St. Francis Institute of Technology
Department of Computer Engineering

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Subject: Natural Language Processing   Class/Branch/: BE/CMPNA

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```python
import re
def text_match(text):
        patterns = '^a(b*)$'
        if re.search(patterns,  text):
                return ('Matched'  )
        else:
                return('Not matched')
print(text_match("a"))
print(text_match("aba"))
print(text_match("abb"))
print(text_match("abc"))
```

    Matched
    Not matched
    Matched

Saved successfully!   ×

2) Write a Python program that matches a string that has an a followed by one or more b's

```python
def text_match(text):
        patterns = 'ab+?'
        if re.search(patterns,  text):
                return ('Matched')
        else:
                return('Not matched')

print(text_match("ab"))
print(text_match("ac"))
print(text_match("abc"))
print(text_match("abb"))
print(text_match("a"))
```

    Matched
    Not matched
    Matched

```
Matched
Not matched
```

3) Write a Python program to find sequences of lowercase letters joined with a underscore.

```python
def text_match(text):
        patterns = '^[a-z]+_[a-z]+$'
        if re.search(patterns,  text):
                return ('Matched')
        else:
                return('Not Matched')

print(text_match("aab_cbbbc"))
print(text_match("aab_Abbbc"))
print(text_match("Aaab_abbbc"))
```

```
Matched
Not Matched
Not Matched
```

4) Write a Python program to find sequences of one upper case letter followed by lower case letters

```python
def text_match(text):
        patterns = '[A-Z]+[a-z]+$'
        if re.search(patterns, text):
                return ('matched')
```

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```python
print(text_match("Aishwarya"))
```

```
matched
```

5)Write a Python program that matches a word containing 'z'.

```python
import re
def text_match(text):
        patterns = '\w*z.\w*'
        if re.search(patterns,  text):
                return ('matched')
        else:
                return('Not matched')

print(text_match("Zlzjagai"))
print(text_match("abcdef"))
```

```
matched
Not matched
```

6)Write a Python program that matches a word containing 'z', not start or end of the word

```
import re
def text_match(text):
        patterns = '\Bz\B'
        if re.search(patterns,  text):
                return ('Matched')
        else:
                return('Not matched')

print(text_match("zoz"))
print(text_match("azdfe"))
```

```
Not matched
Matched
```

7) Write a Python program to match a string that contains only upper and lowercase letters, numbers, and underscores.

```
import re
def text_match(text):
        patterns = '^[a-zA-Z0-9_]*$'
        if re.search(patterns,  text):
                return ('matched')
```

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)

```
print(text_match("Aj12_$"))
print(text_match("Ahy8_"))
```

```
Not matched
matched
```

8) Write a Python program to search the numbers (0-9) of length between 1 to 3 in a given string.

```
import re
string = input ("Enter a string:")
nums = re.findall('[0-9]{1,3}',string)
for n in nums:
    print (n)
```

```
Enter a string:123 NLP
123
```

9) Write a Python program to search some literals strings in a string.

```python
import re
patterns = [ 'dog', 'man', 'ant' ]
text = 'The man owns a 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 "dog" in "The man owns a dog." ->
 Matched
 Searching for "man" in "The man owns a dog." ->
 Matched
 Searching for "ant" in "The man owns a dog." ->
 Not Matched
```

10) Write a Python program to replace whitespaces with an underscore and vice versa.

```python
import re
text = 'Nithin Menezes'
text =text.replace (" ", "_")
print(text)
text =text.replace ("_", " ")
print(text)
```

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Nithin Menezes

11)Write a Python program to separate and print the numbers of a given string.

```python
import re

text = "Roll no 56"
result = re.split("\D+", text)

for element in result:
    print(element)
```

```
 56
```

12) Write a Python program to find all words starting with 'a' or 'e' in a given string.

```
import re
text = "an elephant in the room. "
list = re.findall("[ae]\w+", text)
print(list)
```

```
['an', 'elephant']
```

13) Write a Python program to abbreviate 'Road' as 'Rd.' in a given string.

```
import re
street = 'Don Bosco Road'
print(re.sub('Road$', 'Rd.', street))
```

```
Don Bosco Rd.
```

14)Write a Python program to remove multiple spaces in a string.

```
import re
text1 = 'Nithin      Menezes'
print("Original string:",text1)
print("Without extra spaces:",re.sub(' +',' ',text1))
```

```
Original string: Nithin      Menezes
Without extra spaces: Nithin Menezes
```

15) Write a Python program to remove everything except alphanumeric characters from a string.

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```
import re
text1 = '$Nithin^a56//. '
pattern = re.compile('[\W_]+')
print(pattern.sub('', text1))
```

```
Nithina56
```

Conclusion: -

In this experiment, we learnt about regular expressions and also used the functions to solve the programming exercise. Different regular expressions were written and the output was obtained successfully.

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