

```
In [1]: import re
import pandas as pd
```

Question 1- Write a Python program to replace all occurrences of a space, comma, or dot with a colon.

```
In [2]: data='Python Exercises, PHP exercises.'
```

```
In [3]: data
```

```
Out[3]: 'Python Exercises, PHP exercises.'
```

```
In [4]: pat='\W'
```

```
In [5]: rep=':'
```

```
In [6]: re.sub(pat,rep,data)
```

```
Out[6]: 'Python:Exercises::PHP:exercises:'
```

Question 2- Write a Python program to find all words starting with 'a' or 'e' in a given string.

```
In [7]: re.findall('e[\D.]+',data)
```

```
Out[7]: ['ercises, PHP exercises.']
```

Question 3- Create a function in python to find all words that are at least 4 characters long in a string. The use of the re.compile() method is mandatory.

```
In [8]: pattern='\w{4}'
reg_obj=re.compile(pattern)
```

```
In [9]: find=reg_obj.findall(data)
```

```
In [10]: find
```

```
Out[10]: ['Pyth', 'Exer', 'cise', 'exer', 'cise']
```

Question 4- Create a function in python to find all three, four, and five character words in a string. The use of the re.compile() method is mandatory.

```
In [11]: pattern='\w{3,5}'
```

```
In [12]: reg_obj=re.compile(pattern)
```

```
In [13]: find=reg_obj.findall(data)
```

```
In [14]: find
```

```
Out[14]: ['Pytho', 'Exerc', 'ises', 'PHP', 'exerc', 'ises']
```

Question 5- Create a function in Python to remove the parenthesis in a list of strings. The use of the re.compile() method is mandatory.

```
In [99]: data=["example (.com)", "hr@fliprobo (.com)", "github (.com)", "Hello (Data Science World)"]
```

```
In [100]: data
```

```
Out[100]: ['example (.com)',  
           'hr@fliprobo (.com)',  
           'github (.com)',  
           'Hello (Data Science World)',  
           'Data (Scientist)']
```

```
In [104]: for ra in data:  
           out=re.sub(pattern="^\w\s",repl='',string=ra)
```

```
In [105]: print(out)
```

Data Scientist

```
In [65]: strings = ["example (.com)", "hr@fliprobo (.com)", "github (.com)", "Hello (Data Science World)",  
                    "Data (Scientist)"]  
pattern = re.compile(r"\D+")  
for i in strings:  
  
    output = remove_parenthesis(i)  
    print(output)
```

None
None
None
None
None

Question 6- Write a python program to remove the parenthesis area from the text stored in the text file using Regular Expression.

```
In [79]: data
```

```
Out[79]: ('example (.com)',  
          'hr@fliprobo (.com)',  
          'github (.com)',  
          'Hello (Data Science World)',  
          'Data (Scientist)')
```

```
In [111]: [re.findall('^\w+',i) for i in data]
```

```
Out[111]: [['example'], ['hr'], ['github'], ['Hello'], ['Data']]
```

Question 7- Write a regular expression in Python to split a string into uppercase letters.

```
In [119]: data='ImportanceOfRegularExpressionsInPython'
```

```
In [120]: data
```

```
Out[120]: 'ImportanceOfRegularExpressionsInPython'
```

```
In [121]: re.findall('[A-Z][^A-Z]+', data)
```

```
Out[121]: ['Importance', 'Of', 'Regular', 'Expressions', 'In', 'Python']
```

Question 8- Create a function in python to insert spaces between words starting with numbers.

```
In [123... data='RegularExpression1IsAn2ImportantTopic3InPython'
```

```
In [124... re.findall('[\d][^\d]+',data)
```

```
Out[124]: ['1IsAn', '2ImportantTopic', '3InPython']
```

Question 9- Create a function in python to insert spaces between words starting with capital letters or with numbers.

```
In [134... data='RegularExpression1IsAn2ImportantTopic3InPython'
```

```
In [150... re.findall('[\d][^\d]+[\w]',data)
```

```
Out[150]: ['1IsAn2', '3InPython']
```

