Regular Expression Practice Questions

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).

Answer:- import re

```
def is_valid_string(s):
    pattern = re.compile(r'^[a-zA-Z0-9]+$')
     if pattern.match(s):
        return True
    else:
        return False
# Test cases
test_strings = ["shivakumar", "ram42", "shivram_!", "Example", "1234567890"]

for s in test_strings:
    result = is_valid_string(s)
    print(f"'{s}' is valid: {result}")
```

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

Answer:- import re

```
def text_match(text):
        patterns = '^b(b*)$'
        if re.search(patterns,  text):
                return 'Found a match!'
        else:
                return('Not matched!')
print(text_match("b"))
```

```
print(text_match("b"))
print(text_match("a"))
print(text_match("b"))
print(text_match("abb"))
```

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

Answer:- import re

```
def match_pattern(s):
    pattern = re.compile(r'^1b+$')
    if pattern.match(s):
        return True
    else:
        return False

# Test cases
test_strings = ["a", "ab", "abb", "b", "abbbb", "aab", ]

for s in test_strings:
    result = match_pattern(s)
    print(f"'{s}' matches pattern: {result}")
```

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

Answer:- import re

```
def match_pattern(s):
    pattern = re.compile(r'^ab?$')

    if pattern.match(s):
```

```
        return True
    else:
        return False

# Test cases
test_strings = ["b", "a", "c", "bb", "ab", ""]

for s in test_strings:
    result = match_pattern(s)
    print(f"'{s}' matches pattern: {result}")
```

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

Answer:-

```
import re

def match_pattern(s):
    # Define the regular expression pattern
    pattern = re.compile(r'^ab{3}$')

    if pattern.match(s):
        return True
    else:
        return False

# Test cases
test_strings = ["b", "ab", "abb", "abbb", "abbbb", "a", "aab", "abbb"]

for s in test_strings:
```

```
    result = match_pattern(s)
    print(f"'{s}' matches pattern: {result}")
```

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

Answer:-

```
import re

def match_pattern(s):
    pattern = re.compile(r'^ab{2,3}$')
    if pattern.match(s):
        return True
    else:
        return False


# Test cases
test_strings = ["b", "ab", "abb", "abbb", "abbbb", "a", "abb", "abbb"]


for s in test_strings:
    result = match_pattern(s)
    print(f"'{s}' matches pattern: {result}")
```

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

Answer:-

```
import re


def match_pattern(s):
    pattern = re.compile(r'^a.*b$')


    if pattern.match(s):
        return True
    else:
```

```
    return False

# Test cases
test_strings = ["axb", "bab", "a56b", "?abb", "b", "a", "abbb", "rushab", "axyz"]

for s in test_strings:
  result = match_pattern(s)
  print(f"'{s}' matches pattern: {result}")
```

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

Answer:- import re

```
def match_word_at_start(s):
  pattern = re.compile(r'^\w+')

  match = pattern.match(s)
  if match:
    return match.group()
  else:
    return None

# Test cases
test_strings = ["python is good", "123 go", "india is big country", "Special#characters!"]

for s in test_strings:
  result = match_word_at_start(s)
  print(f"'{s}' -> '{result}'")
```

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

Answer:- import re

```
def match_word_at_end(s):
    pattern = re.compile(r'\b\w+$')

    match = pattern.search(s)
    if match:
        return match.group()
    else:
        return None

# Test cases
test_strings = ["shivakumar heggannavar", "ramu patil", "top model", "rajesh desai",
"##9ramesh!patil"]

for s in test_strings:
    result = match_word_at_end(s)
    print(f"'{s}' -> '{result}'")
```

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

Sample text- '01 0132 231875 1458 301 2725.'

Expected output- ['0132', '1458', '2725']

Answer:- import re

```
def find_four_digit_words(s):
    # Define the regular expression pattern
    pattern = re.compile(r'\b\d{4}\b')

    return pattern.findall(s)
```

```
# Test string
text = '01 0132 231875 1458 301 2725.'

# Find all four-digit words
four_digit_words = find_four_digit_words(text)
print("Four-digit words:", four_digit_words)
```