PYTHON LAB PROGRAM 5

5)   **AIM: Demonstration of pattern recognition with and without using regular expressions.**

     a) Write a function called isphonenumber () to recognize a pattern 415-555-242 without using regular expression and also write the code to recognize the same pattern using regular expression.

```python
import re

def isphonenumber(numStr):
    if len(numStr) != 12:
        return False
    for i in range(len(numStr)):
        if i==3 or i==7:
            if numStr[i] != "-":
                return False
        else:
            if numStr[i].isdigit() == False:
                return False
    return True

def chkphonenumber(numStr):
    ph_no_pattern = re.compile(r'^\d{3}-\d{3}-\d{4}$')
    if ph_no_pattern.match(numStr):
        return True
    else:
        return False

ph_num = input("Enter a phone number : ")
print("Without using Regular Expression")
if isphonenumber(ph_num):
    print("Valid phone number")
else:
    print("Invalid phone number")

print("Using Regular Expression")
if chkphonenumber(ph_num):
    print("Valid phone number")
else:
    print("Invalid phone number")
```

OUTPUT:
CASE 1:
```
Enter a phone number: 2e34-334-32
Without using Regular Expression
Invalid phone number
Using Regular Expression
Invalid phone number
```

CASE 2:
```
Enter a phone number: 234-567-2345
Without using Regular Expression
Valid phone number
Using Regular Expression
Valid phone number
```

b) Develop a python program that could search the text in a file for phone numbers(+919900889977) and email addresses (sample@gmail.com)

```python
import re
phone_regex = re.compile(r'\+\d{12}')
email_regex = re.compile(r'[A-Za-z0-9._]+@[A-Za-z0-9]+\.[A-Z|a-z]{2,}')
with open('example.txt', 'r') as f:
    for line in f:
        matches = phone_regex.findall(line)
        for match in matches:
            print(match)

        matches = email_regex.findall(line)
        for match in matches:
            print(match)
```

OUTPUT:

tomcat@gmail.com
jerrymouse@gmail.com
spikethedog@gmail.com
+919986059013
+918310681568