

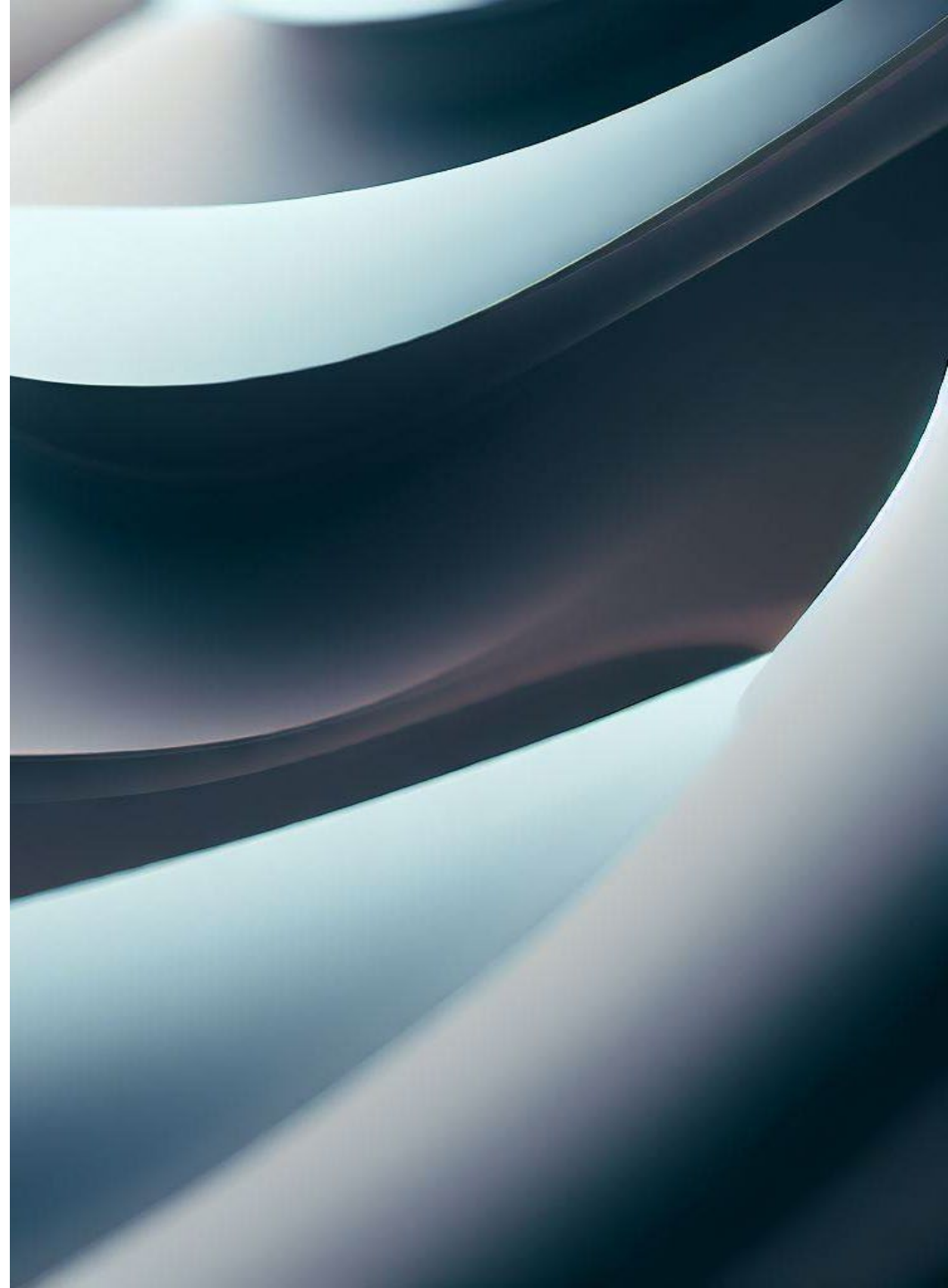
CTD Intro Week 14

Asynchronous Programming
Promises
Forms



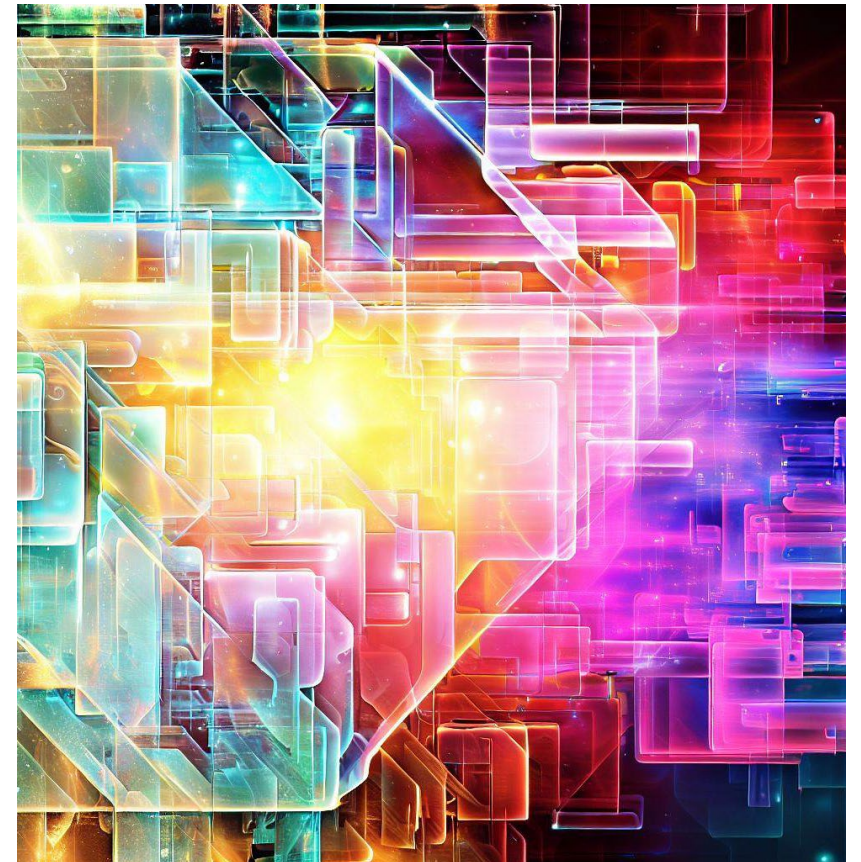
Forms

- Collect data from the user of a web page
- Originally designed to send data to the server
 - Many now interact with javascript in the client
 - As in this lesson
- Elements
 - `<form>` - contains the form
 - `<label>` - describe field(s)
 - `for="idOfInputElement"`
 - `<input type=...>`
 - Type of input, e.g. text, textbox, select, radio...
 - Validation, e.g. `required=true`
 - id matching label's for property



Asynchronous Javascript / Concurrency

- Asynchronous execution is powerful tool in javascript
 - There are many javascript functions which trigger asynchronous callback functions.
 - Such as `addEventListener`, `setTimeout`
- Concurrency is not (necessarily) parallelism
 - Javascript only supports a single thread of execution
 - The order of execution of asynchronous callback functions is not known
- When an event triggers a callback it is placed in a queue for execution
- When `index.js` is loaded, the code executes, possibly setting up asynchronous callback functions, such as event listeners.
 - After that individual callback functions are triggered asynchronously



Promises

- Convenient way to handle asynchronous execution
 - States: pending, fulfilled, rejected
- 'then' method specifies callback function(s)
 - resolve, reject
 - Asynchronous, executed on state change
- Chaining
 - `myPromise.then().then()... .catch()`
 - Next 'then' executes after previous 'then' resolve/reject
 - 'catch' can be chained to handle errors
- Handle asynchronous results inside callback functions
 - Trying to make it appear synchronous using `await` is difficult, inefficient and more trouble than it's worth



Hints on hiding an empty list

- Initially empty
- Becomes non-empty asynchronously
- Can become empty again asynchronously
- How to temporarily hide an element
 - Boolean 'hidden' property



Hints on implementing an edit button

- Bring the form back
- Store and then populate the current values
- Top-level functions to make edit and remove buttons
 - Defining their callbacks
 - They apply to their parentNode



Q&A and Demo

