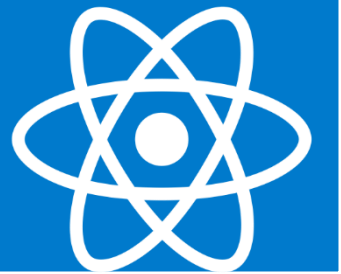
React JS

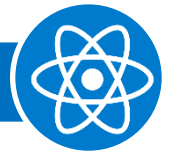
#React Notes

Map(List Key)



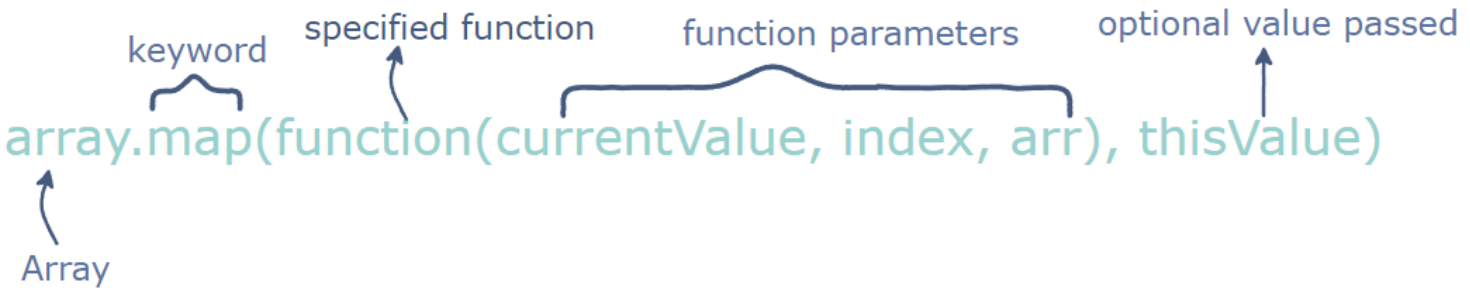
Map()

- Javascript map() creates a new array, which contains the results obtained from iterating over the elements of the specified array and calling the provided function once for each element in order.
- map() only works on arrays. It does not execute a function for an empty array.



Syntax

- **array**: the array on which the specified function is called.
- **map**: the method called for the array with the required parameters.
- **function(currentValue, index, arr):** the function with its parameters which is required to run for each element of the array.
  - **currentValue**: the value of the current element.
  - **index**: the index of the current element being processed.
  - **arr**: the array object on which map() is called.
- **thisValue**: value to be used as the function's this value when executing it. "undefined" will be passed if this value is not provided.



arr.map(function(element, index, array){ }, this);

Example

demo.js > ...

```
1   //creating an array
2   var my_array = [1, 3, 5, 2, 4];
3
4   //map calls a function which has "item" passed as parameter
5   //map will pass each element of my_array as "item" in this function
6   result = my_array.map(function(item) {
7     return item;
8   });
9
10  //prints new list
11  console.log(result);
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
D:\lecture\jsdemo>node demo.js
[ 1, 3, 5, 2, 4 ]
```

```
//creating an array
var my_array = [1, 3, 5, 2, 4];

//map calls a function which has "item" passed as parameter
//map will pass each element of my_array as "item" in this function
result = my_array.map(function(item) {
  return item;
});

//prints new list
console.log(result);
```

Array Value Print Using Index & For Loop

```
JS demo.js > ...
1   let arr = [3,4,5,6]
2
3   console.log(arr[0]);
4   console.log(arr[1]);
5   console.log(arr[2]);
6   console.log(arr[3]);
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
Microsoft Windows [Version 10.0.22000.593]
(c) Microsoft Corporation. All rights reserved.

D:\lecture\es6demo>node demo.js
3
4
5
6
```

```
JS demo.js > ...
1   let arr = [3,4,5,6]
2
3   for(var i = 0; i < arr.length; i++){
4       console.log(arr[i])
5   }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
D:\lecture\es6demo>node demo.js
3
4
5
6
```

Loop Vs Map

- Iterate over an array using for loop | Iterate over an array using map() method

demo.js > ...

```
1   // Iterate over an array using for loop
2   let arr = [3, 4, 5, 6];
3
4   for (let i = 0; i < arr.length; i++){
5     arr[i] = arr[i] * 3;
6   }
7
8   console.log(arr); // [9, 12, 15, 18]
9
```

demo.js > ...

```
1   //Iterate over an array using map() method
2   let arr1 = [3, 4, 5, 6];
3
4   let modifiedArr = arr1.map(function(element){
5       return element *3;
6   });
7
8   console.log(modifiedArr); // [9, 12, 15, 18]
```

