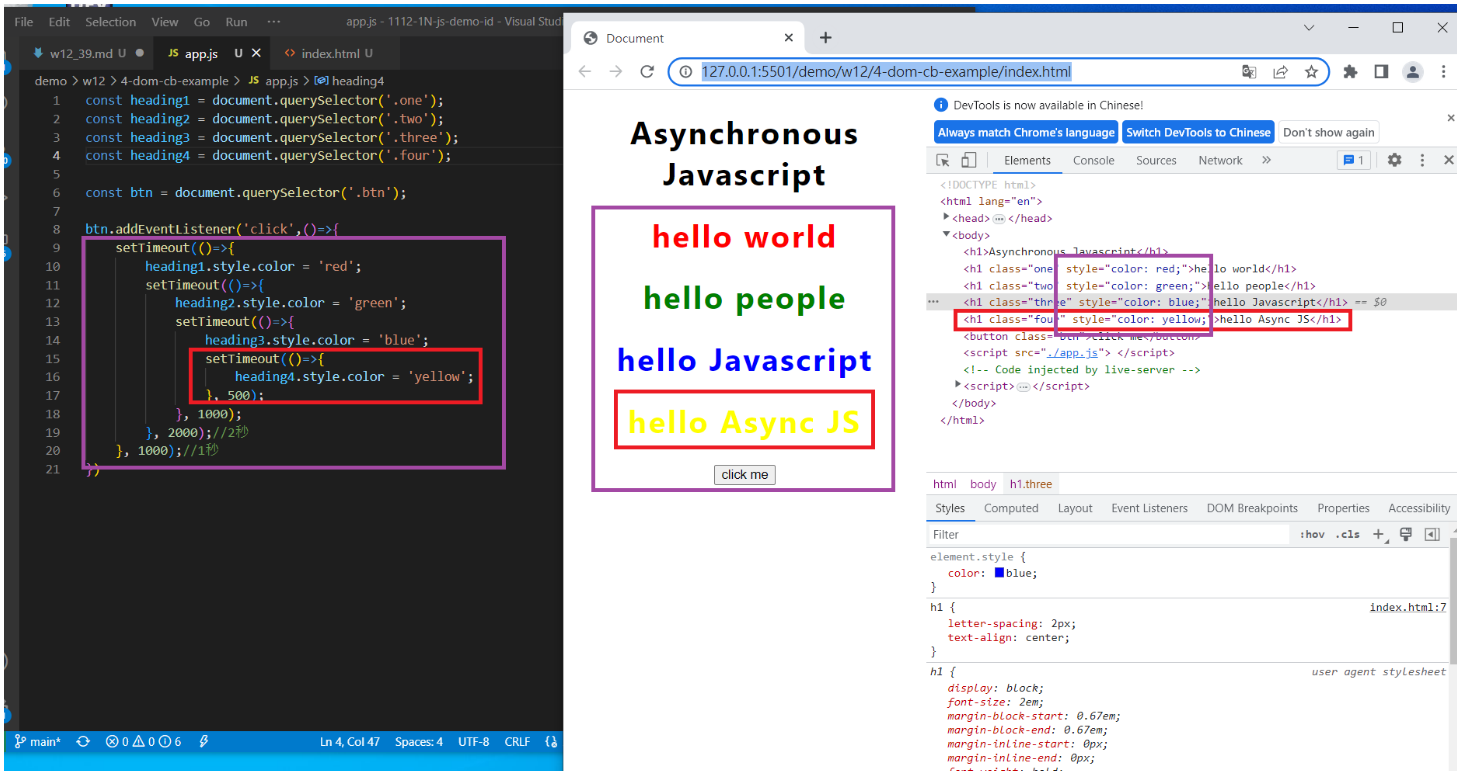
W12-P1: call back hell DOM demo


File Edit Selection View Go Run ···
app.js - 1112-1N-js-demo-id - Visual Studi
w12_39.md U ●
app.js U ×
index.html U
demo > w12 > 4-dom-cb-example > app.js > heading4
main* ⊗0 ⚠0 ⓘ6
Ln 4, Col 47 Spaces: 4 UTF-8 CRLF
Document
127.0.0.1:5501/demo/w12/4-dom-cb-example/index.html
DevTools is now available in Chinese!
Always match Chrome's language
Switch DevTools to Chinese
Don't show again
Elements Console Sources Network »
html body h1.three
Styles Computed Layout Event Listeners DOM Breakpoints Properties Accessibility
Filter :hov .cls

```
const heading1 = document.querySelector('.one');
const heading2 = document.querySelector('.two');
const heading3 = document.querySelector('.three');
const heading4 = document.querySelector('.four');

const btn = document.querySelector('.btn');

btn.addEventListener('click',()=>{
    setTimeout(()=>{
        heading1.style.color = 'red';
        setTimeout(()=>{
            heading2.style.color = 'green';
            setTimeout(()=>{
                heading3.style.color = 'blue';
                setTimeout(()=>{
                    heading4.style.color = 'yellow';
                }, 500);
            }, 1000);
        }, 2000);//2秒
    }, 1000);//1秒
})
```

Asynchronous Javascript

hello world

hello people

hello Javascript

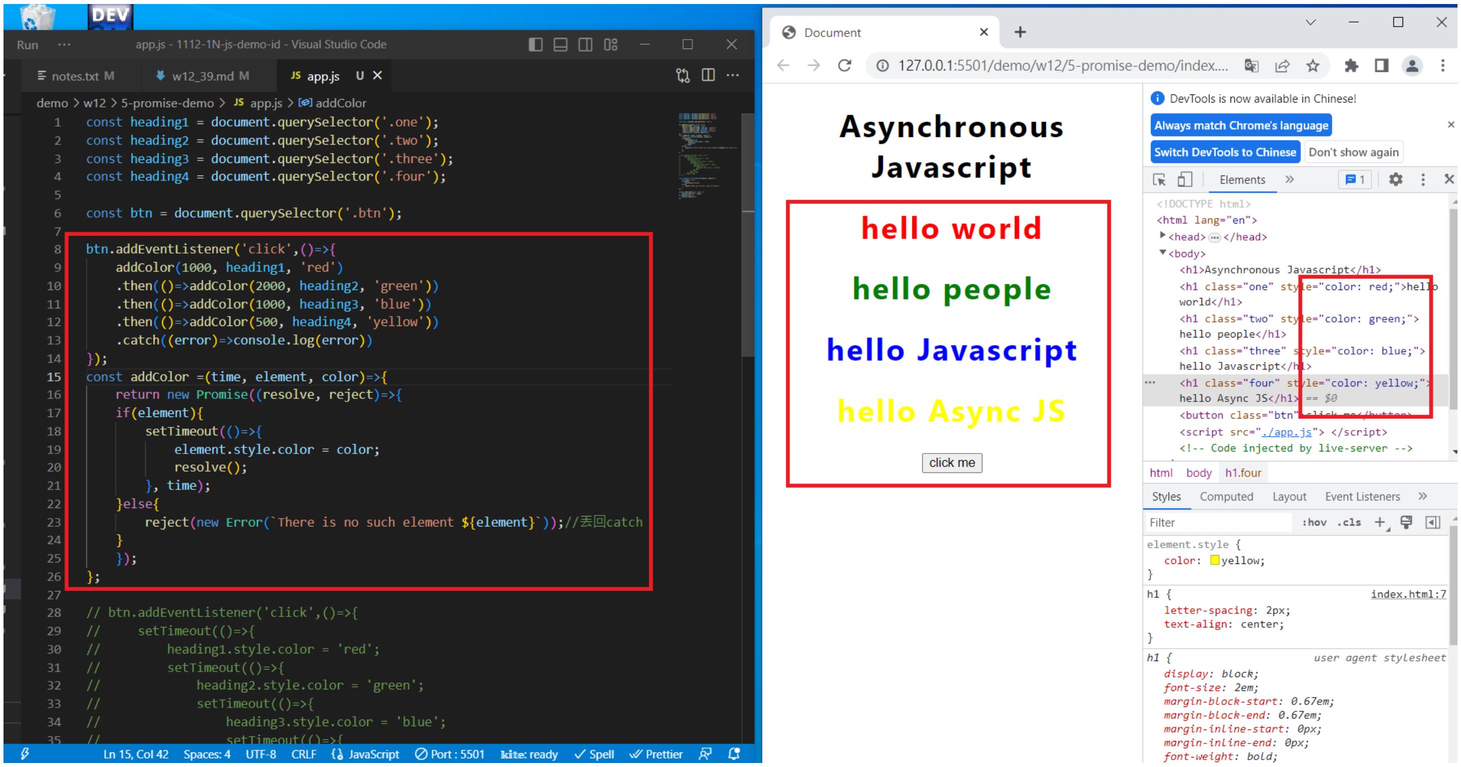
hello Async JS

click me

```
<!DOCTYPE html>
<html lang="en">
  <head> ··· </head>
  <body>
    <h1>Asynchronous Javascript</h1>
    <h1 class="one" style="color: red;">hello world</h1>
    <h1 class="two" style="color: green;">hello people</h1>
... <h1 class="three" style="color: blue;">hello Javascript</h1> == $0
    <h1 class="four" style="color: yellow;">hello Async JS</h1>
    <button class="btn">click me</button>
    <script src="./app.js"> </script>
    <!-- Code injected by live-server -->
    <script> ··· </script>
  </body>
</html>
```

```
element.style {
  color: ■blue;
}
h1 {                                        index.html:7
  letter-spacing: 2px;
  text-align: center;
}
h1 {                                user agent stylesheet
  display: block;
  font-size: 2em;
  margin-block-start: 0.67em;
  margin-block-end: 0.67em;
  margin-inline-start: 0px;
  margin-inline-end: 0px;
```

