Regex Practice !! 30 Exercises

Make use of Python functions and give input as function calls.

1. Write a Python program to check that a string contains only a certain set of characters (in this case A-P and 5-9)

```
print(check_string("ABCP579"))    # GOOD String
print(check_string("ABQ579"))     # BAD String (Q is not in A-P)
print(check_string("A9P"))        # GOOD String
print(check_string("a5P"))        # BAD String (lowercase 'a')
```

2. Write a Python program that matches a string that has an ‘a’ followed by zero or more k's

```
print(match_ak("a"))     # Match Found
print(match_ak("ak"))    # Match Found
print(match_ak("akkk"))  # Match Found
print(match_ak("b"))     # No Match
print(match_ak("akkp"))  # No Match
```

3. Write a Python program that matches a string that has an ‘a’ followed by one or more p's

```
print(match_app("ap"))     # Match Found
print(match_app("apppp"))  # Match Found
print(match_app("a"))      # No Match
```

4. Write a Python program that matches a string that has an ‘a’ followed by zero or one 'z'

```
print(match_az("a"))     # Match Found
print(match_az("az"))    # Match Found
print(match_az("azz"))   # No Match
```

5. Write a Python program that matches a string that has an ‘a’ followed by three 'h'

```
print(match_ahhh("ahhh"))  # Match Found
print(match_ahhh("ahh"))   # No Match
print(match_ahhh("ahhhh")) # No Match
```

6. Write a Python program that matches a string that has an ‘a’ followed by two to three 'b'.

```
print(match_abb("abb"))    # Match Found
print(match_abb("abbb"))   # Match Found
print(match_abb("ab"))     # No Match
```

7. Write a Python program to find sequences of lowercase letters joined with an underscore.

```
print(extract_lowercase_underscore("hello_world"))  # Output: hello_world
print(extract_lowercase_underscore("HELLO_world"))  # Output: No Match
print(extract_lowercase_underscore("hi_SARA"))      # Output: No Match
print(extract_lowercase_underscore("hi sara"))      # Output: No Match
print(extract_lowercase_underscore("cse_e"))        # Output: cse_e
```

8. Write a Python program to find the sequences of one upper case letter followed by lower case letters.

```
print(match_upper_lower("Hello"))  # Match Found
print(match_upper_lower("hello"))  # No Match
print(match_upper_lower("HELLO"))  # No Match
```

9. Write a Python program that matches a string that has an 'a' followed by anything, ending in 'a'.

```
print(match_a_anything_a("abcda"))  # Match Found
print(match_a_anything_a("a123a"))  # Match Found
print(match_a_anything_a("a"))      # No Match
```

