FUNCTION

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1. What is Async Javascript?

CALLBACK

https://codesandbox.io/s/jquery-ajax-requests-testing-yfnih?file=/src/index.js:738-975

Jquery Ajax

```
//const urlBacon = "https://baconipsum.com/api/?type=all-
meat";
        const urlBacon =
"https://jsonplaceholder.typicode.com/todos/1";
        (function(){$.ajax({           method: "GET",
            url: urlBacon,
            dataType: "json"
        })
            .done(function (data) {
                console.log(data);
            })
            .fail(function () {
                alert("no good");
            });
        })()
```

https://api.jquery.com/jquery.ajax/

```
  $.ajax({
            url:
"https://jsonplaceholder.typicode.com/todos/1",
            beforeSend: function (xhr) {
                xhr.overrideMimeType("text/plain;
charset=x-user-defined");
            }
        })
            .done(function (data) {
                if (console && console.log) {
                    console.log("Sample of data:",
data.slice(0, 100));
                }
            });
```

XMLHttpRequest RESTful GET

```
//Get all users
        var url = "http://localhost:8080/api/v1/users";
        //var url =
'https://jsonplaceholder.typicode.com/todos';
        var xhr = new XMLHttpRequest()
        xhr.open('GET', url, true)
        xhr.onload = function () {
            var users = JSON.parse(xhr.responseText);
            if (xhr.readyState == 4 && xhr.status == "200") {
                console.table(users);
            } else {
                console.error(users);
            }
        }
        xhr.send(null);
```

XMLHttpRequest RESTful GET

```
// Get a user
        var url = "http://localhost:8080/api/v1/users";
        var xhr = new XMLHttpRequest()
        xhr.open('GET', url + '/1', true)
        xhr.onload = function () {
            var users = JSON.parse(xhr.responseText);
            if (xhr.readyState == 4 && xhr.status == "200") {
                console.table(users);
            } else {
                console.error(users);
            }
        }
        xhr.send(null);
```

XMLHttpRequest RESTful POST

```
 // // Post a user
        // var url = "http://localhost:8080/api/v1/users";
        //var url = 'https://my-json-
server.typicode.com/typicode/demo/posts';
        var data = {};
        //data.firstname = "John";
        //data.lastname = "Snow";
        var json = JSON.stringify(data);

        var xhr = new XMLHttpRequest();
        xhr.open("POST", url, true);
        xhr.setRequestHeader('Content-type',
'application/json; charset=utf-8');
        xhr.onload = function () {
            var users = JSON.parse(xhr.responseText);
            if (xhr.readyState == 4 && xhr.status == "201") {
                console.table(users);
            } else {
                console.error(users);
            }
        }
        xhr.send(json);
```

XMLHttpRequest

RESTful PUT

```
 // Update a user
        var url = "http://localhost:8080/api/v1/users";

        var data = {};
        data.firstname = "John2";
        data.lastname = "Snow2";
        var json = JSON.stringify(data);

        var xhr = new XMLHttpRequest();
        xhr.open("PUT", url + '/12', true);
        xhr.setRequestHeader('Content-type', 'application/json;
charset=utf-8');
        xhr.onload = function () {
            var users = JSON.parse(xhr.responseText);
            if (xhr.readyState == 4 && xhr.status == "200") {
                console.table(users);
            } else {
                console.error(users);
            }
        }
        xhr.send(json);
```

XMLHttpRequest

RESTful DELETE

```
// Delete a user
      var url = "http://localhost:8080/api/v1/users";
      var xhr = new XMLHttpRequest();
      xhr.open("DELETE", url + '/12', true);
      xhr.onload = function () {
          var users = JSON.parse(xhr.responseText);
          if (xhr.readyState == 4 && xhr.status == "200") {
              console.table(users);
          } else {
              console.error(users);
          }
      }
      xhr.send(null);
```

PROMISE

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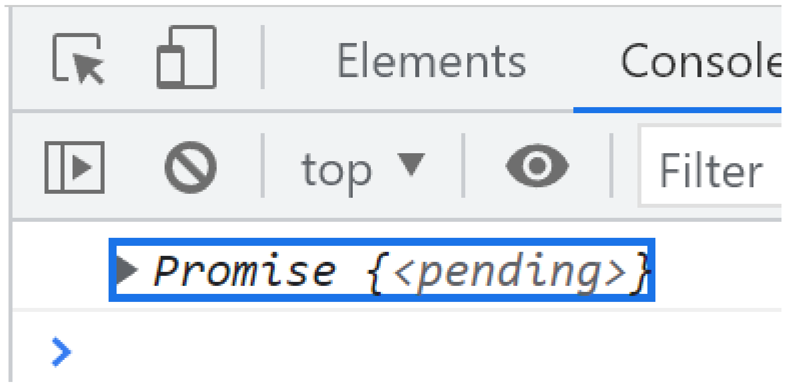
How to create Promise()

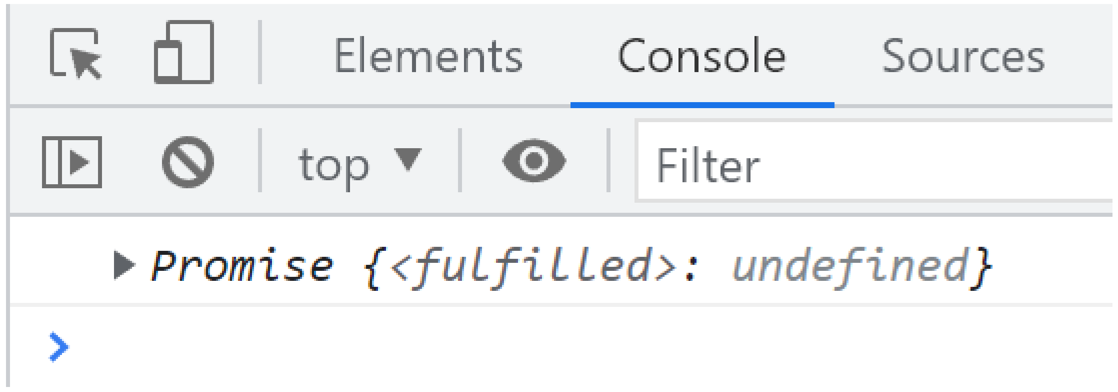
```
var f = function (relsolve, reject) {
            //relsolve();
            //reject();
        }

        var promise = new Promise(f);
```

State of Promise()

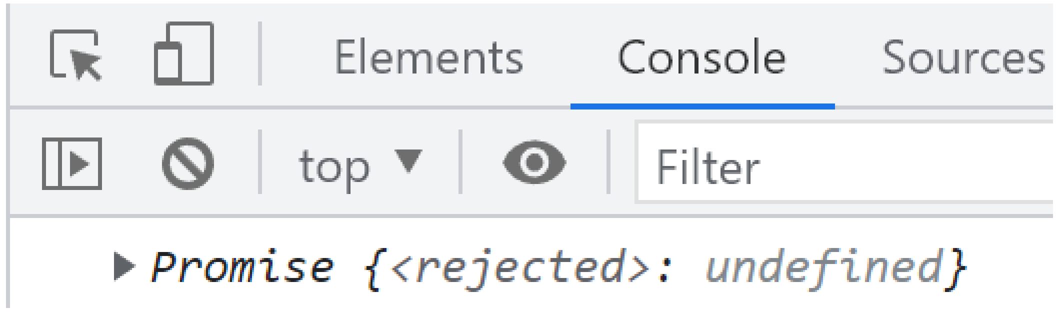
JS



```
▶ Promise {<pending>}
>
```



```
▶ Promise {<fulfilled>: undefined}
>
```



```
▶ Promise {<rejected>: undefined}
```

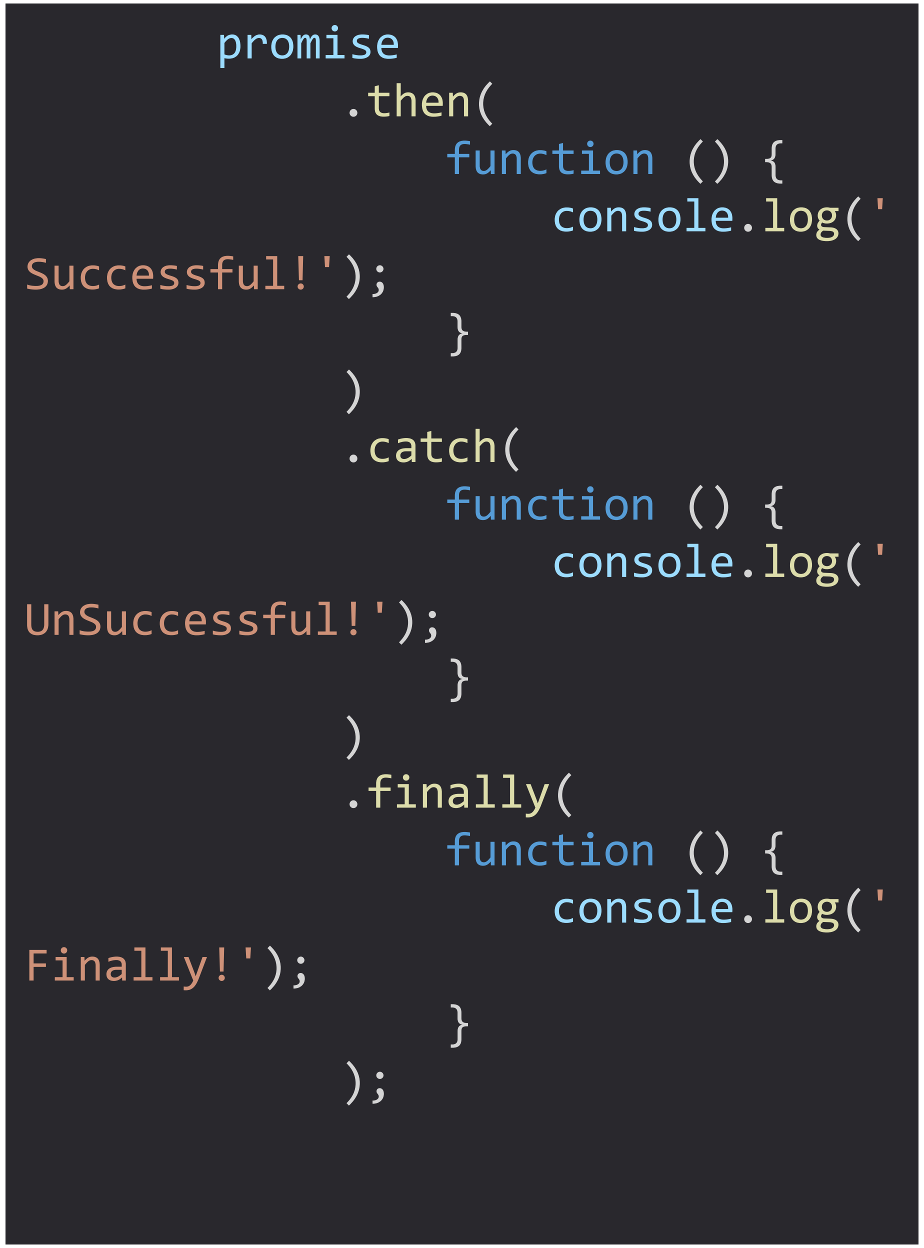
How to create Promise()

```
promise
    .then()
    .catch()
    .finally();
```

How to create Promise()

```
promise
    .then(

    )
    .catch(

    )
    .finally(

    );
```

How to create Promise()



```
       promise
            .then(
                function () {
                    console.log('
Successful!');
                }
            )
            .catch(
                function () {
                    console.log('
UnSuccessful!');
                }
            )
            .finally(
                function () {
                    console.log('
Finally!');
                }
            );
```

JS

How to create Promise()

```
        promise
             .then(
                 function () {
                     console.log('
Successful!');
                 }
             )
             .catch(
                 function () {
                     console.log('
UnSuccessful!');
                 }
             )
             .finally(
                 function () {
                     console.log('
Finally!');
                 }
             );
```

PROMISE CHAIN

```
promise
              .then(
                  function () {
                      console.log('1!');
                  }
              )
              .then(
                  function () {
                      console.log('2!');
                  }
              )
              .then(
                  function () {
                      console.log('3!');
                  }
              )
```

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PROMISE CHAIN

```
promise
            .then(
                function () {
                    console.log(0);
                    return 1;
                }
            )
            .then(
                function (data) {
                    console.log(data);
                    return 2;
                }
            )
            .then(
                function (data) {
                    console.log(data);
                }
            )
```

RETURN PROMISE

```
promise
            .then(
                function () {
                    return new
Promise(function(resolve){
                        setTimeout(resolve,
3000);
                    });
                }
            )
            .then(
                function (data) {
                    console.log(data);
                    return 2;
                }
            )
            .then(
                function (data) {
                    console.log(data);
                }
            )
```

PROMISE METHODS (RESOLVE, REJECT, ALL)