W12-P2: use promise to solve the cb hell problem


DEV
Run ···
app.js - 1112-1N-js-demo-id - Visual Studio Code
notes.txt M
w12_39.md M
app.js U ×
demo > w12 > 5-promise-demo > app.js > addColor
Ln 15, Col 42 Spaces: 4 UTF-8 CRLF JavaScript Port : 5501 kite: ready ✓ Spell ✓ Prettier
Document
127.0.0.1:5501/demo/w12/5-promise-demo/index....
DevTools is now available in Chinese!
Always match Chrome's language
Switch DevTools to Chinese
Don't show again
Elements »
html body h1.four
Styles Computed Layout Event Listeners »
Filter :hov .cls

```
const heading1 = document.querySelector('.one');
const heading2 = document.querySelector('.two');
const heading3 = document.querySelector('.three');
const heading4 = document.querySelector('.four');

const btn = document.querySelector('.btn');

btn.addEventListener('click',()=>{
    addColor(1000, heading1, 'red')
    .then(()=>addColor(2000, heading2, 'green'))
    .then(()=>addColor(1000, heading3, 'blue'))
    .then(()=>addColor(500, heading4, 'yellow'))
    .catch((error)=>console.log(error))
});
const addColor =(time, element, color)=>{
    return new Promise((resolve, reject)=>{
    if(element){
        setTimeout(()=>{
            element.style.color = color;
            resolve();
        }, time);
    }else{
        reject(new Error(`There is no such element ${element}`));//丟回catch
    }
    });
};

// btn.addEventListener('click',()=>{
//     setTimeout(()=>{
//         heading1.style.color = 'red';
//         setTimeout(()=>{
//             heading2.style.color = 'green';
//             setTimeout(()=>{
//                 heading3.style.color = 'blue';
//                 setTimeout(()=>{
```

