In', 'Python']

```
In [ ]:
```

```
In [ ]: # Q-7
```

```
In [87]: def match_pattern5(string):
             pattern = r"ab{2,3}"
             match = re.match(pattern,string)
             if match:
                 return True
             else:
                 return False
```

```
In [90]: string1 = "ab"
         print(match_pattern5(string1))
```

False

```
In [91]: string2 = "abb"
         print(match_pattern5(string2))
```

True

```
In [92]: string3 = "abbb"
         print(match_pattern5(string3))
```

True

In [ ]:

In [ ]:
```python
# Q-8
```

In [93]:
```python
def find_lower_sequence_with_underscore(string):
    pattern = r'[a-z]+(?:_[a-z]+)+'
    matches = re.findall(pattern, string)
    return matches
```

In [94]:
```python
string1 = "this_is_a_sequence_of_lowercase_letters"
result = find_lower_sequence_with_underscore(string1)
print(result)
```

```
['this_is_a_sequence_of_lowercase_letters']
```

In [ ]:

In [ ]:
```python
# Q-9
```

In [99]:
```python
string = "amkhg"
pattern = r"a.*b$"
match = re.match(pattern,string )
print(match)
```

```
None
```

In [100]:
```python
string2 = "amkhgb"
pattern = r"a.*b$"
match = re.match(pattern,string2)
print(match)
```

```
<regex.Match object; span=(0, 6), match='amkhgb'>
```

In [ ]:

In [ ]:
```python
# Q-10
```

In [102]:
```python
string = "the amsterdam is beautiful city"
pattern = r'\ba\w*'
match = re.search(pattern, string)
print(match)
```

```
<regex.Match object; span=(4, 13), match='amsterdam'>
```

In [103]:
```python
string = "the UAE is beautiful city"
pattern = r'\ba\w*'
match = re.search(pattern, string)
print(match)
```

```
None
```

In [ ]:

In [ ]:
```python
# Q-11
```

In [129]:
```python
string = "Hello123"
pattern = r'^[a-zA-Z0-9_]+$'
x= re.match(pattern,string)
if x:
    print (True)
else:
    print (False)
```
True

In [130]:
```python
string1 = "Hello123###!"
pattern1 = r'^[a-zA-Z0-9_]+$'
x= re.match(pattern1,string1)
if x:
    print (True)
else:
    print (False)
```
False

In [ ]:

In [ ]:
```python
# Q-12
```

In [161]:
```python
string = "22street newyork there she lives "
pattern = r'^' + str(22) + r'.*'
x = re.match(pattern,string)
print(x)
```
<regex.Match object; span=(0, 33), match='22street newyork there she lives '>

In [ ]:

In [ ]:
```python
# Q-13
```

In [4]:
```python
ip_add = "192.168.01.001"
pattern = r'\b0+(\d)'
new_ip = re.sub(pattern,r'\1',ip_add)
print (new_ip)
```
192.168.1.1

In [ ]:

In [ ]:
```python
# Q-14
```

In [6]:
```python
sample_text = "On August 15th 1947 that india was decleared independent from br
pattern =  r"(?:January|February|March|April|May|June|July|August|September|Oc1
# here st/nd/rd/th is like for date suffixes 2nd, 3rd, 4th, 1st
x= re.findall(pattern,sample_text)
print(x)
```

```
['August 15th 1947']
```

In [ ]:

In [ ]:
```python
# Q-15
```

In [31]:
```python
sample_txt = "the quick brown fox jumps over the lazy dog"
pattern= re.search('dog',sample_txt)
print(pattern)
```

```
<regex.Match object; span=(40, 43), match='dog'>
```

In [30]:
```python
sample_txt = "the quick brown fox jumps over the lazy dog"
pattern= re.search('fox',sample_txt)
print(pattern)
```

```
<regex.Match object; span=(16, 19), match='fox'>
```

In [29]:
```python
sample_txt = "the quick brown fox jumps over the lazy dog"
pattern= re.search('horse',sample_txt)
print(pattern)
```

```
None
```

In [ ]:

In [ ]:
```python
# Q-16
```

In [32]:
```python
sample_txt = "the quick brown fox jumps over the lazy dog"
pattern= re.search('fox',sample_txt)
print(pattern)
```

```
<regex.Match object; span=(16, 19), match='fox'>
```

In [ ]:

