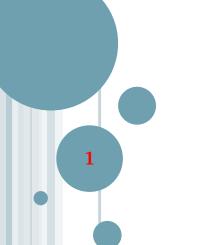
SOEN 287

Chapter 4: JavaScript (5)



Dr. Yuhong Yan CSE, Concordia University Winter, 2023



Pattern Matching

Why pattern matching

```
var str = "Gluckenheimer";
var position = str.search(/heim/);
   /* position is now 7 */
var matchStr = str.match(/heim/);
   /* matchStr is now "heim" */
```

- Returns the index of the matching string, or -1 if it fails
- Return matching string
- Patterns
 - normal characters (match themselves)
 - metacharacters (special meanings—not themselves)

Character classes

[abcd]

• any one of which matches

[a-z]

• Caret (circumflex): the negation

[^0-9]

• period . a single character, except newline or line terminator

/snow./



Character classes (2)

```
\d [0-9] a digit
\D [^0-9] not a digit
\w [A-Za-z_0-9] a word character
\W [^A-Za-z_0-9] not a word character
\s [ \r\t\n\f] a whitespace character
\s [^ \r\t\n\f] not a whitespace character
```

Examples

```
/\d\.\d\d/
/\D\d\D/
/\w\w\w/
```



iClicker Question

```
var str = "Today is Thursday";
var matchStr = str.match(/\w\w\w/);
```

- What is the value of marchStr?
 - A. Today
 - B. the same as str
 - C. Tod
 - D. none of the above

Answer:C



Quantifier

```
{m,} exactly n repetitions
{m,} at least m repetitions
{m, n} at least m but not more than n repetitions
```

```
* zero or more repetitions
+ one or more repetitions
? zero or one
```

examples

```
/xy{4}z/
/\d*/
/\d+/
```

More examples:

• one or more digits followed by a decimal point and possibly more digits

• any characters except new line end with .txt

Anchors

• The pattern can be forced to match only at the left end with ^; at the end with \$

```
/^Lee/
```

• Matches? "Lee Ann" or "Mary Lee Ann"

```
/red$/
```

• Matches? "A red car" or "This car is red"

```
/^Lee/ VS. /[^Lee]/
```



iClicker Question

```
var str = "Is this all there is?";
var position = str.search(/^Is/);
var position2 = str.search(/[^Is]/);
```

- What is the value of position?
 - A. -1
 - B. 0
 - C. 2
 - D. none of the above

Answer:B

iClicker Question

```
var str = "Is this all there is?";
var position = str.search(/^Is/);
var position2 = str.search(/[^Is]/);
```

- What is the value of position 2?
 - A. -1
 - B. 0
 - C. 2
 - D. none of the above

Answer:C

Pattern modifiers

• i : ignore the case of letters

/oak/i matches "OAK" and "Oak" and

• x : ignore whitespace in the pattern

• g: global matching

Error: x is not supported in JavaScript

• m: Multiline mode. ^ matches beginning of line or beginning of string, and \$ matches end of line or end of string.

Supported in JavaScript, but not talked in the textbook

Pattern matching methods of String

• string.replace(regexp/substr,newstring)

```
var str = "Some rabbits are rabid";
str.replace(/rab/g, "tim");
```

o string.match(regexp)

```
var str = "My 3 kings beat your 2 aces";
var matches = str.match(/\d/g);
```

• string.split(separator, limit)

```
var str = "grapes:apples:oranges";
var matches = str.split(":");
```

• string.search(regexp)

```
var ok = num.search(/^{d{3}-d{4}})
```

The End