Question 10- Write a python program to extract email address from the text stored in the text file using Regular Expression

```
In [156... data='Hello my name is Data Science and my email address is xyz@domain.com and alternate
```

```
In [201... data
```

```
Out[201]: 'Hello my name is Data Science and my email address is xyz@domain.com and alternate email address is xyz.abc@sdomain.domain.com. Please contact us at hr@fliprobo.com for further information.'
```

```
In [196... re.findall('[\w.++]+@[[\w.]+\. [\w]{3}',data)
```

```
Out[196]: ['xyz@domain.com', 'xyz.abc@sdomain.domain.com', 'hr@fliprobo.com']
```

Question 11- Write a Python program to match a string that contains only upper and lowercase letters, numbers, and underscores.

```
In [204... data
```

```
Out[204]: 'Hello my name is Data Science and my email address is xyz@domain.com and alternate email address is xyz.abc@sdomain.domain.com. Please contact us at hr@fliprobo.com for further information.'
```

```
In [222... pattern = '[\w_++]'
```

```
In [223... re.match(pattern, data)
```

```
Out[223]: <re.Match object; span=(0, 5), match='Hello'>
```

Question 12- Write a Python program where a string will start with a specific number.

```
In [224... re.findall('\d.+',data)
```

```
Out[224]: []
```

Question 13- Write a Python program to remove leading zeros from an IP address

```
In [235... data='07843.0827347.02740 '
```

```
In [240... pattern = '0(\d.)'  
re.sub(pattern, r'\1',data)
```

```
Out[240]: '7843.827347.2740 '
```

Question 14- Write a regular expression in python to match a date string in the form of Month name followed by day number and year stored in a text file.

```
In [242... data=' On August 15th 1947 that India was declared independent from British colonialis
```

```
In [246... data
```

```
Out[246]: ' On August 15th 1947 that India was declared independent from British colonialis  
m, and the reins of control were handed over to the leaders of the Country.'
```

```
In [252... match=re.search('(August)\s\w{4}\s\d{4}',data)
```

```
In [253... match
```

```
Out[253]: <re.Match object; span=(4, 20), match='August 15th 1947'>
```

Question 15- Write a Python program to search some literals strings in a string.

```
In [254... data='The quick brown fox jumps over the lazy dog.'
```

```
In [258... re.findall('f.x|d.g',data)
```

```
Out[258]: ['fox', 'dog']
```

Question 16- Write a Python program to search a literals string in a string and also find the location within the original string where the pattern occurs

```
In [261... re.search('f.x',data)
```

```
Out[261]: <re.Match object; span=(16, 19), match='fox'>
```

Question 17- Write a Python program to find the substrings within a string.

```
In [281... data='Python exercises, PHP exercises, C# exercises'
```

```
In [282... re.findall('e.\w+',data)
```

```
Out[282]: ['exercises', 'exercises', 'exercises']
```

18- Write a Python program to find the occurrence and position of the substrings within a string.

```
In [283... data
```

```
Out[283]: 'Python exercises, PHP exercises, C# exercises'
```

```
In [287... matc=re.search('e.\w+',data)
```

```
print(matc)
<re.Match object; span=(7, 16), match='exercises'>
```

```
In [289... import numpy as np
import pandas as pd
```

19-Write a Python program to convert a date of yyyy-mm-dd format to dd-mm-yyyy format.

```
In [291... date='2001-07-14'
```

```
In [293... ye,mo,da=date.split('-')
```

```
In [294... print(ye,mo,da)
```

```
2001 07 14
```

```
In [302... print(da,mo,ye)
```

```
14 07 2001
```

20-Create a function in python to find all decimal numbers with a precision of 1 or 2 in a string. The use of the re.compile() method is mandatory.

```
In [355... data='my name is 14.7 my number is 20.01'
```

```
In [356... pattern='\d{1,2}\.\d{1,2}'
```

```
In [357... comp_pa=re.compile(pattern)
```

```
In [358... comp_pa.findall(data)
```

```
Out[358]: ['14.7', '20.01']
```

21-Write a Python program to separate and print the numbers and their position of a given string.

```
In [359... data
```

```
Out[359]: 'my name is 14.7 my number is 20.01'
```

```
In [360... match=re.compile('\d+')
```

```
In [361... matchi=match.finditer(data)
```

```
In [362... for matches in matchi:
    print('number=',matches.group(0),'position=',matches.start(0))
```

```
number= 14 position= 11
number= 7 position= 14
number= 20 position= 29
number= 01 position= 32
```

