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MERN – ES6 + React

Module: 12 ES6 - II

Outline

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- Understand concepts of methods Array Function map()
- Understand concepts of methods Array Function reduce()
- Understand concepts of methods Array Function: filter()
- Understand concepts of methods Array Function: find() and findIndex()
- Understand concepts Classes in ES6
- Understand concepts of Inheritance in ES6
- Understand concepts Working with Promises

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Array Function map()

Array Function: map()

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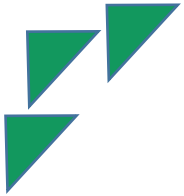
It iterates the array for us and we can pass a callback function to perform some operation on the each array item. The updated values can be returned by the callback function to create a new array.

Syntax:

```
arr.map((item) => {
   //Callback function body.
})
```



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Array Function reduce()

Array Function: reduce()

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Just like map(), reduce() also iterates through the entire array and it accepts a callback function to perform some action on the array element. The difference here is that reduce() passes the result of the callback from one iteration to the next one. This callback result is called accumulator. The accumulator can be pretty much anything (integer, string, object or even an array) and must be instantiated and passed when calling reduce().

Syntax:

```
arr.reduce((acc, item) => {
   //callback function body
}, acc_default_value)
```

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Array Function: filter()

Array Function: filter()

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It iterates through the array to create a new array. You can decide which elements should be added in the new array based on some conditions.

Syntax:

```
arr.filter(item => {
   //Return true/false to add/skip the current item
})
```

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Array Function: find() and findIndex()

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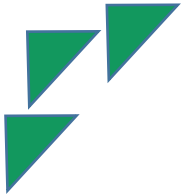
Array Function: find() and findIndex()

ES6 introduced 2 new methods to search for elements inside the array.

- find(): It is used to search for an element in the array that matches some condition. It returns the first element that matchesthe condition.

- findIndex(): It is quite similar to the find() method. The difference is that findIndex() method returns the index of the element instead of the element itself.



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Classes in ES6

Classes in ES6

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To create object factories, you can use the class keyword. Just like you would do in other programming languages like JAVA etc.

Classes in ES6

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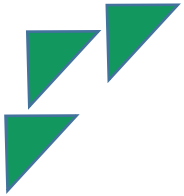
Syntax:

```
class ClassName {
   constructor() {
      // Initialize the properties here
   }
   //Methods outside constructor
   methods1 = () => {
   //Method body
}
}
```

This is just syntax-sugar. Behind the scenes everything still works the same.



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Inheritance in ES6

Inheritance in ES6

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ES6 provides us with a keyword called extends to inherit classes.

Syntax:

```
class ChildClass {
   // Class body
}
class ChildClass extends ParentClass {
   // Class body
}
```

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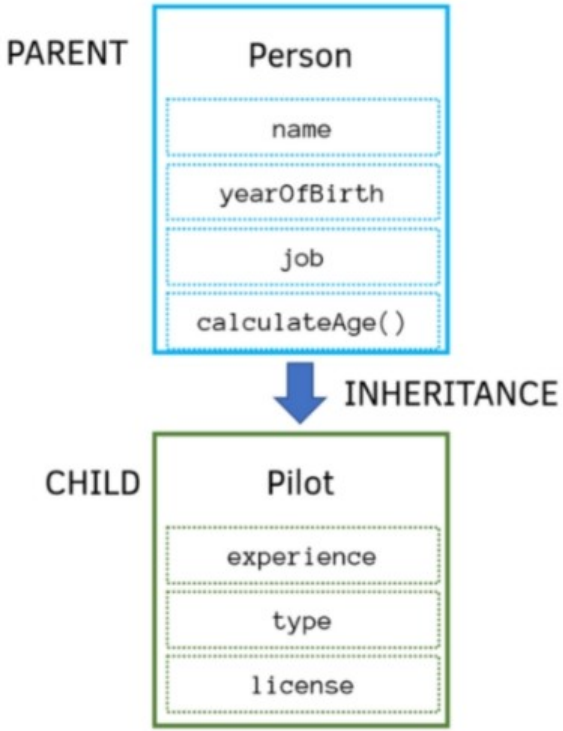

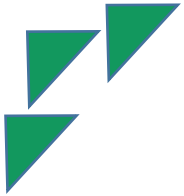

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Working with Promises

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How to create Promises?

Syntax:

```
const mPromise = new Promise((resolve, reject) => {
   // Promise body
   //Call resolve() when the operation is complete.
   //Call reject() when the operation is failed.
})
```

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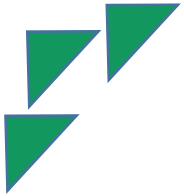
"then()" and "catch()" Methods

then() method is called when the resolve() is executed. It receives data passed in the resolve() method as arguments.

catch() method is called when the reject() method is executed. It receives the data passed in the reject() method as arguments.



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Callbacks and Promises

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Callbacks and Async Operations

In JavaScript the code is executed line-by-line in a sequence so when we run a parallel operation or asynchronous operation like fetching data from backend, JavaScript doesn't waits for the response it simply executes the next line of code. We give the asynchronous operation a function to call when it is completed. This function is called a Callback Function.

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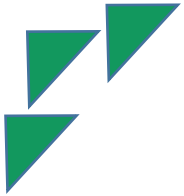
Introduction to Promises



Introduction to Promises

A promise is used to handle the asynchronous result of an operation. It defers the execution of a code block until an asynchronous request is completed. This way, other operations can keep running without interruption.

A promise has 3 states:

- Pending: It means the operation is going on.
- Fulfilled: It means the operation was completed.
- Rejected: It means the operation did not complete and an error can be thrown.

Summary

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