+ Code + Text

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Q1. What is the benefit of regular expressions?

Answer: Regular expressions provide a flexible and concise means to match strings of text. For example, a regular expression could be used to search through large volumes of text and change all occurrences of "cat" to "dog". Regular expressions are useful in search and replace operations. The typical use case is to look for a sub-string that matches a pattern and replace it with something else. Most APIs using regular expressions allow you to reference capture groups from the search pattern in the replacement string.

Q2. Describe the difference between the effects of "(ab)c+" and "a(bc)+." Which of these, if any, is the unqualified pattern "abc+"?

Answer: There are no difference between the effect of "(ab)c+" and "a(bc)+." because in this syntax string inside given any value is no changing. because inside string any leter , symbol it only identify the string..

Q3. How much do you need to use the following sentence while using regular expressions?

import re

Answer: A Regular Expressions (RegEx) is a special sequence of characters that uses a search pattern to find a string or set of strings. It can detect the presence or absence of a text by matching it with a particular pattern, and also can split a pattern into one or more sub-patterns. Python provides a re module that supports the use of regex in Python. Its primary function is to offer a search, where it takes a regular expression and a string. Here, it either returns the first match or else none.

```
import re
```

```
s = 'data science is amalgmations of statistics,probability , programming. it is too much dem

match = re.search(f'statistics', s)
print('Start Index:', match.start())
print('End Index:', match.end())
```

```
Start Index: 32
End Index: 42
```

Q4. Which characters have special significance in square brackets when expressing a range, and under what circumstances?

Answer: o show a range of characters, use square backets and separate the starting character from the ending character with a hyphen. For example, [0-9] matches any digit. Several ranges can be put inside square brackets. For example, [A-CX-Z] matches 'A' or 'B' or 'C' or 'X' or 'Y' or 'Z'.Square brackets (“[ ]”): Any expression within square brackets [ ] is a character set; if any one of the characters matches the search string, the regex will pass the test return true.

Q5. How does compiling a regular-expression object benefit you?

Answer: We can combine a regular expression pattern into pattern objects, which can be used for pattern matching. It also helps to search a pattern again without rewriting it.The compile() function takes as input a simple regular expression and produces a compiled expression that can be used with the step() and advance() functions. The first parameter instring is never used explicitly by compile(). It is a pointer to a character string defining a source regular expression.

Q6. What are some examples of how to use the match object returned by re.match and re.search?

Answer: match() function. When provided with a regular expression, the re. match() function checks the string to be matched for a pattern in the RegEx and returns the first occurrence of such a pattern match.The re.search() and re.match() both are functions of re module in python. These functions are very efficient and fast for searching in strings. The function searches for some substring in a string and returns a match object if found, else it returns none.

There is a difference between the use of both functions. Both return the first match of a substring found in the string, but re.match() searches only from the beginning of the string and return match object if found. But if a match of substring is found somewhere in the middle of the string, it returns none. While re.search() searches for the whole string even if the string contains multi-lines and tries to find a match of the substring in all the lines of string.

Q7. What is the difference between using a vertical bar (|) as an alteration and using square brackets as a character set?

Answer: Usually we use square brackets - [ ] - for special purposes such as in technical manuals. Round brackets - ( ) - are used in a similar way to commas when we want to add further explanation, an afterthought, or comment that is to do with our main line of thought but distinct from it.

Q8. In regular-expression search patterns, why is it necessary to use the raw-string indicator (r)? In replacement strings?

Answer: Regular Expressions usually contain a lot of backslashes(). When using Python's “re” module , regular expressions are represented as strings. So, like all strings with a lot of backslashes, they are more readable when written in raw literal form. Raw Strings are amazing for regex