In [ ]:
```python
# Q-17
```

```
In [41]: string = 'Python exercises, PHP exercises, C# exercises'
         substring = 'exercises'
         pattern = re.escape(substring)
         match = re.findall(pattern,string)
         print(match)
```

```
['exercises', 'exercises', 'exercises']
```

In [ ]:

In [ ]:
```
# Q-18
```

```
In [42]: string = "the qick brown fox jumps over the lazy cat"
         substring = 'fox'
         x = re.search(substring,string)
         print(x)
```

```
<regex.Match object; span=(15, 18), match='fox'>
```

```
In [46]: print(x.group())
         print(x.span())
```

```
fox
(15, 18)
```

In [ ]:

In [ ]:
```
# Q-19
```

```
In [47]: def convert_date(date):
             parts = date.split('-')
             converted_date = parts[2] + '-' + parts[1] + '-' + parts[0]
             return converted_date

         date1 = '2023-07-15'
         converted_date1 = convert_date(date1)
         print(converted_date1)

         date2 = '2022-12-31'
         converted_date2 = convert_date(date2)
         print(converted_date2)
```

```
15-07-2023
31-12-2022
```

In [ ]:

In [ ]:
```
# Q-20
```

In [53]:
```python
string = "virat kohli assumed that he is eating healthy food"
pattern = r'\b[aAeE]\w+\b'
matches = re.findall(pattern, string)
print(matches)
```

['assumed', 'eating']

In [ ]:

In [ ]:
```python
# Q-21
```

In [57]:
```python
string = "This is a string with 123 and 4567 numbers."
pattern = r'\b\d+\b'
x = re.finditer(pattern, string)
for i in x:
    number = i.group()
    position = i.start()
    print(f"Number: {number}, Position: {position}")
```

Number: 123, Position: 22
Number: 4567, Position: 30

In [ ]:

In [ ]:
```python
# Q-22
```

In [59]:
```python
string = "the maximum number is 12 or 22"
pattern = r'\b\d+\b'
x = re.findall(pattern,string)

if x:
    maximum = max(map(int,x))
    print (maximum)
else:
    print (none)
```

22

In [ ]:

In [ ]:
```python
# Q-23 (please help on this question)
```

In [ ]:
```python
# Q-24
```

In [60]:
```python
string = "AncksvDksjbsvkbSdkjknFnfvkns"
pattern = r'[A-Z][a-z]'
x= re.findall(pattern,string)
print(x)
```

['An', 'Dk', 'Sd', 'Fn']

In [ ]:

In [ ]: ```
Q-25
```

In [61]: ```
string = "sita was was a very good good girl"
pattern = r'\b(\w+)(?:\W+\1\b)+'
x = re.sub(pattern,r'\1',string)
print(x)
```

sita was a very good girl

In [ ]:

In [ ]: ```
Q-26
```

In [63]: ```
string = "hello ram #"
pattern = r'\W$'
x= re.search(pattern,string)
print(x)
```

<regex.Match object; span=(10, 11), match='#'>

In [ ]:

In [ ]: ```
Q-27
```

In [64]: ```
string = """RT @kapil_kausik:#Doltiwal i mean #xyzabc is "hurt" by #Demonetizat
pattern  = r'\#\w+'
x= re.findall(pattern,string)
print(x)
```

['#Doltiwal', '#xyzabc', '#Demonetization']

In [ ]:

In [ ]: ```
Q-28
```

In [65]: ```
string = "@jags123456 Bharat band on 28 ??<ed><U+00A0><ed><U+00B8><U+0082> tho
pattern = r'<U\+[\w]+>'
x = re.sub(pattern,"",string)
print(x)
```

@jags123456 Bharat band on 28 ??<ed><ed> those who are protesting #demonetiza
tion are all different party leaders

In [ ]:

In [ ]:
```python
# Q-29
```

In [67]:
```python
string = "ron was born on 12-09-1992 and he wad admitted to school 15-12-1999"
pattern = r'\b\d{1,2}-\d{1,2}-\d{2,4}\b'
x= re.findall(pattern,string)
print(x)
```

```
['12-09-1992', '15-12-1999']
```

In [ ]:

In [ ]:
```python
# Q-30
```

In [68]:
```python
string = "Python Exercises, PHP.Exercises"
pattern = r'[ ,.]'
x= re.sub(pattern,':',string)
print(x)
```

```
Python:Exercises::PHP:Exercises
```

In [ ]:

In [ ]:

In [ ]: