Regular Expression

Regex, RegExp, Regular Expression, Tips, Java

일부 내용은 손에 잡히는 정규 표현식에서 발췌

기본 개념

Quantifier

수량자.

과하게 일치하는 상황 방지

- Greedy Qualifier : 최대로 일치
- Lazy Qualifier : 최소로 일치

Greedy Qualifier	Lazy Qualifier
*	*?
+	+?
{n,}	{n,}?

예시

```
(?i)<b>.*</b>
```

ak and hi

```
(?i)<b>.*?</b>
```

ak and hi

Backreference

괄호로 감싼 하위 표현식을 참조하는 정규 표현식. $1~n 으로 표현. (일부 언어는 $대신 /을 사용하기도 한다.)

변수와 비슷.

예시

```
String eg1 = "Hello, xxx@xxx.com is my email address.";
String result1 = eg1.replaceAll("(\\w+[\\w.]*@[\\w.]+\\.\\w+)", "<a
```

```
href=\"$1\">$1</href>");
System.out.println(result1); // Hello, <a
href="ben@forta.com">ben@forta.com</href> is my email address.

String eg2 = "031-123-1234";
String result2 = eg2.replaceAll("(\\d{3})(-)(\\d{3})(-)(\\d{4})", "($1) $3-
$5");
System.out.println(result2); // (031) 123-1234
```

Lookaround

일치하는 영역을 제외하고, 일치하는 영역 기준으로 이전 혹은 이후 값을 반환

Lookahead

전방 탐색. ?=

```
.+(?=:)
```

http://www.google.com
https://mail.google.com
ftp://ftp.xxx.xyz

Lookbehind

후방 탐색. ?<=

```
(?<=\$)[0-9.]+
```

A11 : $23.34
B22 : $5.31
Total items found : 2

Java

https://docs.oracle.com/javase/7/docs/api/java/util/regex/Pattern.html

```
Pattern p = Pattern.compile("^REGULAR_EXPRESSION$",
Pattern.CASE_INSENSITIVE); // regex, pattern
Matcher m = p.matcher(STRING);
```

```
boolean b = m.matches();
```

Pattern Constant

```
Pattern.CASE_INSENSITIVE    (?i)
Pattern.COMMENTS            (?x)
Pattern.MULTILINE           (?m)
Pattern.DOTALL              (?s)
Pattern.LITERAL             None
Pattern.UNICODE_CASE        (?u)
Pattern.UNIX_LINES          (?d)
```

POSIX character classes (US-ASCII only)

```
p{Lower}    A lower-case alphabetic character: [a-z]
p{Upper}    An upper-case alphabetic character:[A-Z]
p{ASCII}    All ASCII:[\x00-\x7F]
p{Alpha}    An alphabetic character:[\p{Lower}\p{Upper}]
p{Digit}    A decimal digit: [0-9]
p{Alnum}    An alphanumeric character:[\p{Alpha}\p{Digit}]
p{Punct}    Punctuation: One of !"#$%&'()*+,-./:;<=>?@[\]^_`{|}~
p{Graph}    A visible character: [\p{Alnum}\p{Punct}]
p{Print}    A printable character: [\p{Graph}\x20]
p{Blank}    A space or a tab: [ \t]
p{Cntrl}    A control character: [\x00-\x1F\x7F]
p{XDigit}   A hexadecimal digit: [0-9a-fA-F]
p{Space}    A whitespace character: [ \t\n\x0B\f\r]
```

활용

전화번호

```
^(02|0[3-6]{1}[1-5]{1})-?[0-9]{3,4}-?[0-9]{4}$ //지역번호-xxx(x)-xxxx
^(15(44|77|88|99)|1644)-?[0-9]{4}$ //15xx/1644-xxxx
```

소괄호 안 문자(Parameter) 추출

```
String str = "(int a, int b)";

Pattern p = Pattern.compile("\\((.*?)\\)");
Matcher m = p.matcher(str);

while(m.find())
    System.out.println(m.group(1));
```

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