In [1]:

```
#Question 1- Write a Python program to replace all occurrences of a space, comma, or dot
import re
text = 'Python Exercises, PHP exercises.'
print(re.sub("[ ,.]", ":", text))
```

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

In [2]:

```
#Question2 - Write a Python program to find all words starting with 'a' or 'e' in a given
import re

string = "we have to find words starting from a and e like ateet but not Ateet also esha
pattern = r'\b[ae]\w*\b'

result= re.findall(r'\b[ae]\w*\b', string)
print(result)
```

```
['a', 'and', 'e', 'ateet', 'also', 'esha', 'eg', 'elephant']
```

In [3]:

```
#Question3 -Create a function in python to find all words that are at least 4 characters

import re
string = "My name Ateet , studying in Datatrained also doing internship fr_om fliprobocom
pattern = re.compile(r'\b\w{4,}\b')
result = pattern.findall(string)
print(result)
```

```
['name', 'Ateet', 'studying', 'Datatrained', 'also', 'doing', 'internshi
p', 'fr_om', 'fliprobocompany', 'Fliprobo', 'very', 'good', 'company']
```

In [4]:

```
#Question 4- Create a function in python to find all three, four, and five character word
import re
string = "Create a function in python to find all three, four, and five character words i
pattern = re.compile(r'\b\w{3,5}\b')
result = pattern.findall(string)
print(result)
```

```
['find', 'all', 'three', 'four', 'and', 'five', 'words', 'The', 'use', 'th
e']
```

In [5]:

```
#Question 5- Create a function in Python to remove the parenthesis in a list of strings.
#Sample Text: ["example (.com)", "hr@fliprobo (.com)", "github (.com)", "Hello (Data Scie
#Expected Output:
#example.com
#hr@fliprobo.com
#github.com
#Hello Data Science World
#Data Scientist

import re

sample_text = ["example (.com)", "hr@fliprobo (.com)", "github (.com)", "Hello (Data Scie
pattern = r"\((.*?)\)"
regex_pattern = re.compile(pattern)

result = [regex_pattern.sub(r"\1", string).strip() for string in sample_text]
print(result)
```

```
['example .com', 'hr@fliprobo .com', 'github .com', 'Hello Data Science Wo
rld', 'Data Scientist']
```

In [6]:

```
#Question 6- Write a python program to remove the parenthesis area from the text stored i
#Sample Text: ["example (.com)", "hr@fliprobo (.com)", "github (.com)", "Hello (Data Scie
#Expected Output: ["example", "hr@fliprobo", "github", "Hello", "Data"]
#Note- Store given sample text in the text file and then to remove the parenthesis area f

import re

sample_text = ["example (.com)", "hr@fliprobo (.com)", "github (.com)", "Hello (Data Scie
pattern = r"\((.*?)\)"
regex_pattern = re.compile(pattern)

result = [regex_pattern.sub('', string) for string in sample_text]
print(result)
```

```
['example ', 'hr@fliprobo ', 'github ', 'Hello ', 'Data ']
```

In [7]:

```
#Question 7- Write a regular expression in Python to split a string into uppercase letter
#Sample text: “ImportanceOfRegularExpressionsInPython”
#Expected Output: [‘Importance’, ‘Of’, ‘Regular’, ‘Expression’, ‘In’, ‘Python’]

import re

sample_text = "ImportanceOfRegularExpressionsInPython"
split_words = re.split(r'(?<=[a-z])(?=[A-Z])', sample_text)

print(split_words)
```

```
['Importance', 'Of', 'Regular', 'Expressions', 'In', 'Python']
```

In [8]:

```
#Question 8- Create a function in python to insert spaces between words starting with num
#Sample Text: “RegularExpression1IsAn2ImportantTopic3InPython"
#Expected Output: RegularExpression 1IsAn 2ImportantTopic 3InPython

import re

sample_text = "RegularExpression1IsAn2ImportantTopic3InPython"
pattern = r'(?<=\d)(?=[A-Za-z])'
result = re.sub(pattern, ' ', sample_text)

print(result)
```

```
RegularExpression1 IsAn2 ImportantTopic3 InPython
```

In [9]:

```
#Question 9- Create a function in python to insert spaces between words starting with cap
#Sample Text: “RegularExpression1IsAn2ImportantTopic3InPython"
#Expected Output:  RegularExpression 1 IsAn 2 ImportantTopic 3 InPython

import re

sample_text = "RegularExpression1IsAn2ImportantTopic3InPython"
pattern = r'(?<=[A-Z0-9])(?=[A-Z])|(?<=[A-Za-z])(?=\d)'
result = re.sub(pattern, ' ', sample_text)

print(result)
```

```
RegularExpression 1 IsAn 2 ImportantTopic 3 InPython
```

In [ ]:

```
#Question 10- Write a python program to extract email address from the text stored in the
#Sample Text- Hello my name is Data Science and my email address is xyz@domain.com and al
#Please contact us at hr@fliprobo.com for further information.
#Expected Output:
#['xyz@domain.com', 'xyz.abc@sdomain.domain.com']
#['hr@fliprobo.com']

#Note- Store given sample text in the text file and then extract email addresses.
```

In [10]:

```
#Question 11- Write a Python program to match a string that contains only upper and lower
import re

strings = ["This_is_correct", "This_is_also_correct123", "This is not correct", "correct5
pattern = r'^[a-zA-Z0-9_]+$'

for string in strings:
    result = re.match(pattern, string)
    if result:
        print(f"'{string}' matches the pattern.")
    else:
        print(f"'{string}' does not match the pattern.")
```

```
'This_is_correct' matches the pattern.
'This_is_also_correct123' matches the pattern.
'This is not correct' does not match the pattern.
'correct56' matches the pattern.
```

In [11]:

```
#Question 12- Write a Python program where a string will start with a specific number.
import re
def match_num(string):
    text = re.compile(r"^5")
    if text.match(string):
        return True
    else:
        return False
print(match_num('5-2345861'))
print(match_num('6-2345861'))
```

```
True
False
```

In [12]:

```
#Question 13- Write a Python program to remove leading zeros from an IP address
import re
ip = "216.08.094.196"
string = re.sub('\.[0]*', '.', ip)
print(string)
```

```
216.8.94.196
```

In [ ]:

```
#Question 14- Write a regular expression in python to match a date string in the form of

#Sample text :  ' On August 15th 1947 that India was declared independent from British co
#Expected Output- August 15th 1947
#Note- Store given sample text in the text file and then extract the date string asked fo
```

In [13]:

```
#Question 15- Write a Python program to search some literals strings in a string.
#Sample text : 'The quick brown fox jumps over the lazy dog.'
#Searched words : 'fox', 'dog', 'horse'

import re
patterns = [ 'fox', 'dog', 'horse' ]
text = 'The quick brown fox jumps over the lazy dog.'
for pattern in patterns:
    print('Searching for "%s" in "%s" ->' % (pattern, text),)
    if re.search(pattern,  text):
        print('Matched!')
    else:
        print('Not Matched!')
```

```
Searching for "fox" in "The quick brown fox jumps over the lazy dog." ->
Matched!
Searching for "dog" in "The quick brown fox jumps over the lazy dog." ->
Matched!
Searching for "horse" in "The quick brown fox jumps over the lazy dog." ->
Not Matched!
```

In [14]:

```
#Question 16- Write a Python program to search a literals string in a string and also fin
#Sample text : 'The quick brown fox jumps over the lazy dog.'
#Searched words : 'fox'

import re
pattern = 'fox'
text = 'The quick brown fox jumps over the lazy dog.'
match = re.search(pattern, text)
s = match.start()
e = match.end()
print('Found "%s" in "%s" from %d to %d ' % \
    (match.re.pattern, match.string, s, e))
```

```
Found "fox" in "The quick brown fox jumps over the lazy dog." from 16 to 1
9
```

In [15]:

```
#Question 17- Write a Python program to find the substrings within a string.
#Sample text : 'Python exercises, PHP exercises, C# exercises'
#Pattern : 'exercises'.
import re
text = 'Python exercises, PHP exercises, C# exercises'
pattern = 'exercises'
for match in re.findall(pattern, text):
print('Found "%s"' % match)
```

```
Found "exercises"
Found "exercises"
Found "exercises"
```

In [16]:

```
#Question 18- Write a Python program to find the occurrence and position of the substring

import re
text = 'Python exercises, PHP exercises, C# exercises'
pattern = 'exercises'
for match in re.finditer(pattern, text):
    s = match.start()
    e = match.end()
print('Found "%s" at %d:%d' % (text[s:e], s, e))
```

```
Found "exercises" at 36:45
```

In [17]:

```
#Question 19- Write a Python program to convert a date of yyyy-mm-dd format to dd-mm-yyyy

import re
def change_date_format(dt):
        return re.sub(r'(\d{4})-(\d{1,2})-(\d{1,2})', '\\3-\\2-\\1', dt)
dt1 = "2026-01-02"
print("Original date in YYY-MM-DD Format: ",dt1)
print("New date in DD-MM-YYYY Format: ",change_date_format(dt1))
```

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

In [18]:

```
#Question 20- Create a function in python to find all decimal numbers with a precision of
def is_decimal(num):
    import re
    dnumre = re.compile(r"""^[0-9]+(\.[0-9]{1,2})?$""")
    result = dnumre.search(num)
    return bool(result)

print(is_decimal('123.11'))
print(is_decimal('123.1'))
print(is_decimal('123'))
print(is_decimal('0.21'))

print(is_decimal('123.1214'))
print(is_decimal('3.124587'))
print(is_decimal('e666.86'))
```

```
True
True
True
True
False
False
False
```

In [19]:

```
#Question 21- Write a Python program to separate and print the numbers and their position
import re
text = "The following example creates an ArrayList with a capacity of 50 elements. Four e

for m in re.finditer("\d+", text):
    print(m.group(0))
    print("Index position:", m.start())
```

```
50
Index position: 62
```

