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

**Sample Text-** 'Python Exercises, PHP exercises.'

**Expected Output:** Python:Exercises::PHP:exercises:

**Ans.** solution : 1= import re

2= ‘phython Exercises, PHP Exercises’.

3= print(re.sub("[ ,.]", ":", text))

Python:Exercises :: PHP : Exercises:

**Pictorial Presentation =**

Replace all occurrences of space,comma,or dot with a colon

Replacing with ‘:’

Python Exercises , PHP Exercises

Space Comma Space Space Dot

Pythan:Exercises:: PHP: Exercises:

**‘Phython Exercises,PHP Exercises’.**

**Question 2-** Create a dataframe using the dictionary below and remove everything (commas (,), !, XXXX, ;, etc.) from the columns except words.

**Dictionary-** {'SUMMARY' : ['hello, world!', 'XXXXX test', '123four, five:; six...']}

**Expected output-**

0 hello world

1 test

2 four five six

**Ans.**To create a dataframe using the given dictionary and remove everything except words form the columns,you can follow these steps.

1. Import the pandas library:

import pandas as pd

1. Create the dictionary:

data = {‘SUMMARY’ : [ ‘hello, world , ‘XXXXX test’ , ‘123four,five: ; six …’]}

1. Create the dataframe:

df = pd.DataFrame(data)

1. Remove everything except words form the columns:

df[‘SUMMARY’] = df[‘SUMMARY’].str.replace(‘[^a-zA-Z\s]’ , ‘’ , regex = True)

1. Print the expected output:

Print(df)

The output will be:

SUMMARY

0 hello world

1 test

2 four five six

**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.

**Ans.** To find all words that are at least three, four, or five characters long in a string using the re.compile method in Python, you can follow these steps:

1. Import the re module

**Import re**

1. Define a function that takes a string as input.

**Def finf\_words(string):**

1. Use compile method:

**Pattern =re.compile (r’\b\w\{3,5}\b’ )**

1. Use the findall method:

**Matches = pattern\_findall ( string**)

1. Return the list of matches:

**Return matches**

Putting it all together , the complete function :

Import

def find\_words ( string):

pattern = re – compile ( r’\b\w{3,5}\b’)

matches = pattern- findall ( string)

return matches.

**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.

**Ans.** solution = 1. **import re**

2. **text =’ The quick brown fox jumps over the lazy dog.**

3. **Print ( re.findall (r’’\b\w{3,5}\b’’, text))**

outut : **[‘the’, ‘quick’, ‘brown’ , ‘fox’ , ‘jumps’ , ‘over’ , ‘the’ , ‘lazy’ , ‘dog’]**

**Pictorial Presentation:**

**‘ The quick brown fox’**

Searching all three, four , five characters long word in the string

The quick brown fox

Three Characters Five Characters Five Characters Three Characters

**[ ‘The’ , ‘quick’ , ‘brown’ , ‘fox’ ]**

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

**Ans.** Python program that uses the re module to match the desired pattern.

Import re

def match\_ string ( string):

pattern = r’^ [a – zA – Z0 – 9\_]+$’

if re.match ( pattern, string):

print ( “String matches the pattern”)

else:

print ( “ string does not match the pattern”)

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

Ans. To write a python program where a string with a specific number. You can use the startswith() method.

def check\_ starting \_ number ( string, number):

if string. Startswith (str(number)):

return True

else:

return False

# example usage

String = ‘’123abc”

number = 123

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

**Ans.** Solution: 1. Import re

2. ip = “216.08.094.196

3. String = re.sub (‘\.[0]\*’ , ‘. ‘ , ip)

4. print ( string).