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```
print(match_a_anything_a("ab"))     # No Match
```

10. Write a Python program that matches only words made of letters at the beginning of a string.
```
print(match_word_start("Hello world"))   # Output: Hello
print(match_word_start("123_go"))        # Output: No Match
print(match_word_start("!hi there"))     # Output: No Match
```

11. Write a Python program that matches only words made of letters and numbers at the end of string
```
print(match_word_end("Hello world"))     # Output: world
print(match_word_end("it's over_now"))   # Output: over_now
print(match_word_end("Done!"))           # Output: No Match
```

12. Write a Python program that matches a word containing 'z'.
```
print(match_word_with_z("buzzing bee"))  # Output: buzzing
print(match_word_with_z("hello world"))  # Output: (empty)
print(match_word_with_z("zebra"))  # Output: zebra
```

13. Write a Python program that matches a word containing 'i', not at the start or end of the word.
```
print(match_i_not_start_end("driving fast"))   # Output: driving
print(match_i_not_start_end("ice cream"))      # Output: (empty)
print(match_i_not_start_end("hi kani"))        # Output: (empty).
```

14. Write a Python program to match a string that contains only upper and lowercase letters, numbers, and underscores.
```
print(match_alnum_underscore("Valid_Name123"))  # Output: Valid
print(match_alnum_underscore("Invalid name!"))  # Output: Invalid
```

15. Write a Python program where a string will start with a number 8.
```
print(starts_with_8("8ball"))     # Output: Starts with 8
print(starts_with_8("88"))        # Output: Starts with 8
print(starts_with_8("nine"))      # Output: Does not start with 8
```

16. Write a Python program to remove leading zeros from an IP address.
```
print(remove_leading_zeros("192.168.001.001"))  # Output: 192.168.1.1
print(remove_leading_zeros("010.000.100.005"))  # Output: 10.0.100.5
```

17. Write a Python program to check for an underscore at the end of a string.
```
print(ends_with_underscore("data_"))    # Output: Ends with underscore
print(ends_with_underscore("data_set")) # Output: Does not end with underscore
```

18. Write a Python program to search the numbers (0-9) of length between 1 to 3 in a given string.
```
print(find_numbers_1_to_3_digits("My numbers are 5, 89, 123, and 4567."))  # ['5', '89', '123']
print(find_numbers_1_to_3_digits("No digits here, say 90009!"))                # [ ]
```

19. Write a Python program to search a set of strings in a given string. Sample text : 'Flowers are among the ecosystem's most important and beautiful parts. My favourite flower is the rose amongst all the other flowers! A red rose is the most attractive flower to look at. The name of the flower 'rose' originates from the Latin word 'Rosa'.' Searched for words : 'flower', 'rose'.
```
print(search_words(sample_text, ['flower', 'rose'])) #['flower', 'rose', 'rose', 'flower', 'flower', 'rose']
```

20. Write a Python program to search a literals string in a string and also find the location within the original string where the pattern occurs. Sample text : 'Flowers are among the ecosystem's most important and beautiful parts. My favourite flower is the rose amongst all the other flowers! A red rose is the most attractive flower to look at. The name of the flower 'rose' originates from the Latin word 'Rosa'.' Searched for word : 'rose'.

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{'word': 'rose', 'start': 97, 'end': 101}
{'word': 'rose', 'start': 139, 'end': 143}
{'word': 'rose', 'start': 210, 'end': 214}.

21. Write a Python program to find the substrings within a string. Sample text :
'Python exercises, C exercises, Java exercises' Pattern : 'exercises'
['exercises', 'exercises', 'exercises']

22. Write a Python program to find the occurrence and starting position of the substrings within a string.
{'match': 'exercises', 'start': 7}
{'match': 'exercises', 'start': 20}
{'match': 'exercises', 'start': 36}

23. Write a Python program to replace whitespaces with an underscore and vice versa.
Original: Dear students, We are coding Python
Dear_students,_We_are_coding_Python

Original: This_is_a_test_string
This is a test string

24. Write a Python program to extract domain names from an url.
print(extract_domain("https://www.google.com/search?q=python")) # Output: google.com
print(extract_domain("http://example.org/about")) # Output: example.org

25. Write a Python program to convert a date of yyyy-mm-dd format to dd-mm-yyyy format.
print(convert_date_format("2025-05-06")) # Output: 06-05-2025
print(convert_date_format("1999-12-31")) # Output: 31-12-1999

26. Write a Python program to match two words from a list of words starting with the letter 'S'.
print(match_two_s_words(['Sun', 'sky', 'moon', 'Star', 'tree'])) # Output: ['Sun', 'sky']
print(match_two_s_words(['apple', 'School', 'Science'])) # Output: ['School', 'Science']

27. Write a Python program to separate and print the numbers of a given string.
print(extract_numbers("The price is 45 dollars and 10 cents")) # ['45', '10']

28. Write a Python program to find all words starting with 'a' or 'e' in a given string.
print(words_starting_with_a_or_e("Eagle is a bird and Fox is an animal"))
 # Output: ['Eagle', 'a', 'and', 'an', 'animal'].

29. Write a Python program to separate and print the numbers and their position of a given string.
print(extract_numbers_with_positions("There are 2 cats, 15 dogs, and 100 birds"))
 # Output: [('2', 10), ('15', 19), ('100', 31)]

30. Write a Python program to abbreviate 'End Of Day' as 'eod.' in a given string.
print(abbreviate_eod("The meeting is scheduled by the End Of Day"))
 # Output: The meeting is scheduled by the eod.

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