Python Programming

EDUCATION FOR PEACE

(ESTD-1995)

RGM College of Engineering & Technology (Autonomous)

Department of Computer Science & Engineering

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REGULAR EXPRESSIONS - 5

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Learning Mantra

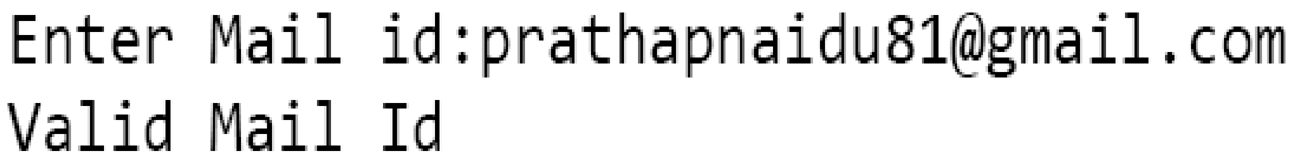
If you really strong in the basics, then remaining things will become so easy.

Agenda

1. **Example applications using Regular expressions**

App 5. Write a Python Program to check whether the given mail id is valid gmail id or not?

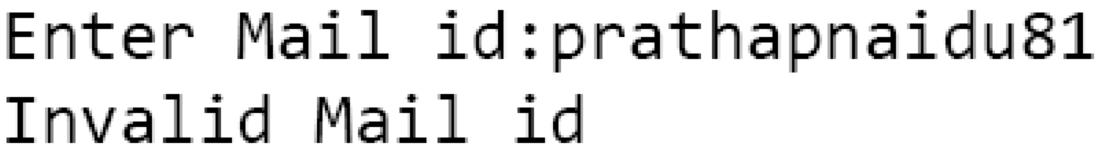
```
import re
s=input("Enter Mail id:")
m=re.fullmatch("\w[a-zA-Z0-9_.]*@gmail[.]com",s)
if m!=None:
    print("Valid Mail Id");
else:
    print("Invalid Mail id")
```



```
Enter Mail id:prathapnaidu81@gmail.com
Valid Mail Id
```

Eg:

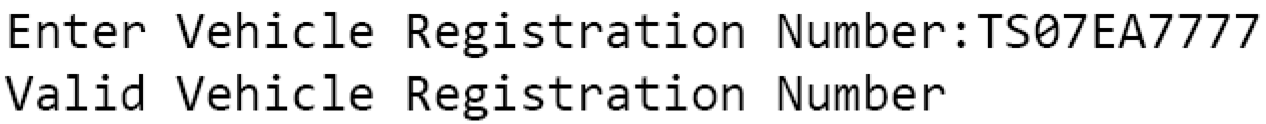
```
import re
s=input("Enter Mail id:")
m=re.fullmatch("\w[a-zA-Z0-9_.]*@gmail[.]com",s)
if m!=None:
    print("Valid Mail Id");
else:
    print("Invalid Mail id")
```



```
Enter Mail id:prathapnaidu81
Invalid Mail id
```

App 6. Write a python program to check whether given car registration number is valid Telangana State Registration number or not?

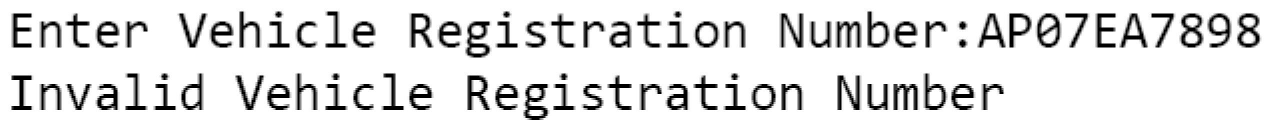
```
import re
s=input("Enter Vehicle Registration Number:")
m=re.fullmatch("TS[012][0-9][A-Z]{2}\d{4}",s)
if m!=None:
    print("Valid Vehicle Registration Number");
else:
    print("Invalid Vehicle Registration Number")
```



```
Enter Vehicle Registration Number:TS07EA7777
Valid Vehicle Registration Number
```

Eg:

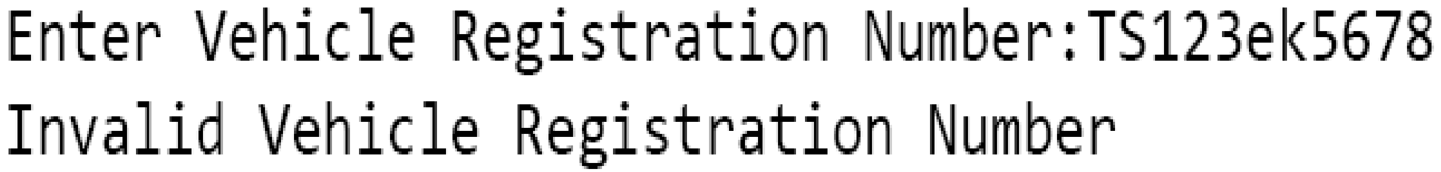
```
import re
s=input("Enter Vehicle Registration Number:")
m=re.fullmatch("TS[012][0-9][A-Z]{2}\d{4}",s)
if m!=None:
    print("Valid Vehicle Registration Number");
else:
    print("Invalid Vehicle Registration Number")
```



```
Enter Vehicle Registration Number:AP07EA7898
Invalid Vehicle Registration Number
```

Eg:

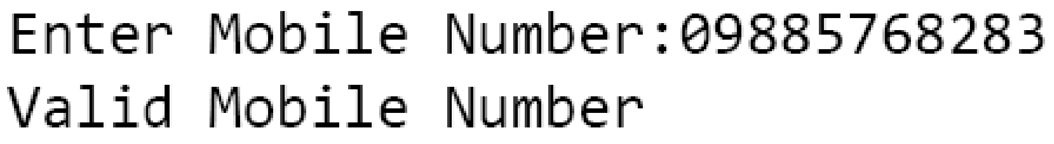
```
import re
s=input("Enter Vehicle Registration Number:")
m=re.fullmatch("TS[012][0-9][A-Z]{2}\d{4}",s)
if m!=None:
    print("Valid Vehicle Registration Number");
else:
    print("Invalid Vehicle Registration Number")
```



```
Enter Vehicle Registration Number:TS123ek5678
Invalid Vehicle Registration Number
```

App 7. Python Program to check whether the given mobile number is valid OR not (10 digit OR 11 digit OR 12 digit).

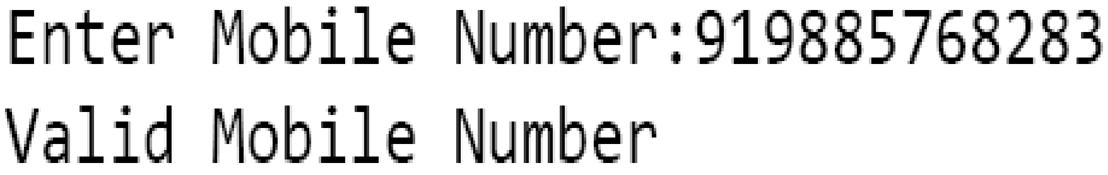
```
import re
s=input("Enter Mobile Number:")
m=re.fullmatch("(0|91)?[7-9][0-9]{9}",s)
if m!=None:
    print("Valid Mobile Number");
else:
    print("Invalid Mobile Number")
```



```
Enter Mobile Number:09885768283
Valid Mobile Number
```

Eg:

```
import re
s=input("Enter Mobile Number:")
m=re.fullmatch("(0|91)?[7-9][0-9]{9}",s)
if m!=None:
    print("Valid Mobile Number");
else:
    print("Invalid Mobile Number")
```



```
Enter Mobile Number:919885768283
Valid Mobile Number
```

Exercises:

1. Write a Python program to collect all **.com** urls from the given text file.

2. Write a Python program to display all **.txt** file names from the given directory.

Summary

- So far what we scratched the surface of regular expressions, we have learned a bit about the language of regular expressions.
- They are search strings with special characters in them that communicate your wishes to the regular expression system as to what defines “matching” and what is extracted from the matched strings.

Python Regular Expression Quick Guide

^ → Matches the beginning of the line.

$ → Matches the end of the line.

. → Matches any character (a wildcard).

\s → Matches a whitespace character.

\S → Matches a non-whitespace character (opposite of \s).

***** → Applies to the immediately preceding character(s) and indicates to match zero or more times.

***?** → Applies to the immediately preceding character(s) and indicates to match zero or more times in “non-greedy mode”.

+ → Applies to the immediately preceding character(s) and indicates to match one or more times.

+? → Applies to the immediately preceding character(s) and indicates to match one or more times in “non-greedy mode”.

? ➔ Applies to the immediately preceding character(s) and indicates to match zero or one time.

?? ➔ Applies to the immediately preceding character(s) and indicates to match zero or one time in "non-greedy mode".

[aeiou] ➔ Matches a single character as long as that character is in the specified set. In this example, it would match "a", "e", "i", "o", or "u", but no other characters.

[a-z0-9] ➔ You can specify ranges of characters using the minus sign. This example is a single character that must be a lowercase letter or a digit.

[ˆA-Za-z] ➔ When the first character in the set notation is a caret, it inverts the logic. This example matches a single character that is anything other than an uppercase or lowercase letter.

( ) ➔ When parentheses are added to a regular expression, they are ignored for the purpose of matching, but allow you to extract a particular subset of the matched string rather than the whole string when using findall().

\b ➔ Matches the empty string, but only at the start or end of a word.

\B ➔ Matches the empty string, but not at the start or end of a word.

\d ➔ Matches any decimal digit; equivalent to the set [0-9].

\D ➔ Matches any non-digit character; equivalent to the set [ˆ0-9].

Glossary

brittle code Code that works when the input data is in a particular format but is prone to breakage if there is some deviation from the correct format. We call this “brittle code” because it is easily broken.

greedy matching The notion that the + and * characters in a regular expression expand outward to match the largest possible string.

grep A command available in most Unix systems that searches through text files looking for lines that match regular expressions. The command name stands for “Generalized Regular Expression Parser”.

Any question?

If you try to practice programs yourself, then you will learn many things automatically

Spend few minutes and then enjoy the study

Thank You