@CODE.CLASH

Promises

JAVASCRIPT

JavaScript Promise

Promise is a good way to handle asynchronous operations.

It is used to find out if the asynchronous operation is successfully completed or not.

A promise may have one of three states.

- Pending - process is not complete
- Fulfilled - operation is successful
- Rejected - an error occurs

Create A Promise

To create a promise object, we use the Promise() constructor.

```
let promise = new Promise(function(resolve, reject){
     //do something
});
```

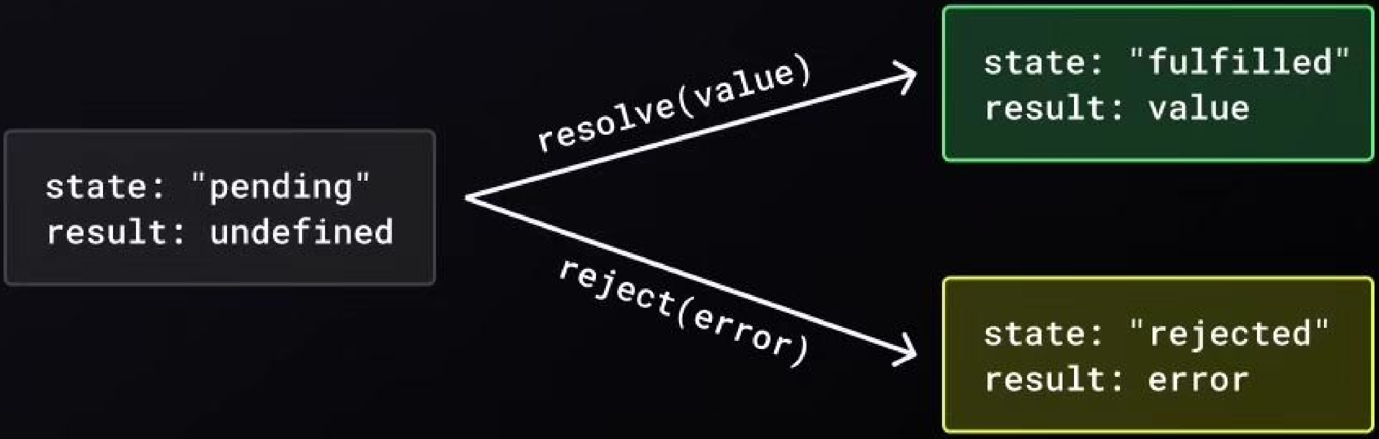
If the promise returns successfully, the resolve() function is called.

And, if an error occurs, the reject() function is called.

Example

Let's suppose that the program below is an asynchronous program.

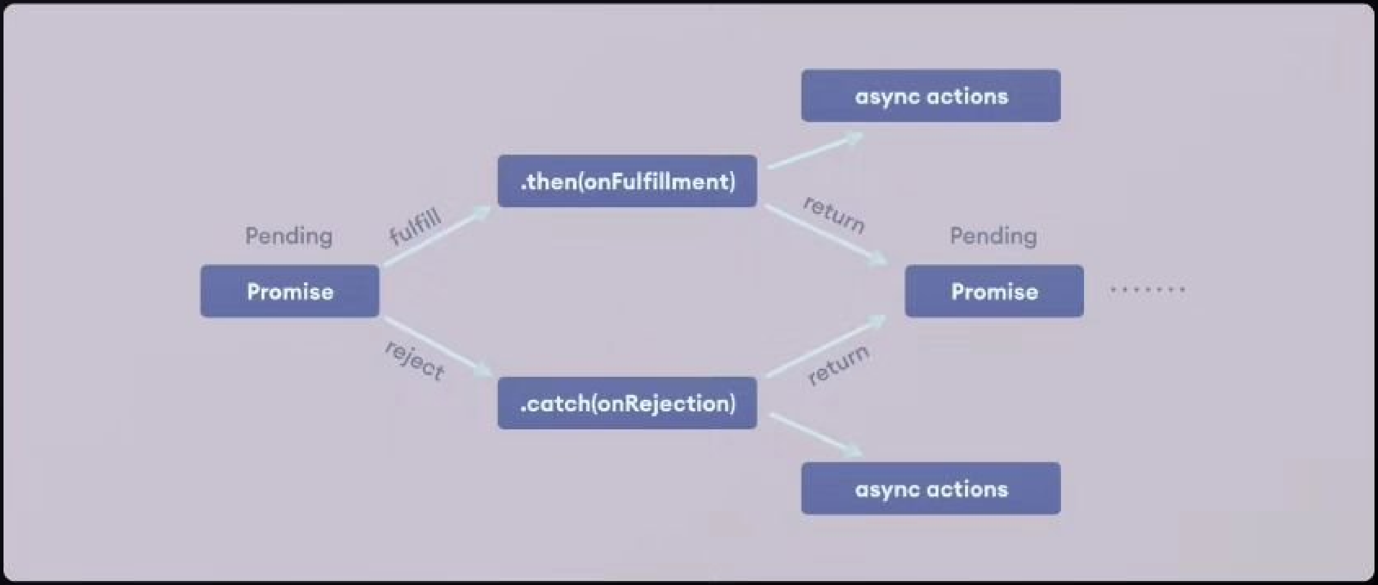
```
const count = true;

let countValue = new Promise(function (resolve, reject) {
    if (count) {
        resolve("There is a count value.");
    } else {
        reject("There is no count value");
    }
});
```



Promise Chaining

Promises are useful when you have to handle more than one asynchronous task, one after another.

You can perform an operation after a promise is resolved using methods then(), catch() and finally().



then() Method

The then() method is used with the callback when the promise is successfully fulfilled or resolved.

You can chain multiple then() methods with the promise.

```
// returns a promise
let countValue = new Promise(function (resolve, reject) {
  resolve("Promise resolved");
});

// executes when promise is resolved successfully
countValue
  .then(function successValue(result) {
    console.log(result);
  })
  .then(function successValue1() {
    console.log("You can call multiple functions this way.");
  });
```

catch() Method

The catch() method is used with the callback when the promise is rejected or if an error occurs.

```
// returns a promise
let countValue = new Promise(function (resolve, reject) {
   reject('Promise rejected');
});

// executes when promise is resolved successfully
countValue
  .then(function successValue(result) {
        console.log(result);
    })
  .catch( // executes if there is an error
    function errorValue(result) {
        console.log(result);
    });

// Promise rejected
```

finally() method

The finally() method gets executed when the promise is either resolved successfully or rejected.

```
// returns a promise
let countValue = new Promise(function (resolve, reject) {
   reject('Promise rejected');
});

// add other blocks of code
countValue.finally(
    function greet() {
        console.log('This code is executed.');
    }
);
```

Promises Vs Callback

Promise

- The syntax is user-friendly and easy to read.
- Error handling is easier to manage.

```
api().then(function(result) {
    return api2() ;
}).then(function(result2) {
    return api3();
}).then(function(result3) {
    // do work
}).catch(function(error) {
    //handle any error that
    //may occur before this point
});
```

Callback

- The syntax is difficult to understand
- Error handling may be hard to manage

```
api(function(result){
    api2(function(result2){
        api3(function(result3){
             // do work
            if(error) {
                // do something
            }
            else {
                // do something
            }
        });
    });
});
```

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