

5. QUALIFICATIONS

Using the Plus Sign

Introduction

Another “qualification metacharacter” is the Plus Sign (“+”). It is also similar to the Question Mark and the Wildcard Star but looks for one or more instances of a character or group of characters. **The Plus metacharacter is matched if there is one or more instances of the preceding character (or grouping) in a Regular Expression.**

Why Use the Plus?

If we are trying to match with either “colour” and “color”, and we tried to do it by placing the plus after the letter ‘u’ (it would be *wrong*), as follows:

```
RegEx_Pattern = "colou+r" ❌
```

This is wrong because it would match with “colour”, but it would not match with “color”, as the “u” must appear at least once. And we remember that it would also match with “colouur”, “colouuur”, “colouuuur”, “colouuuuur”, etc.

However, if we wanted to search a text file for all instances of “Yippee”, including “Yippe” and “Yippeeeeeee” (so the number of e’s varies), we could do so as follows:

```
RegEx_Pattern = "Yippe+"
```

And this would match with “Y”, “I”, “p”, “p”, and one or more “e”s. This is slightly more compact than the equivalent Wildcard version we have seen (“Yippee*”).

If we had an online form, and one of the fields in the form had to have at least one character (or more) in it, we could do that as follows:

```
RegEx_Pattern = ".+"
```

Which means any character (period), at least one time or more times (plus sign).

If we wanted the field to have one or more lowercase characters:

```
RegEx_Pattern = "[a-z]+"
```

Which means any lowercase character ([a-z]), one or more times (plus sign).

If we wanted the field to have one or more uppercase characters:

```
RegEx_Pattern = "[A-Z]+"
```

Which means any uppercase character ([A-Z]), one or more times (plus sign).

And if we wanted the field to have one or more numerical characters:

```
RegEx_Pattern = "[0-9]+"
```

Which means any numerical character ([0-9]), one or more times (plus sign).

Matching the Plus Character

If we are searching for the actual plus character (not the metacharacter), then mathematically we represent it as follows: \+

However, most programming languages prefer we state the plus sign as:

```
RegEx_Pattern = "\\+"
```

And this will allow us to locate the plus character in a String.

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