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REAL USING PROMISE

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FETCH

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Get Fetch

```
 fetch('https://jsonplaceholder.typicode.com/todos')
            .then(response=>response.json())
            .then(
                    (data)=>{
                        var htmls = data.map(
                            function(posts){
                                return `<li>
                                    <h2>${posts.id}</h2>
                                    <h2>${posts.title}</h2>
                                    </li>`
                        }
                        );
                        var html = htmls.join();
                        var text =
document.getElementById('info').innerHTML
                            = html;
                    }
                )
            .catch(()=>console.log('Có lỗi!'))
```

Get Fetch

```
fetch('https://jsonplaceholder.typicode.com/posts/1')
              .then((response) => response.json())
              .then((json) => console.log(json));
```

```
fetch('https://jsonplaceholder.typicode.com/posts')
              .then((response) => response.json())
              .then((json) => console.log(json));
```

Creating a resource

```
fetch('https://jsonplaceholder.typicode.com/posts/1', {
          method: 'PUT',
          body: JSON.stringify({
              id: 1,
              title: 'foo',
              body: 'bar',
              userId: 1,
          }),
          headers: {
              'Content-type': 'application/json; charset=UTF-8',
          },
      })
          .then((response) => response.json())
          .then((json) => console.log(json));
```

Updating a resource

```javascript
fetch('https://jsonplaceholder.typicode.com/posts', {
          method: 'POST',
          body: JSON.stringify({
              title: 'foo',
              body: 'bar',
              userId: 1,
          }),
          headers: {
              'Content-type': 'application/json; charset=UTF-8',
          },
      })
          .then((response) => response.json())
          .then((json) => console.log(json));
```

Deleting a resource

```
  fetch('https://jsonplaceholder.typicode.com/posts/1', {
  method: 'DELETE',
});
```

AXIOS

https://github.com/axios/axios

```
<script
src="https://unpkg.com/axios/dist/axios.min.js"></script>
```

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Get Axios

```
axios({
            method: 'get',
            url: 'https://jsonplaceholder.typicode.com/todos/1',

        })
            .then(function (response) {
                console.log(response);
            });
```

Get Axios

```
axios({
           method: 'get',
           url: 'https://jsonplaceholder.typicode.com/todos/1',

       })
           .then(function (response) {
               console.log(response);
           });
```

Get Axios

```
axios({
            method: 'get',
            url: 'https://jsonplaceholder.typicode.com/todos/1',

        })
            .then(function (response) {
                console.log(response);
            });
```

Get Axios

```
axios({
            method: 'get',
            url: 'https://jsonplaceholder.typicode.com/todos/1',

        })
            .then(function (response) {
                console.log(response);
            });
```

ASYNC-AWAIT

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function

```
 <img id="img_1" src="" alt="">
    <img id="img_2" src    alt="">
    <img id="img_3" src="" alt="">
```

```
  function httpGetAsync(Url, callback) {
            var xmlHttp = new XMLHttpRequest();
            xmlHttp.onreadystatechange = function () {
                if (xmlHttp.readyState == XMLHttpRequest.DONE &&
xmlHttp.status == 200)
                    callback(xmlHttp);
            };
            xmlHttp.open('GET', Url, true);
            xmlHttp.send(null);
        }
```

Callback hell

```
httpGetAsync('https://picsum.photos/200/300', (data) => {
           console.log('1',data);
           document.getElementById('img_1').setAttribute('src', data.responseURL);

           httpGetAsync('https://picsum.photos/200/300', (data) => {
               console.log('2',data);
               document.getElementById('img_2').setAttribute('src’,
                     data.responseURL);

               httpGetAsync('https://picsum.photos/200/300', (data) => {
                   console.log('3',data);
                   document.getElementById('img_3').setAttribute('src’,
                     data.responseURL);
               });
           });
       });
```