22-Write a regular expression in python program to extract maximum/largest numeric value from a string.

```
In [376... data='My marks in each semester are: 947, 896, 926, 524, 734, 950, 642'
```

```
In [377... data
```

```
Out[377]: 'My marks in each semester are: 947, 896, 926, 524, 734, 950, 642'
```

```
In [380... nums=re.findall('\d+',data)
```

```
In [381... num=max(nums)
```

```
In [382... num
```

```
Out[382]: '950'
```

Question 23- Create a function in python to insert spaces between words starting with capital letters.

```
In [383... data='RegularExpressionIsAnImportantTopicInPython'
```

```
In [384... data
```

```
Out[384]: 'RegularExpressionIsAnImportantTopicInPython'
```

```
In [402... re.sub('[A-Z][^\w.?\n?]+',' ',data)
```

```
Out[402]: 'RegularExpressionIsAnImportantTopicInPython'
```

24-Python regex to find sequences of one upper case letter followed by lower case letters

```
In [394... data
```

```
Out[394]: 'RegularExpressionIsAnImportantTopicInPython'
```

```
In [395... re.findall('[A-Z][a-z]+',data)
```

```
Out[395]: ['Regular', 'Expression', 'Is', 'An', 'Important', 'Topic', 'In', 'Python']
```

25-Write a Python program to remove continuous duplicate words from Sentence using Regular Expression.

```
In [403... data="Hello hello world world"
```

```
In [404... data
```

```
Out[404]: 'Hello hello world world'
```

```
In [418... re.sub(r'\b(\w+)(\s\1)+', r'\1', data)
```

```
Out[418]: 'Hello hello world'
```

26-Write a python program using RegEx to accept string ending with alphanumeric character

```
In [419... data='yuqg4432ttydeh jygd6763hgdw.hd8 hye337yhdjbs'
```

```
In [426... re.findall('[\w]+',data)
Out[426]: ['yuqg4432ttydeh', 'jygd6763hgdw', 'hd8', 'hye337yhdjbs']
```

Question 27-Write a python program using RegEx to extract the hashtags.

```
In [427... data='RT @kapil_kausik: #Doltiwal I mean #xyzabc is "hurt" by #Demonetization as the same has rendered USELESS <ed><U+00A0><U+00BD><ed><U+00B1><U+0089> "acquired funds" No wo'
In [428... data
Out[428]: 'RT @kapil_kausik: #Doltiwal I mean #xyzabc is "hurt" by #Demonetization as the same has rendered USELESS <ed><U+00A0><U+00BD><ed><U+00B1><U+0089> "acquired funds" No wo'
In [429... re.findall('#[\w]+',data)
Out[429]: ['#Doltiwal', '#xyzabc', '#Demonetization']
```

Question 28- Write a python program using RegEx to remove <U+...> like symbols

```
In [430... data="@Jags123456 Bharat band on 28??<ed><U+00A0><U+00BD><ed><U+00B8><U+0082>Those who are protesting #demonetization are all different party leaders'
In [431... data
Out[431]: '@Jags123456 Bharat band on 28??<ed><U+00A0><U+00BD><ed><U+00B8><U+0082>Those who are protesting #demonetization are all different party leaders'
In [432... re.sub('<[?]+\w+>+', ' ',data)
Out[432]: '@Jags123456 Bharat band on 28?? Those who are protesting #demonetization are all different party leaders'
```

29-Write a python program to extract dates from the text stored in the text file.

```
In [434... data='Ron was born on 12-09-1992 and he was admitted to school 15-12-1999.'
In [440... data
Out[440]: 'Ron was born on 12-09-1992 and he was admitted to school 15-12-1999.'
In [441... re.findall('[\d{1,2}]\-[\d{1,2}]\-[\d{3,4}]',data)
Out[441]: []
```

30-Question 30- Create a function in python to remove all words from a string of length between 2 and 4.

```
In [442... data="The following example creates an ArrayList with a capacity of 50 elements. 4 elements are then added to the ArrayList and the ArrayList is trimmed accordingly."
In [457... data
Out[457]: 'The following example creates an ArrayList with a capacity of 50 elements. 4 elements are then added to the ArrayList and the ArrayList is trimmed accordingly.'
In [458... pat=re.compile('\b\w{2,4}\b')
In [460... pat.sub('',data)
```

Out[460]: 'The following example creates an ArrayList with a capacity of 50 elements. 4 elements are then added to the ArrayList and the ArrayList is trimmed accordingly.'

In []: