Question 1- Write a RegEx pattern in python program to check that a string contains only a certain set of characters (in this case a-z, A-Z and 0-9).

Solution 1-

```
import re

def check_string(input_string):

    pattern = re.compile("^[a-zA-Z0-9]+$")

    match = pattern.match(input_string)

    if match:

        print("The string contains only a-z, A-Z, and 0-9.")

    else:

        print("The string contains other characters.")

# Input the string which you want to check

input_str = "ParagBansal123"

check_string(input_str)
```

OUTPUT:

The string contains only a-z, A-Z, and 0-9.

Question 2- Write a RegEx pattern that matches a string that has an a followed by zero or more b's

Solution 2-

```
import re

pattern = re.compile(r'ab*')

# check the pattern

check_strings = ["AnjayBansal","anjay","Bansal"]

for check_str in check_strings:

    if pattern.match(check_str):
```

```
        print(f"Match: '{check_str}'")
    else:
        print(f"No match: '{check_str}'")
```

OUTPUT:

No match: 'AnjayBansal'
Match: 'anjay'
No match: 'Bansal'

Question 3- Write a RegEx pattern that matches a string that has an a followed by one or more b's

Solution 3-

```
import re
pattern = re.compile(r'ab+')
# check the pattern
check_strings = ["AnjayBansal","anjay","Bansal","anjaybansal","aba","abbbaa"]
for check_str in check_strings:
    if pattern.match(check_str):
        print(f"Match: '{check_str}'")
    else:
        print(f"No match: '{check_str}'")
```

OUTPUT:

No match: 'AnjayBansal'
No match: 'anjay'
No match: 'Bansal'
No match: 'anjaybansal'
Match: 'aba'
Match: 'abbbaa'

Question 4- Write a RegEx pattern that matches a string that has an a followed by zero or one 'b'.

Solution 4-

```
import re

pattern = re.compile(r'ab?')

# check the pattern
check_strings = ["AnjayBansal","anjay","Bansal","anjaybansal","aba","abbbaa"]
for check_str in check_strings:
    if pattern.match(check_str):
        print(f"Match: '{check_str}'")
    else:
        print(f"No match: '{check_str}'")
```

OUTPUT:

No match: 'AnjayBansal'
Match: 'anjay'
No match: 'Bansal'
Match: 'anjaybansal'
Match: 'aba'
Match: 'abbbaa'

Question 5- Write a RegEx pattern in python program that matches a string that has an a followed by three 'b'.

Solution 5-

```
import re

pattern = re.compile(r'ab{3}')



# check the pattern

check_strings = ["AnjayBansal","anjay","Bansal","anjaybansal","aba","abbbaa"]

for check_str in check_strings:

    if pattern.match(check_str):

        print(f"Match: '{check_str}'")

    else:

        print(f"No match: '{check_str}'")
```

OUTPUT:

No match: 'AnjayBansal'
No match: 'anjay'
No match: 'Bansal'
No match: 'anjaybansal'
No match: 'aba'
Match: 'abbbaa'

Question 6- Write a RegEx pattern in python program that matches a string that has an a followed by two to three 'b'.

Solution 6-

```
import re

pattern = re.compile(r'ab{2,3}$')

# check the pattern

check_strings = ["AnjayBansal","anjay","Bansal","anjaybansal","aba","abbbaa","abb","abbbb"]

for check_str in check_strings:

    if pattern.match(check_str):

        print(f"Match: '{check_str}'")

    else:

        print(f"No match: '{check_str}'")
```

OUTPUT:

No match: 'AnjayBansal'
No match: 'anjay'
No match: 'Bansal'
No match: 'anjaybansal'
No match: 'aba'
No match: 'abbbaa'
Match: 'abb'
No match: 'abbbb'

Question 7- Write a Python program that matches a string that has an 'a' followed by anything, ending in 'b'.

Solution 7-

```
import re

pattern = re.compile(r'a.*b$')


# check the pattern

check_strings = ["AnjayBansal","anjay","Bansal","anjaybansal","aba","abbbaa","abb","abbbb"]

for check_str in check_strings:

    if pattern.match(check_str):

        print(f"Match: '{check_str}'")

    else:

        print(f"No match: '{check_str}'")
```

OUTPUT:

```
No match: 'AnjayBansal'
No match: 'anjay'
No match: 'Bansal'
No match: 'anjaybansal'
No match: 'aba'
No match: 'abbbaa'
Match: 'abb'
Match: 'abbbb'
```

Question 8- Write a RegEx pattern in python program that matches a word at the beginning of a string.

Solution 8-

```
import re

pattern = re.compile(r'^\w+')


# check the pattern
```

```
check_strings =
["AnjayBansal","anjay","12ansal","anjaybansal","aba","abbbaa","abb","abbbb"]

for check_str in check_strings:

    if check_str[0].isalpha() and pattern.match(check_str):

        print(f"Match: '{check_str}'")

    else:

        print(f"No match: '{check_str}'")
```

OUTPUT:

Match: 'AnjayBansal'
Match: 'anjay'
No match: '12ansal'
Match: 'anjaybansal'
Match: 'aba'
Match: 'abbbaa'
Match: 'abb'
Match: 'abbbb'

Question 9- Write a RegEx pattern in python program that matches a word at the end of a string.

Solution 9-

```
import re
pattern = re.compile(r'\w+$')

# check the pattern
check_strings = ["AnjayBansal","anjay","12ansal","anjaybansal12#","aba","abbbaa","abb","ab
bbb"]
for check_str in check_strings:
    if pattern.search(check_str):
        print(f"Match: '{check_str}'")
    else:
        print(f"No match: '{check_str}'")
```

OUTPUT:

Match: 'AnjayBansal'
Match: 'anjay'
Match: '12ansal'
No match: 'anjaybansal12#'

Match: 'aba'
Match: 'abbbaa'
Match: 'abb'
Match: 'abbbb'

Question 10- Write a RegEx pattern in python program to find all words that are 4 digits long in a string.

Solution 10-

```
import re


pattern = re.compile(r'\b\d{4}\b')

# Test the pattern

input_string = "1234 word 5678 and 98765 4321 are examples of words with 4 digits."

matches = pattern.findall(input_string)


print("Words with 4 digits:", matches)
```

OUTPUT:

Words with 4 digits: ['1234', '5678', '4321']