make promise

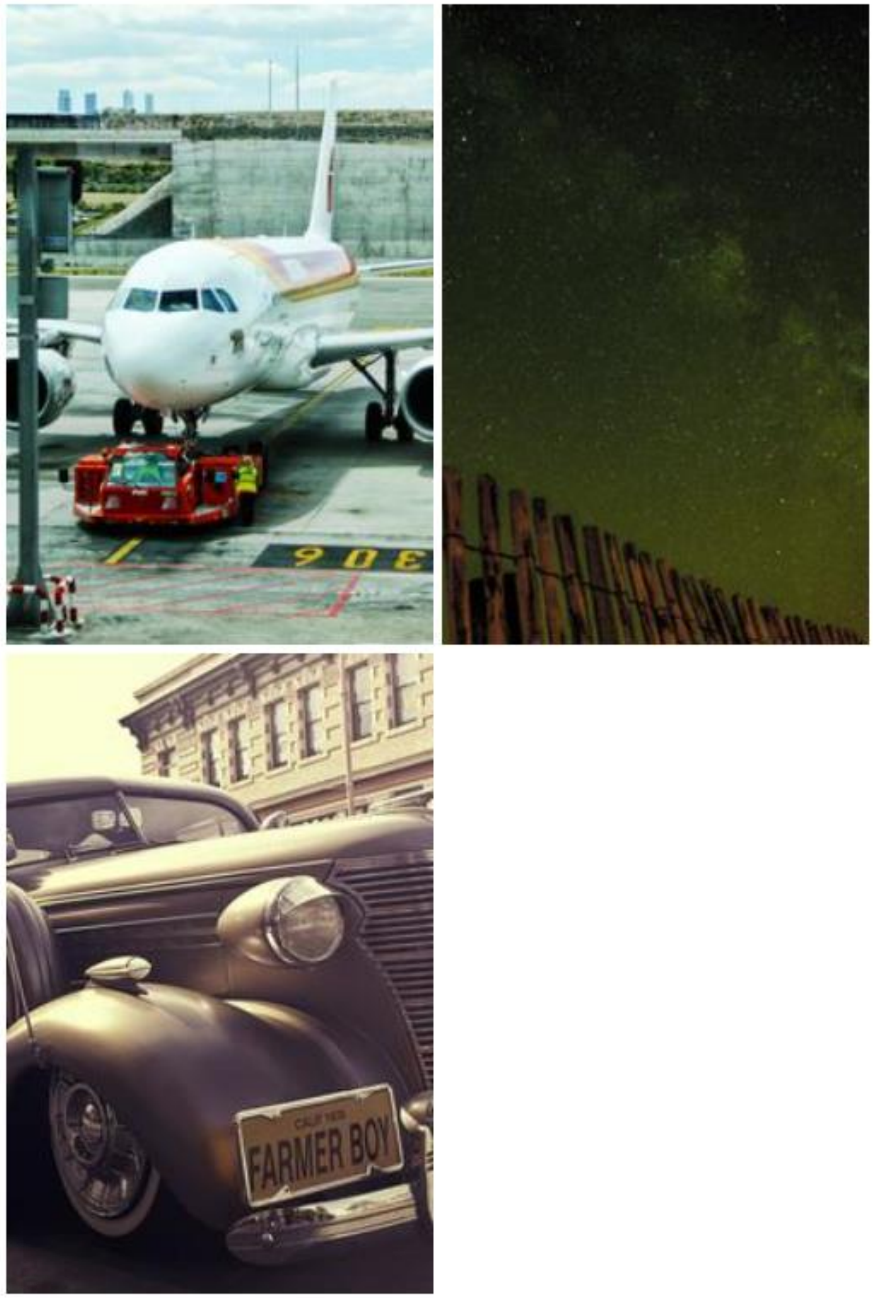
```
const myPromise1 = new Promise(function(relsolve, reject){
            httpGetAsync('https://picsum.photos/200/300', relsolve);
        });
        const myPromise2 = new Promise(function(relsolve, reject){
            httpGetAsync('https://picsum.photos/200/300', relsolve);
        });
        const myPromise3 = new Promise(function(relsolve, reject){
            httpGetAsync('https://picsum.photos/200/300', relsolve);
        });
```

JS

run promise

```
myPromise1
             .then((data)=>{
                 document.getElementById('img_1').setAttribute('src', 
data.responseURL);
                 return myPromise2;})
             .then((data)=>{
                 document.getElementById('img_2').setAttribute('src', 
data.responseURL);
                 return myPromise3;})
             .then(
                 (data)=>{
                 document.getElementById('img_3').setAttribute('src', 
data.responseURL);
                 })
```

result



async-await

```
const curentPromise = new Promise(function(relsolve, reject){
            httpGetAsync('https://picsum.photos/200/300', relsolve);
        });
        const myPromise2 = new Promise(function(relsolve, reject){
            httpGetAsync('https://picsum.photos/200/300', relsolve);
        });
        const myPromise3 = new Promise(function(relsolve, reject){
            httpGetAsync('https://picsum.photos/200/300', relsolve);
        });
```

THANK YOU