Another view of the track: the `TEXTTRACK` JavaScript object

> The object that contains the cues (subtitles or captions or chapter description from the WebVTT file) is not the HTML track itself;
> it is another object that is associated with it: a `TextTrack` object!

The `TextTrack` object has different methods and properties for manipulating track content, and is associated with different events. But before going into detail, let's see how we can obtain a TextTrack object.

OBTAINING A TEXTTRACK OBJECT THAT CORRESPONDS TO AN HTML TRACK

First method: get a `TextTrack` from its associated HTML track

The HTML track element has a `track` property that returns the associated `TextTrack` object. Here is an example source code:

```
// HTML tracks
var htmlTracks = document.querySelectorAll("track");


// The TextTrack object associated with the first HTML track
var textTrack = htmlTracks[0].track;
var kind = textTrack.kind;
var label = textTrack.label;
var lang = textTrack.language;
// etc.
```

Notice that once we get a `TextTrack` object, we can manipulate

the `kind`, `label`, `language` attributes (be careful, it's not `srclang`, like the equivalent attribute name for HTML tracks). Other attributes and methods are described later in this lesson.

Second method: get `TextTrack` from the HTML video element

The <video> element (<audio> element too) has a TextTrack property accessible from JavaScript:

```
var videoElement = document.querySelector("#myVideo");
var textTracks = videoElement.textTracks; // one TextTrack for each HTML track element
var textTrack = textTracks[0]; // corresponds to the first track element
var kind = textTrack.kind // e.g. "subtitles"
var mode = textTrack.mode // e.g. "disabled", "hidden" or "showing"
```

The `mode` property of `TextTrack` objects

`TextTrack` objects have a `mode` property, that can be set to:

1. `"showing"`: the track is either already loaded, or is being loaded by the browser. As soon as it is completely loaded, subtitles or captions will be displayed in the video. Other kinds of track will be loaded but will not necessarily show anything visible in the document. *All tracks that have mode="showing" will fire events while the video is being played.*
2. `"hidden"`: the track is either already loaded, or is being loaded by the browser. *All tracks that have mode="hidden" will fire events while the video is being played. Nothing will be visible in the standard video player GUI.*
3. `"disabled"`: this is the mode where tracks are not being loaded. If a loaded track has its mode set to "disabled", it will stop firing events, and if it was in `mode="showing"` the subtitles or captions will stop being displayed in the video player.

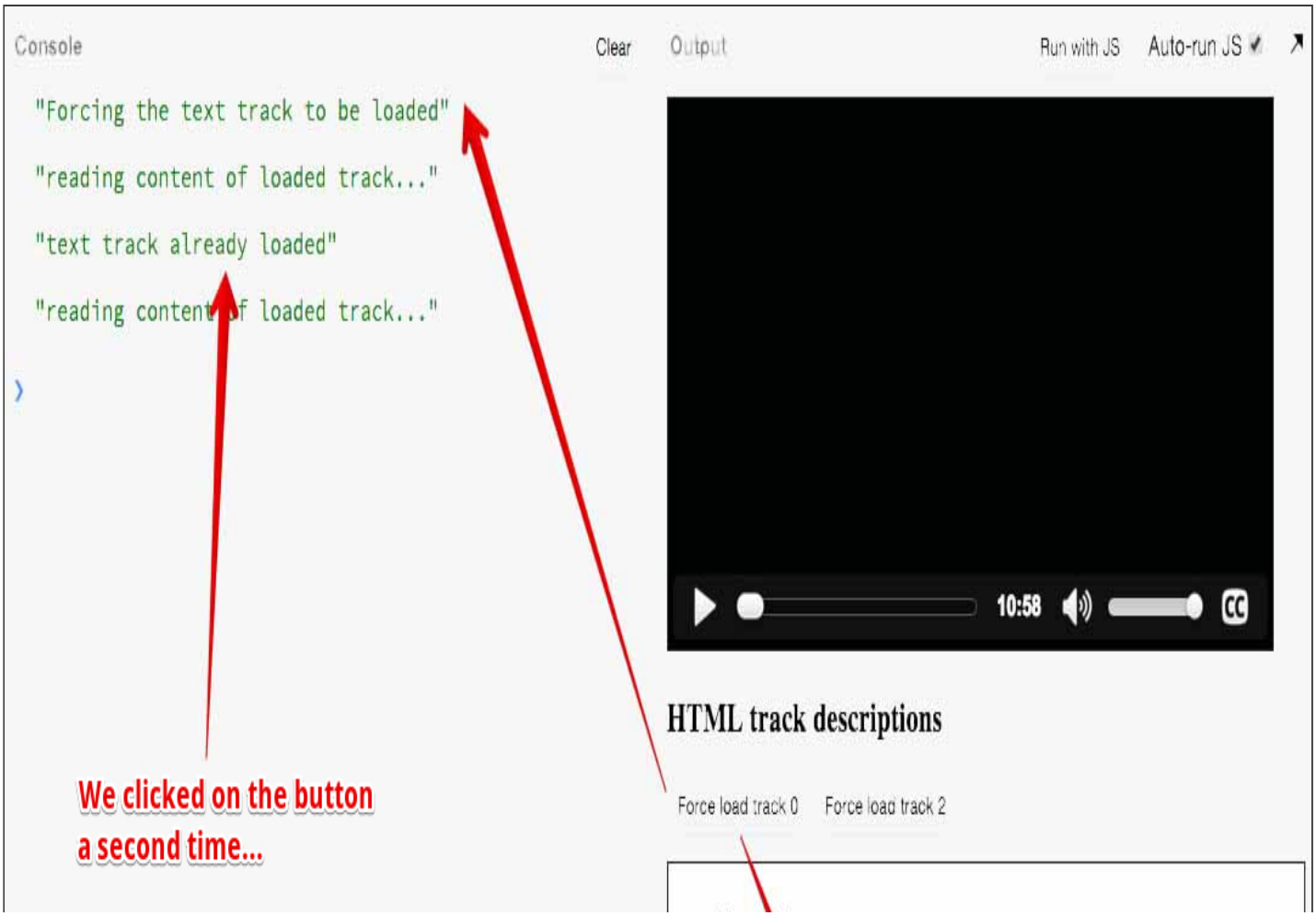
`TEXTTRACK` CONTENT CAN ONLY BE ACCESSED IF A TRACK HAS

BEEN LOADED! USE THE `MODE` PROPERTY TO FORCE LOAD A TRACK!

> **BE CAREFUL: you cannot access a `TextTrack` content if the corresponding HTML track has not been loaded by the browser!**
>
> It is possible to force a track to be loaded by setting the `mode` property of the TextTrack object to "showing" or "hidden".
> Tracks that are not loaded have their mode property equal to "disabled".

Here is an example that will test if a track has been loaded, and if it hasn't, will force it to be loaded by setting its mode to "hidden". We could have used "showing"; in this case, if the file is a subtitle or a caption file, then the subtitles or captions will be displayed on the video as soon as the track has finished loading.

Try the example at JSBin



Here is what we added to the HTML code:

```
    <button id="buttonLoadFirstTrack"
            onclick="forceLoadTrack(0);"
            disabled>
       Force load track 0
    </button>
    <button id="buttonLoadThirdTrack"
            onclick="forceLoadTrack(2);"
            disabled>
       Force load track 2
</button>
```

The buttons will call a function named `forceLoadTrack(trackNumber)` that takes as a

parameter the number of the track to get (and force load if necessary).

Here are the additions we made to the JavaScript code of the previous example:

```
function readContent(track) {
   console.log("reading content of loaded track...");
   displayTrackStatuses(htmlTracks); // update document
with new track statuses
}

function getTrack(htmlTrack, callback) {
   // TextTrack associated to the htmlTrack
   var textTrack = htmlTrack.track;
   if(htmlTrack.readyState === 2) {
      console.log("text track already loaded");
      // call the callback function, the track is available
      callback(textTrack);
   } else {
      console.log("Forcing the text track to be loaded");

      // this will force the track to be loaded
      textTrack.mode = "hidden";
      // loading a track is asynchronous, we must use an
event listener
      htmlTrack.addEventListener('load', function(e) {
         // the track is arrived, call the callback
function
         callback(textTrack);
      });
   }
}
function forceLoadTrack(n) {
    // first parameter = track number,
    // second = a callback function called when the track
is loaded,
    // that takes the loaded TextTrack as parameter
    getTrack(htmlTracks[n], readContent);
}
```

Explanations:

- *Lines 26-31*: the function called when a button has been clicked. This function in turn calls the `getTrack(trackNumber, callback)` function. It passes to it the `readContent` callback function as a parameter. This is typical JavaScript asynchronous programming: the `getTrack()` function may force the browser to load the track and this can take some time (a few seconds), then when the track is here, we ask the `getTrack` function to call the function we passed (the `readContent` function, which is known as a *callback* function), with the loaded track as a parameter.
- *Line 6*: the getTrack function. It first checks if the HTML track is already loaded (*line 10*). If it is, it calls the callback function passed by the caller, with the loaded TextTrack as a parameter. If the TextTrack is not loaded, then it sets its mode to "hidden". This will ask the browser to load the track. As it may take some time, we must use a `load` event listener on the HTML track before calling the callback function. This allows us to be sure that the track is really completely loaded.
- *Lines 1-4*: the readContent function is only called with a loaded TextTrack. Here we do nothing special for the moment except that we refresh the different track statuses in the HTML document.

KNOWLEDGE CHECK 1.2.3

When you force load a track, how can you be sure that it's loaded?

- You should define a `load` event listener on the html track element, when the track is loaded, the `load` event will be fired. Do the rest of your work with the track in this listener (reading its content, etc).
- Check the `readyState` property of its HTML track element. If it has a value=2, then the track is loaded.