```python
#1. Write a python for all the cases which can check a string contains only a certain set of characters (in this case a-z,A-Z and 0-9).
import re
def is_allowed_spcfc_char(str):
    charRe = re.compile(r'[^a-zA-Z0-9.]')
    str = charRe.search(str)
    return not bool(str)
print(is_allowed_spcfc_char("ABCdefg169"))
print(is_allowed_spcfc_char("!@#$%"))
```

Output: -

```
True
False
```

```python
#2. Write a python program that matches a word containing 'ab'.
import re
my_text = "There is an abnormal activity going on around here."
if (re.search('ab',my_text)):
    print("There is 'ab' in word.")
else:
    print("No match found!")
```

Output: -

```
There is 'ab' in word.
```

```python
#3. Write a python program to check for a number at the end of a word/sentence.
import re
def end_ws_num(str):
    txt = re.compile(r".*[0-9]$")
    if txt.match(str):
        return True
    else:
        return False
print(end_ws_num('abcd5efgh'))
print(end_ws_num('abcdefgh345'))
```

Output: -

```
False
True
```

```python
#4. Write a python program to search the numbers (0-9) of length between 1 to 3
in a given string.
import re
results = re.finditer(r"([0-
9]{1,3})","Exercise number 1,23,45 and 465 are important.")
print("Number of length 1 to 3:-")
for n in results:
    print(n.group(0))
```

Output: -

```
Number of length 1 to 3:-
1
23
45
465
```

```python
#5. Write a python program to match a string that contains only uppercase letters
import re
txt = "30 dayS 30 HoUr ChalLengE"
A = re.findall("[A-Z]",txt)
print(A)
```

Output: -

```
['S', 'H', 'U', 'C', 'L', 'E']
```