Video 2.6
Chris Murphy

Review

- JavaScript strings are sequences of characters
- JavaScript strings are immutable
- Strings are objects and have their own functions

Strings and Characters

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var animal = 'cat';
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var animal = 'cat';

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- Remember! JavaScript strings are immutable!

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var animal = 'cat';

animal[0] = 'r';

console.log(animal); // still 'cat'
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var message = `hello everyone`;
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var message = ' hello everyone ';
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var myAnimal = 'cat'.concat('mouse');
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Searching Strings

- We can determine whether a string starts with, ends with, or includes other strings

```
var msg = 'programming in JavaScript is fun';

msg.startsWith('programming');    // true
msg.startsWith('PROGRAMMING');    // false

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var title = 'the title of my book';
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Regular Expressions

- A **regular expression** is a pattern of characters
- A string **matches** a regular expression if it adheres to the same pattern
- Example: "consists of exactly three digits (0-9)"
  - '123' matches
  - 'abc' does not match
  - '12' does not match
  - '12345' does not match

Simple Regular Expression Matching

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var password = 'password4real';
password.search(/[a-z]/);       // 0
password.search(/\d/);          // 8
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Quantifiers

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/[a-z][0-9]?[a-z]/.test('a1b');

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Quantifiers

- We may want to know whether the string contains an optional **single** occurrence

```
/[a-z][0-9]?[a-z]/.test('a1b');  // true

/[a-z][0-9]?[a-z]/.test('abc');

/[a-z][0-9]?[a-z]/.test('a123b');
```

Quantifiers

- We may want to know whether the string contains an optional **single** occurrence

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- Or optional **multiple** occurrences

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/[a-z][0-9]*[a-z]/.test('a123b');
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- We may want to know whether the string contains an optional **single** occurrence

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/[a-z][0-9]?[a-z]/.test('a123b');// false
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startsWith and endsWith Matches

- Regular expressions can tell us if a string **contains** a pattern, but we may want to know if the string **starts** or **ends** with the pattern

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/^[a-z][0-9]/.test('a1b');
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```

- This lets us detect **exact** matches

```
/^[a-z][0-9][a-z]$/.test('a1b');

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/^[a-z][0-9a-z]*[a-z]$/.test('a1b2c');
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/[a-z][a-z]$/.test('123abc');       // true
/[a-z][a-z]$/.test('123abc456');    // false
```

- This lets us detect **exact** matches

```
/^[a-z][0-9][a-z]$/.test('a1b');          // true

/^[a-z][0-9][a-z]$/.test('a1b2c');        // false

/^[a-z][0-9a-z]*[a-z]$/.test('a1b2c'); // true
```

Summary

- JavaScript strings are immutable but provide functions that allow us to create new, modified versions of them

- Strings have **`startsWith`**, **`endsWith`**, **`includes`**, and **`search`** functions

- We can also use regular expressions' **`test`** function to check for matches in a string