Asynchronous Javascript

hello world

hello people

hello Javascript

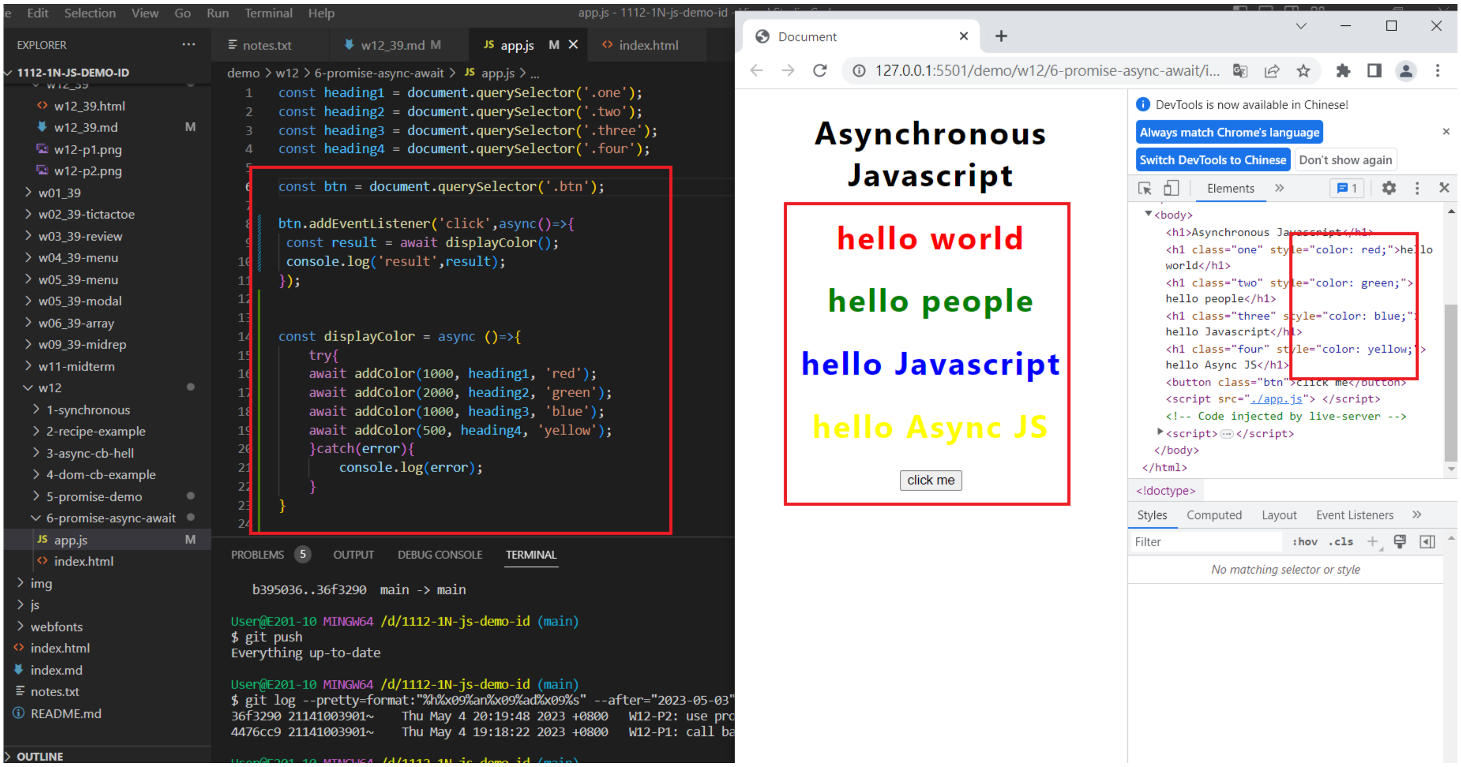
hello Async JS

click me

```
<!DOCTYPE html>
<html lang="en">
  <head> ··· </head>
  <body>
    <h1>Asynchronous Javascript</h1>
    <h1 class="one" style="color: red;">hello
    world</h1>
    <h1 class="two" style="color: green;">
    hello people</h1>
    <h1 class="three" style="color: blue;">
    hello Javascript</h1>
... <h1 class="four" style="color: yellow;">
    hello Async JS</h1> == $0
    <button class="btn">click me</button>
    <script src="./app.js"> </script>
    <!-- Code injected by live-server -->
```

```
element.style {
  color: □yellow;
}
h1 {                                        index.html:7
  letter-spacing: 2px;
  text-align: center;
}
h1 {                                user agent stylesheet
  display: block;
  font-size: 2em;
  margin-block-start: 0.67em;
  margin-block-end: 0.67em;
  margin-inline-start: 0px;
  margin-inline-end: 0px;
  font-weight: bold;
```

W12-P3: use astnc/await to solve the cb hell problem



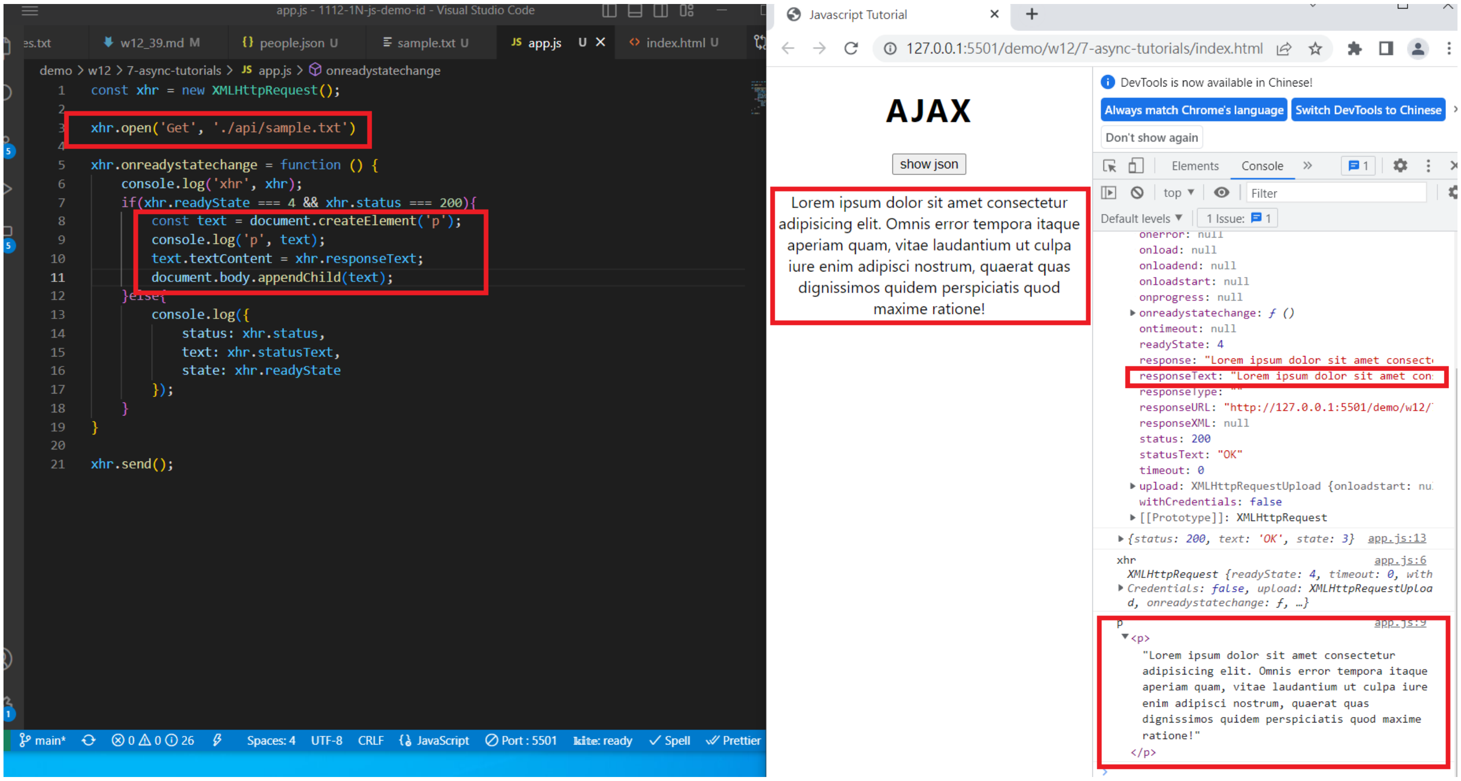
```
const heading1 = document.querySelector('.one');
const heading2 = document.querySelector('.two');
const heading3 = document.querySelector('.three');
const heading4 = document.querySelector('.four');

const btn = document.querySelector('.btn');

btn.addEventListener('click',async()=>{
 const result = await displayColor();
 console.log('result',result);
});


const displayColor = async ()=>{
    try{
    await addColor(1000, heading1, 'red');
    await addColor(2000, heading2, 'green');
    await addColor(1000, heading3, 'blue');
    await addColor(500, heading4, 'yellow');
    }catch(error){
        console.log(error);
    }
}
```

```
   b395036..36f3290  main -> main

User@E201-10 MINGW64 /d/1112-1N-js-demo-id (main)
$ git push
Everything up-to-date

User@E201-10 MINGW64 /d/1112-1N-js-demo-id (main)
$ git log --pretty=format:"%h%x09%an%x09%ad%x09%s" --after="2023-05-03"
36f3290 21141003901~    Thu May 4 20:19:48 2023 +0800   W12-P2: use pro
4476cc9 21141003901~    Thu May 4 19:18:22 2023 +0800   W12-P1: call ba
```

```
<body>
  <h1>Asynchronous Javascript</h1>
  <h1 class="one" style="color: red;">hello world</h1>
  <h1 class="two" style="color: green;">hello people</h1>
  <h1 class="three" style="color: blue;">hello Javascript</h1>
  <h1 class="four" style="color: yellow;">hello Async JS</h1>
  <button class="btn">click me</button>
  <script src="./app.js"> </script>
  <!-- Code injected by live-server -->
  <script>…</script>
</body>
</html>
```

W12-P4: xhr, get sample.txt

success reading



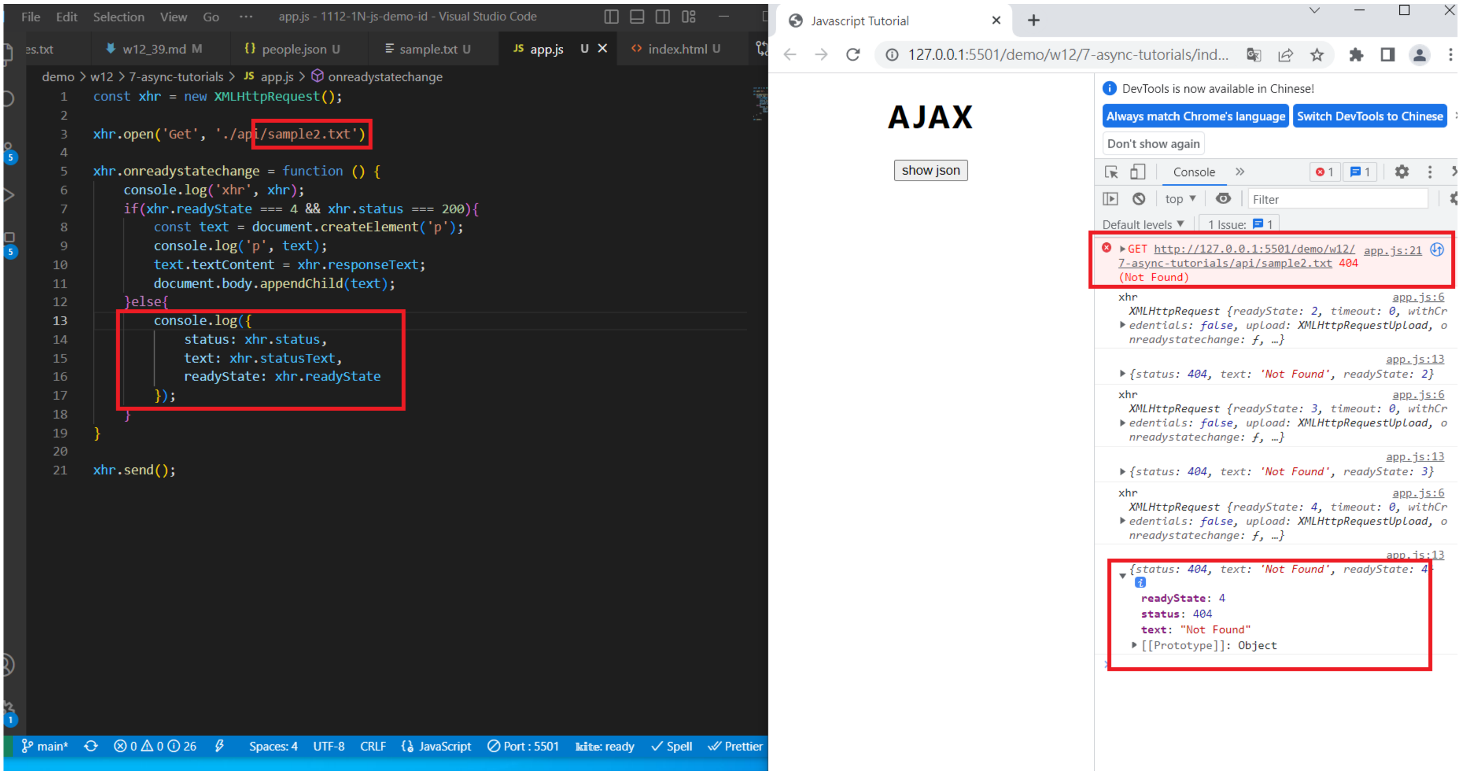
app.js - 1112-1N-js-demo-id - Visual Studio Code
es.txt
w12_39.md M
people.json U
sample.txt U
app.js U
index.html U
demo > w12 > 7-async-tutorials > app.js > onreadystatechange
main*
0 0 0 26
Spaces: 4
UTF-8
CRLF
JavaScript
Port : 5501
lite: ready
Spell
Prettier
Javascript Tutorial
127.0.0.1:5501/demo/w12/7-async-tutorials/index.html
AJAX
show json
DevTools is now available in Chinese!
Always match Chrome's language
Switch DevTools to Chinese
Don't show again
Elements
Console
top
Filter
Default levels
1 Issue: 1

```
const xhr = new XMLHttpRequest();

xhr.open('Get', './api/sample.txt')

xhr.onreadystatechange = function () {
    console.log('xhr', xhr);
    if(xhr.readyState === 4 && xhr.status === 200){
        const text = document.createElement('p');
        console.log('p', text);
        text.textContent = xhr.responseText;
        document.body.appendChild(text);
    }else{
        console.log({
            status: xhr.status,
            text: xhr.statusText,
            state: xhr.readyState
        });
    }
}

xhr.send();
```

Lorem ipsum dolor sit amet consectetur adipisicing elit. Omnis error tempora itaque aperiam quam, vitae laudantium ut culpa iure enim adipisci nostrum, quaerat quas dignissimos quidem perspiciatis quod maxime ratione!

```
    onerror: null
    onload: null
    onloadend: null
    onloadstart: null
    onprogress: null
  ▶ onreadystatechange: ƒ ()
    ontimeout: null
    readyState: 4
    response: "Lorem ipsum dolor sit amet consect
    responseText: "Lorem ipsum dolor sit amet con
    responseType: ""
    responseURL: "http://127.0.0.1:5501/demo/w12/
    responseXML: null
    status: 200
    statusText: "OK"
    timeout: 0
  ▶ upload: XMLHttpRequestUpload {onloadstart: nu
    withCredentials: false
  ▶ [[Prototype]]: XMLHttpRequest
▶ {status: 200, text: 'OK', state: 3}                app.js:13
xhr                                                   app.js:6
 XMLHttpRequest {readyState: 4, timeout: 0, with
▶Credentials: false, upload: XMLHttpRequestUploa
 d, onreadystatechange: ƒ, …}
p                                                     app.js:9
 ▼<p>
    "Lorem ipsum dolor sit amet consectetur
    adipisicing elit. Omnis error tempora itaque
    aperiam quam, vitae laudantium ut culpa iure
    enim adipisci nostrum, quaerat quas
    dignissimos quidem perspiciatis quod maxime
    ratione!"
  </p>
```

fail reading

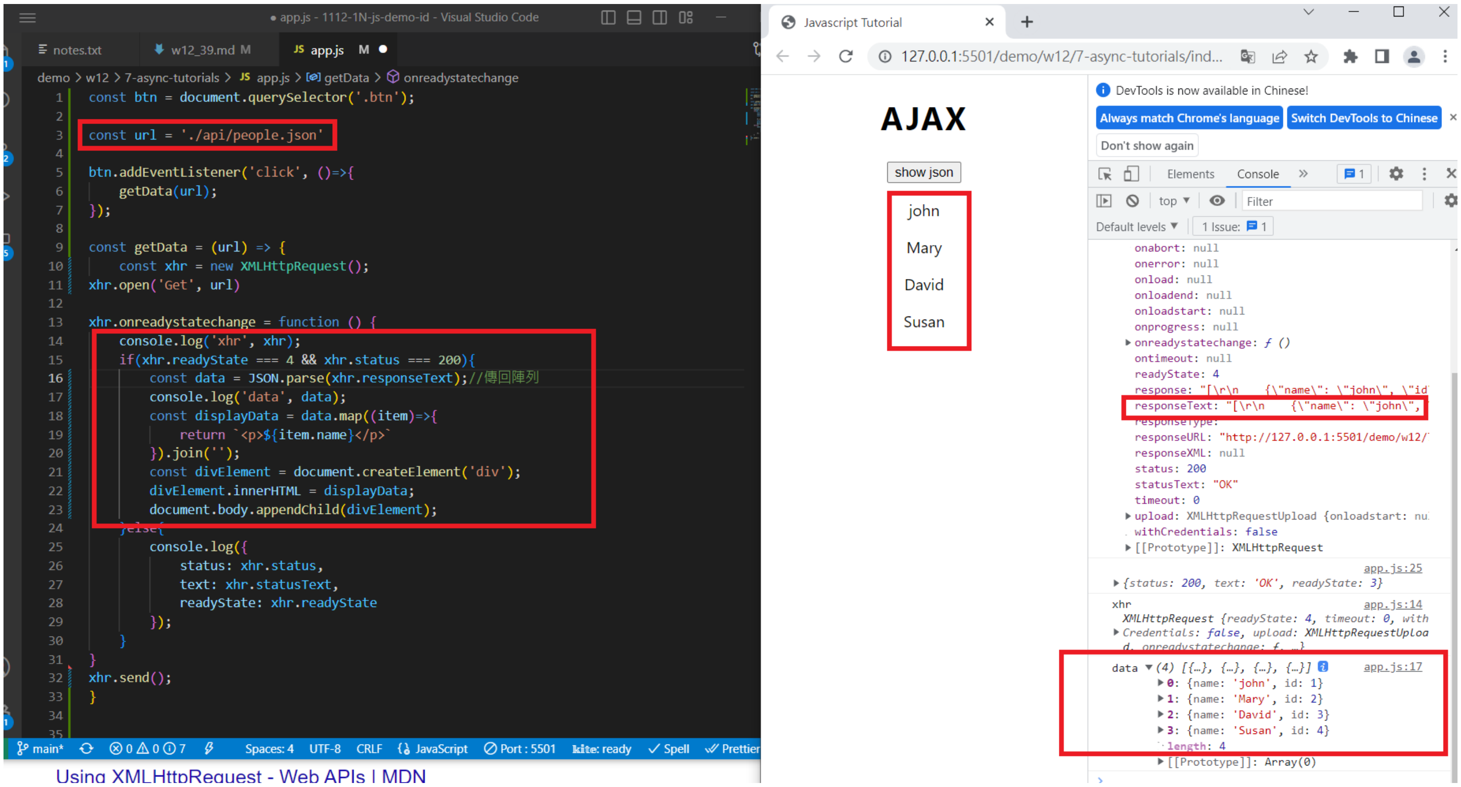

File Edit Selection View Go ···
app.js - 1112-1N-js-demo-id - Visual Studio Code
es.txt
w12_39.md M
people.json U
sample.txt U
app.js U
index.html U
demo > w12 > 7-async-tutorials > app.js > onreadystatechange
main* ⊗ 0 ⚠ 0 ⓘ 26 Spaces: 4 UTF-8 CRLF JavaScript Port : 5501 kite: ready ✓ Spell ✓ Prettier
Javascript Tutorial
127.0.0.1:5501/demo/w12/7-async-tutorials/ind...
AJAX
show json
Always match Chrome's language
Switch DevTools to Chinese
Don't show again
Console
top
Filter
Default levels
1 Issue: 1

```
const xhr = new XMLHttpRequest();

xhr.open('Get', './api/sample2.txt')

xhr.onreadystatechange = function () {
    console.log('xhr', xhr);
    if(xhr.readyState === 4 && xhr.status === 200){
        const text = document.createElement('p');
        console.log('p', text);
        text.textContent = xhr.responseText;
        document.body.appendChild(text);
    }else{
        console.log({
            status: xhr.status,
            text: xhr.statusText,
            readyState: xhr.readyState
        });
    }
}

xhr.send();
```