In [20]:

```
#Question 22- Write a regular expression in python program to extract maximum/largest num
#Sample Text:  'My marks in each semester are: 947, 896, 926, 524, 734, 950, 642'
#Expected Output: 950

import re
def extract_max(string): # define a function name and parameter
    pattern = r'\b\d+\b'
    numbers = re.findall(pattern, string) # use the string parameter
    if numbers:
        max_number = max(map(int, numbers))
        return max_number # return the result to the caller
    else:
        return None # return None to the caller

sample  = 'My marks in each semester are: 947, 896, 926, 524, 734, 950, 642'
print(extract_max(sample)) # call the function with an argument and print the result
```

```
950
```

In [21]:

```
#Question 23- Create a function in python to insert spaces between words starting with ca
#Sample Text: “RegularExpressionIsAnImportantTopicInPython"
#Expected Output: Regular Expression Is An Important Topic In Python

import re
sample_text = "RegularExpressionIsAnImportantTopicInPython"
pattern = r'(?<=[a-z])([A-Z])'
replacement = r' \1'
Word_with_spaces = re.sub(pattern,replacement,sample_text)
print(Word_with_spaces)
```

```
Regular Expression Is An Important Topic In Python
```

In [22]:

```
#Question 24- Python regex to find sequences of one upper case letter followed by lower c

import re

text = "RegularExpressionIsAnImportantTopicInPython"
pattern = r'[A-Z][a-z]+'

matches = re.findall(pattern, text)
print(matches)
```

```
['Regular', 'Expression', 'Is', 'An', 'Important', 'Topic', 'In', 'Pytho
n']
```

In [23]:

```
#Question 25- Write a Python program to remove continuous duplicate words from Sentence u
#Sample Text: "Hello hello world world"
#Expected Output: Hello hello world

import re
sample_text = "Hello hello world world"
pattern = r'\b(\w+)\s+\1\b'
replacement = r' \1'
Word_with_spaces = re.sub(pattern,replacement,sample_text)
print(Word_with_spaces)
```

```
Hello hello  world
```

In [24]:

```
#Question 26-  Write a python program using RegEx to accept string ending with alphanumer

import re

def validate_string(input_string):
    pattern = r'^.*[a-zA-Z0-9]$'
    if re.match(pattern, input_string):
        return True
    else:
        return False

user_input = input("Enter a string: ")
if validate_string(user_input):
    print("Valid string: Ends with an alphanumeric character.")
else:
    print("Invalid string: Does not end with an alphanumeric character.")
```

```
Enter a string: 123
Valid string: Ends with an alphanumeric character.
```

In [26]:

```
#Question 27-Write a python program using RegEx to extract the hashtags.
#Sample Text:  """RT @kapil_kausik: #Doltiwal I mean #xyzabc is "hurt" by #Demonetization
#Expected Output: ['#Doltiwal', '#xyzabc', '#Demonetization']

import re

sample_text = """RT @kapil_kausik: #Doltiwal I mean #xyzabc is "hurt" by #Demonetization
pattern = r'#\w+'
result = re.findall(pattern, sample_text)
print(result)
```

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

In [27]:

```
#Question 28- Write a python program using RegEx to remove <U+..> like symbols
#Check the below sample text, there are strange symbols something of the sort <U+..> all
#Sample Text: "@Jags123456 Bharat band on 28??<ed><U+00A0><U+00BD><ed><U+00B8><U+0082>Tho
#Expected Output: @Jags123456 Bharat band on 28??<ed><ed>Those who  are protesting #demon

import re

sample_text = "@Jags123456 Bharat band on 28??<ed><U+00A0><U+00BD><ed><U+00B8><U+0082>Tho
pattern = r'<U\+[0-9A-Fa-f]+>'
result = re.sub(pattern, '' ,sample_text)
print(result)
```

```
@Jags123456 Bharat band on 28??<ed><ed>Those who  are protesting #demoneti
zation  are all different party leaders
```

In [ ]:

```
#Question 29- Write a python program to extract dates from the text stored in the text fi
#Sample Text: Ron was born on 12-09-1992 and he was admitted to school 15-12-1999.
#Note- Store this sample text in the file and then extract dates.
```

In [28]:

```
#Question 30- Create a function in python to remove all words from a string of length bet
#The use of the re.compile() method is mandatory.
#Sample Text: "The following example creates an ArrayList with a capacity of 50 elements.
#Expected Output:  following example creates ArrayList a capacity elements. 4 elements aa

import re

sample_text = "The following example creates an ArrayList with a capacity of 50 elements.
pattern = re.compile(r'\b\w{2,4}\b')
result = pattern.sub('' ,sample_text)
print(result)
```

```
 following example creates  ArrayList  a capacity   elements. 4 elements
added   ArrayList   ArrayList  trimmed accordingly.
```

In [ ]: