Pattern Matching in Python

In Python, a regular expression is denoted as RE (REs, regexes or regex pattern) are imported through re module.
Python supports regular expression through libraries.

In Python regular expression supports various things like Modifiers, Identifiers, and White space characters.

Module used for Regular Expression in Python

RE

      import re

• "re" module included with Python primarily used for string searching and manipulation
• Also used frequently for web page "Scraping" (extract large amount of data from websites)

There are multiple functions from re module as :
• findall()
• search()
• split()
• sub()

findall() :

The findall() function returns a list containing all matches.

```
1  import re
2
3  str = "Marvellous Infosystems is in Maharashtra. Local language of
       Maharashtra is Marathi."
4
5  x = re.findall("Ma", str)
6
7  print(x)
8
9  x = re.findall("Pu", str)
10
11 print(x)
```
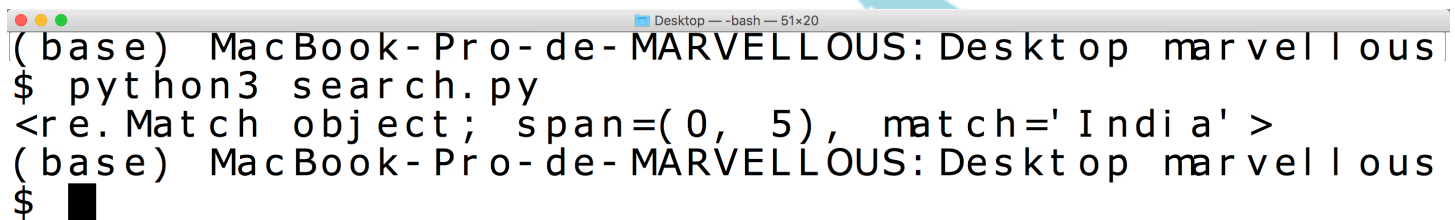
```
Desktop — -bash — 51×20
(base) MacBook-Pro-de-MARVELLOUS:Desktop marvellous
$ python3 findall.py
['Ma', 'Ma', 'Ma', 'Ma']
[]
(base) MacBook-Pro-de-MARVELLOUS:Desktop marvellous
$ ▉
```

search()

searches the string for a match, and returns a Match object if there is a match.
If there is more than one match, only the first occurrence of the match will be returned:

```
1  import re
2
3  str = "India is my country"
4
5  x = re.search("^India", str)
6
7  print(x)
8
```
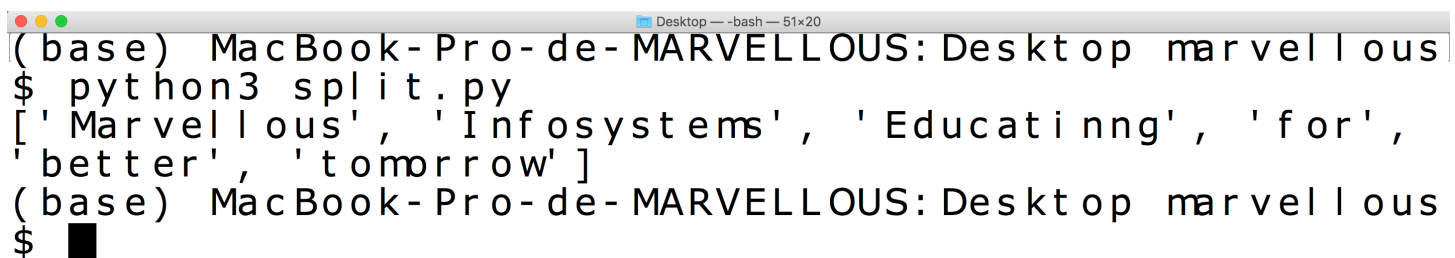
```
(base) MacBook-Pro-de-MARVELLOUS:Desktop marvellous
$ python3 search.py
<re.Match object; span=(0, 5), match='India'>
(base) MacBook-Pro-de-MARVELLOUS:Desktop marvellous
$ █
```

split()

The split() function returns a list where the string has been split at each match:

```
1  import re
2
3  str = "Marvellous Infosystems Educatinng for better tomorrow"
4
5  x = re.split("\s", str)
6
7  print(x)
```
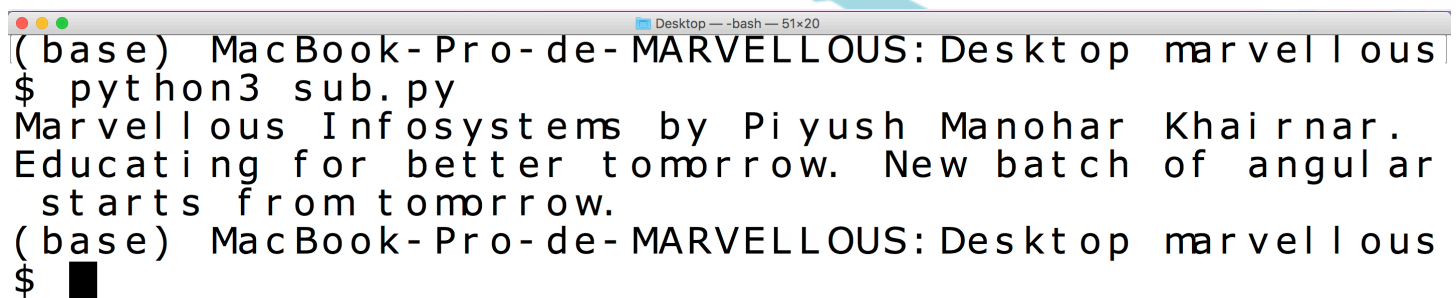
```
(base) MacBook-Pro-de-MARVELLOUS:Desktop marvellous
$ python3 split.py
['Marvellous', 'Infosystems', 'Educatinng', 'for',
'better', 'tomorrow']
(base) MacBook-Pro-de-MARVELLOUS:Desktop marvellous
$ █
```

sub()

The sub() function replaces the matches with the text of your choice:

```python
1  import re
2
3  str = "Marvellous Infosystems by Piyush Manohar Khairnar. Educating for
       better today. New batch of angular starts from today."
4
5  x = re.sub("today", "tomorrow", str)
6
7  print(x)
```

```
● ● ●                    Desktop — -bash — 51×20
(base) MacBook-Pro-de-MARVELLOUS:Desktop marvellous
$ python3 sub.py
Marvellous Infosystems by Piyush Manohar Khairnar.
Educating for better tomorrow. New batch of angular
 starts from tomorrow.
(base) MacBook-Pro-de-MARVELLOUS:Desktop marvellous
$ ■
```