DevTools is now available in Chinese!

```
▸GET http://127.0.0.1:5501/demo/w12/                  app.js:21
7-async-tutorials/api/sample2.txt 404
(Not Found)
xhr                                                   app.js:6
  XMLHttpRequest {readyState: 2, timeout: 0, withCr
▸ edentials: false, upload: XMLHttpRequestUpload, o
  nreadystatechange: ƒ, …}
                                                      app.js:13
▸{status: 404, text: 'Not Found', readyState: 2}
xhr                                                   app.js:6
  XMLHttpRequest {readyState: 3, timeout: 0, withCr
▸ edentials: false, upload: XMLHttpRequestUpload, o
  nreadystatechange: ƒ, …}
                                                      app.js:13
▸{status: 404, text: 'Not Found', readyState: 3}
xhr                                                   app.js:6
  XMLHttpRequest {readyState: 4, timeout: 0, withCr
▸ edentials: false, upload: XMLHttpRequestUpload, o
  nreadystatechange: ƒ, …}
                                                      app.js:13
▾{status: 404, text: 'Not Found', readyState: 4}
    readyState: 4
    status: 404
    text: "Not Found"
  ▸[[Prototype]]: Object
```

W12-P5: xhr, get people.json, and show names in browser


app.js - 1112-1N-js-demo-id - Visual Studio Code
notes.txt
w12_39.md M
app.js M
demo > w12 > 7-async-tutorials > app.js > getData > onreadystatechange
main* ⊗ 0 ⚠ 0 ⓘ 7 Spaces: 4 UTF-8 CRLF JavaScript Port : 5501 kite: ready ✓ Spell ✓ Prettier
Javascript Tutorial
127.0.0.1:5501/demo/w12/7-async-tutorials/ind...
AJAX
show json
Always match Chrome's language
Switch DevTools to Chinese
Don't show again
Elements
Console
top
Filter
Default levels
1 Issue: 1

```
const btn = document.querySelector('.btn');

const url = './api/people.json'

btn.addEventListener('click', ()=>{
    getData(url);
});

const getData = (url) => {
    const xhr = new XMLHttpRequest();
xhr.open('Get', url)

xhr.onreadystatechange = function () {
    console.log('xhr', xhr);
    if(xhr.readyState === 4 && xhr.status === 200){
        const data = JSON.parse(xhr.responseText);//傳回陣列
        console.log('data', data);
        const displayData = data.map((item)=>{
            return `<p>${item.name}</p>`
        }).join('');
        const divElement = document.createElement('div');
        divElement.innerHTML = displayData;
        document.body.appendChild(divElement);
    }else{
        console.log({
            status: xhr.status,
            text: xhr.statusText,
            readyState: xhr.readyState
        });
    }
}
xhr.send();
}
```

john

Mary

David

Susan

DevTools is now available in Chinese!

```
    onabort: null
    onerror: null
    onload: null
    onloadend: null
    onloadstart: null
    onprogress: null
  ▸ onreadystatechange: ƒ ()
    ontimeout: null
    readyState: 4
    response: "[\r\n    {\"name\": \"john\", \"id
    responseText: "[\r\n    {\"name\": \"john\",
    responseType: 
    responseURL: "http://127.0.0.1:5501/demo/w12/
    responseXML: null
    status: 200
    statusText: "OK"
    timeout: 0
  ▸ upload: XMLHttpRequestUpload {onloadstart: nu
    withCredentials: false
  ▸ [[Prototype]]: XMLHttpRequest
                                                  app.js:25
▸{status: 200, text: 'OK', readyState: 3}
xhr                                               app.js:14
  XMLHttpRequest {readyState: 4, timeout: 0, with
▸ Credentials: false, upload: XMLHttpRequestUploa
  d, onreadystatechange: ƒ, …}
data ▾(4) [{…}, {…}, {…}, {…}]                   app.js:17
        ▸0: {name: 'john', id: 1}
        ▸1: {name: 'Mary', id: 2}
        ▸2: {name: 'David', id: 3}
        ▸3: {name: 'Susan', id: 4}
         length: 4
        ▸[[Prototype]]: Array(0)
```

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