More DOM

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Overview

- `window` based storage
- Leaning on CSS animation
- DOM Performance and Page Load

Client Side Storage

Background

- Modern concept
- Not Cookies!
- Cookies are used by the server to identify a client
- Storage is used by the client application for use in frontend

Storage API

- Available in the `window` object in most browsers
- String based only (no complex data structures)
- Browser specific! Be wary. What if user is on different devices?

Storage API

```javascript
// Local Storage extends the more generic Storage API
window.Storage

// refreshes once a user closes a tab
window.sessionStorage

// refreshes only after an explicit clear
window.localStorage
```

Local Storage API

```javascript
// Get a key value
localStorage.setItem('key', 'value')

// Get a key value
localStorage.getItem('key')

// clear storage
localStorage.clear()
```

Getting Round String Restrictions

```javascript
// Turn a JavaScript obj to a valid JSON string
JSON.stringify({ 'key': [10, 12, 13] })

// Turn a valid string
JSON.parse('{ "key": "ashdjkashdk" }'')
```

Further Reading

https://developer.mozilla.org/en-US/docs/Web/API/Window/localStorage
https://developer.mozilla.org/en-US/docs/Web/API/Window/sessionStorage
https://developer.mozilla.org/en-US/docs/Web/API/IndexedDB_API

CSS Animations

Super Basics

- Use CSS class toggling to manage animation
- Then use CSS transition property to enable animation
- Disclaimer: some properties don't animate

Example CSS

```
<style>
  .thing {
    transition: opacity 0.3s ease;
    opacity: 1;
  }

  .clear {
    opacity: 0;
  }
</style>
```

Example Basics

```
<html>
  <div class="thing">Thing</div>
</html>
<script>
  function disappear() {
    const thing = document.getElementsByClassName('thing')[0]
    thing.classList.toggle('clear')
  }
</script>
```

Now you see me!

Click to Disappear

Further reading

CSS Demo: transition

```
transition: margin-right 2s;
```

```
transition: margin-right 2s .5s;
```

```
transition: margin-right 2s ease-in-out;
```

```
transition: margin-right 2s ease-in-out .5s;
```

```
transition: margin-right 2s, color 1s;
```

```
transition: all 1s ease-out;
```

https://developer.mozilla.org/en-US/docs/Web/CSS/transition

Performance Basics

Common Errors

- Loading Assets/Scripts that aren't immediately needed
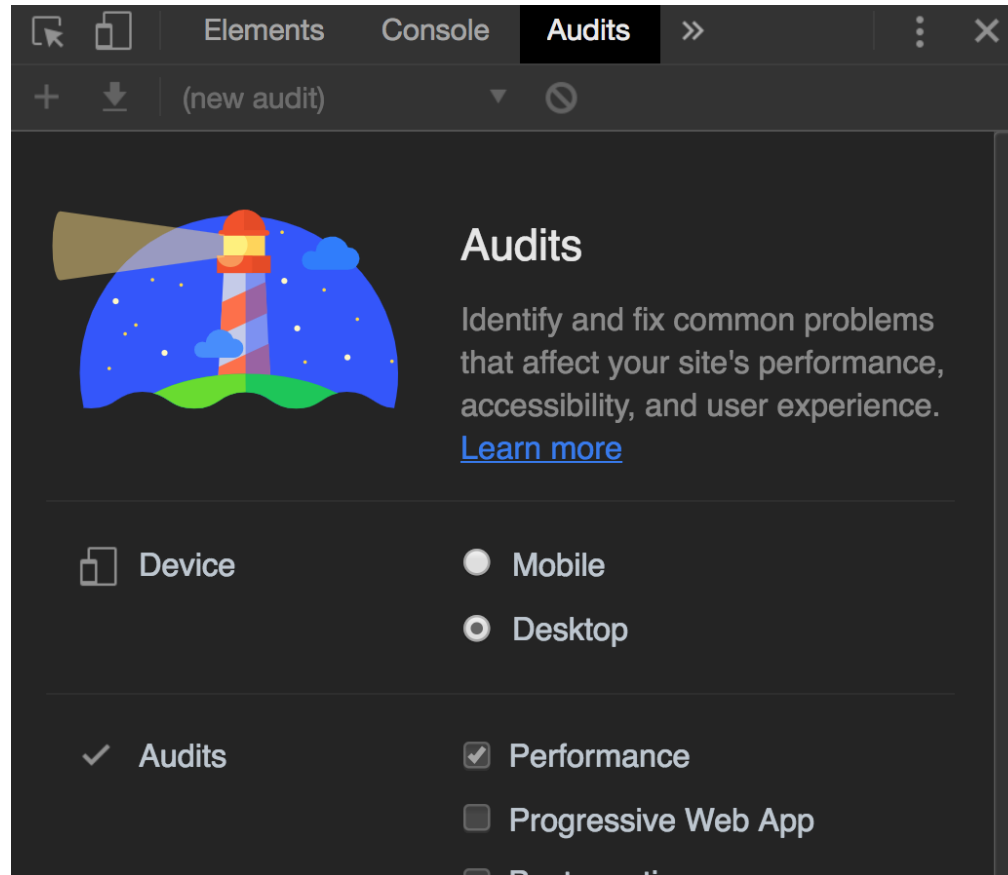- Too many Event Listeners/Listening to events too often

DOM Loading Example

Too Many/Eager Listeners

- Some events are meaningless to listen to too often
- Consider window resize event (expensive)
- Consider scrolldown functionality to get more results from an API (meaningless)

Further reading

Thanks!