Output : 216.8.94.196

**Pictorial Presentation:**

“216.08.094.196”

Remove leading zeros form the IP address

Leading zeros

“216.08.094.196”

Remove Remove

216.8.94.196

**Flow Chart :** import re

IP = “216.08.094.196”

String = String = re.sub (‘\.[0]\*’ , ‘. ‘ , ip)

Print = (string)

end

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

**Ans.** Solution : A python program to find the occurrence and position of substrings within a string.

1. Import re
2. text = ‘python exercises, PHP exercises , c# exercises
3. pattern = ‘exercises’
4. for match in re.finditer (pattern,text):
5. s = match.start ()
6. e = match.end()
7. print ( ‘ Found “%S” at %d: %d’ %(text[s:e], s,e ))

output: Found “ exercises’’ at 7:16

Found “exercises” at 22:31

Found “ exercises’’ at 36:45

**Pictorial Presentation:**

**‘Python exercises, PHP exercises, C# exercises’**

Searching substring

**‘Exercises’**

Occurance- 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

‘Python exercises, PHP exercises, c# exercises

Position-0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44

Found “ exercises’’ at 7:16

Found “exercises” at 22:31

Found “ exercises’’ at 36:45

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

Ans. Solution : program to convert a date of yyyy-mm-dd format to dd-mm-yyyy format.

1. Import re
2. def change\_data\_format(dt):
3. return re.sub(r’(\d{4} ) –(\d{1,2} ) – (\d{1,2} ) ‘ , ‘ ‘\\3-\\-1’ ,dt)
4. dt1 = “2026-01-02”
5. print ( “ original date in YYY-MM-DD Formate: ‘’ , dt1)
6. print ( “ new date in DD-MM-YYYY Format : “ , change \_date \_ formate (dt1))

output : original date in YYY-MM-DD Format : 2026-01-02

New date in DD-MM-YYYY Format : 02-01-2026

**Pictorial Presentation :**

**YYYY MM DD**

“2026” - 01 - 02”

Convert the date to dd-mm-yyyy format

Converted

02 - 01 - 2026

DD- MM -YYYY

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

**Ans.**solution :Python program to separate and print the numbers and their position of a given string.

1. Import re
2. # input.
3. Text = ‘’ The following example creates an ArrayList with a capacity of 50 elements. Four elements are them added to the ArrayList and the ArrayList is trimmed accordingly .”
4. For m in re.finditer(“\d+” ,text):
5. Print (m.group (0))
6. Print ( “Index position:” ,m.start () )

Output: 50

Index Position : 62

**Pictorial Presentation:**

**“ A picture is worth a 1000 words.”**

Separate and print the numbers and their position

Import position - 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 1 9 20 Separate 25 26 27 28 29 30

“ A picture is worth a 21 22 23 24 words.”

1000

Index position :21

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

Ans.To find sequences of one uppercase letter followed by lowercase letters using python regex. Use the folloeing pattern.

Import re

Pattern = r ‘ [ A-Z] [a-z]+’

Text = ‘’ This is a sample text with multiple matches”

Matches = re.findall(pattern,text)

Print ( matches)

That will output:

[‘This’ , ‘sample’ , ‘Text’ , ‘Multiple’ , ‘Matches’ ,]

Explain : 1. [A-Z] matches ant uppercase latter

2. [a-z] + matches one or more lowercase latters.

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

Ans. To write a python program using regular expressions to accept a string ending write with an alphanumeric character , use the re module.

import re

def check\_string (string):

pattern = r”\w$”

match = re. search ( pattern , string)

if match:

return True

else:

return False

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

**Sample text :** 'Python exercises, PHP exercises, C# exercises'

**Pattern :** 'exercises'.

**Ans.** Solution : python exercises, PHP exercises , C# exercises’

Pattern: **‘exercises’.** There are two instances of exercises in the input string

1. import re
2. text =’python exercises, PHP exercises , C# exercises’
3. pattern = ‘ exercises’
4. for match in re.findall ( pattern, text):
5. print ( ‘Found “%” ‘ % match)

output : Found “exercises”

Found “exercises”

Found “exercises”

**Pictorial Presentation:**

**Python exercises, PHP exercises, C# exercises**

Searching substring

“exercises”

Found Found Found

Python exercises PHP exercises C# exercises

Found “exercises”

Found “exercises”

Found “exercises”