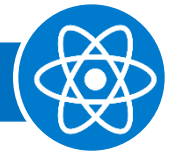
Example 2

demo.js > ...

```
1   //creating an array
2   var my_array = [1, 3, 5, 2, 4];
3
4   result = my_array.map(function(item) {
5     return item*2;
6   });
7
8   //prints new list containing the doubled values
9   console.log(result);
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
D:\lecture\jsdemo>node demo.js
[ 2, 6, 10, 4, 8 ]
```



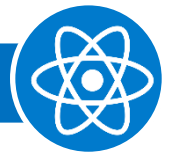
Print Item(Value) Index Array

demo.js

```
1   var my_array = [1,3,5,2,4];
2
3   my_array.map(function(item,index,arr) {
4     console.log("item: " + item + " at index: " + index + " in the array: " + arr);
5   });
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
D:\lecture\jsdemo>node demo.js
item: 1 at index: 0 in the array: 1,3,5,2,4
item: 3 at index: 1 in the array: 1,3,5,2,4
item: 5 at index: 2 in the array: 1,3,5,2,4
item: 2 at index: 3 in the array: 1,3,5,2,4
item: 4 at index: 4 in the array: 1,3,5,2,4
```



demo1.js

```
var my_array = [10,20,30,40,50];

my_array.map(function(value,index,arr){
    console.log( "Index : " + index   + "Value  :" + value  + " Array :" + arr );
});

for(var i = 0; i < my_array.length; i++) {
    console.log("Index : "+ i+ "Value : " +my_array[i] + " Array : " + my_array);
}
```

Print Value Index and Array

demo.js > ...

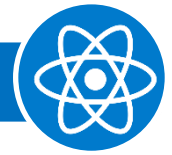
```
1   let arr = [2, 3, 5, 7]
2
3   arr.map(function(element, index, array){
4       console.log("Element is " + element);
5       console.log("Index is " + index);
6       console.log(array);
7       //return element;
8   });
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
D:\lecture\jsdemo>node demo.js
Element is 2
Index is 0
[ 2, 3, 5, 7 ]
Element is 3
Index is 1
[ 2, 3, 5, 7 ]
Element is 5
Index is 2
[ 2, 3, 5, 7 ]
Element is 7
Index is 3
[ 2, 3, 5, 7 ]
```

```
let arr = [2, 3, 5, 7]

arr.map(function(element, index, array){
   console.log("Element is " + element);
   console.log("Index is " + index);
   console.log(array);
   //return element;
});
```



String Array

demo.js > ...

```
1   let fruits = ["apple", "cherry", "pear"]
2
3   fruits.map((fruit, index) => {
4     console.log(index, fruit)
5   })
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
D:\lecture\jsdemo>node demo.js
0 apple
1 cherry
2 pear
```

map() over an array of objects

- Array Inside Javascript Object (Key Value)

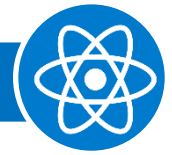
demo.js > ...

```
1   let users = [
2       {firstName : "Akash", lastName: "Padhiyar"},
3       {firstName : "Aarav", lastName: "Patel"},
4       {firstName : "Jenika", lastName: "Jain"}
5     ];
6
7     let userFullnames = users.map(function(element){
8         return `${element.firstName} ${element.lastName}`;
9     })
10
11    console.log(userFullnames); [ 'Akash Padhiyar', 'Aarav Patel', 'Jenika Jain' ]
```

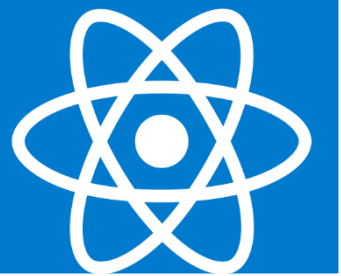

```
let users = [
   {firstName : "Akash", lastName: "Padhiyar"},
   {firstName : "Aarav", lastName: "Patel"},
   {firstName : "Jenika", lastName: "Jain"}
 ];

 let userFullnames = users.map(function(element){
    return `${element.firstName} ${element.lastName}`;
 })

 console.log(userFullnames); [ 'Akash Padhiyar', 'Aarav Patel', 'Jenika Jain' ]
```

React Map

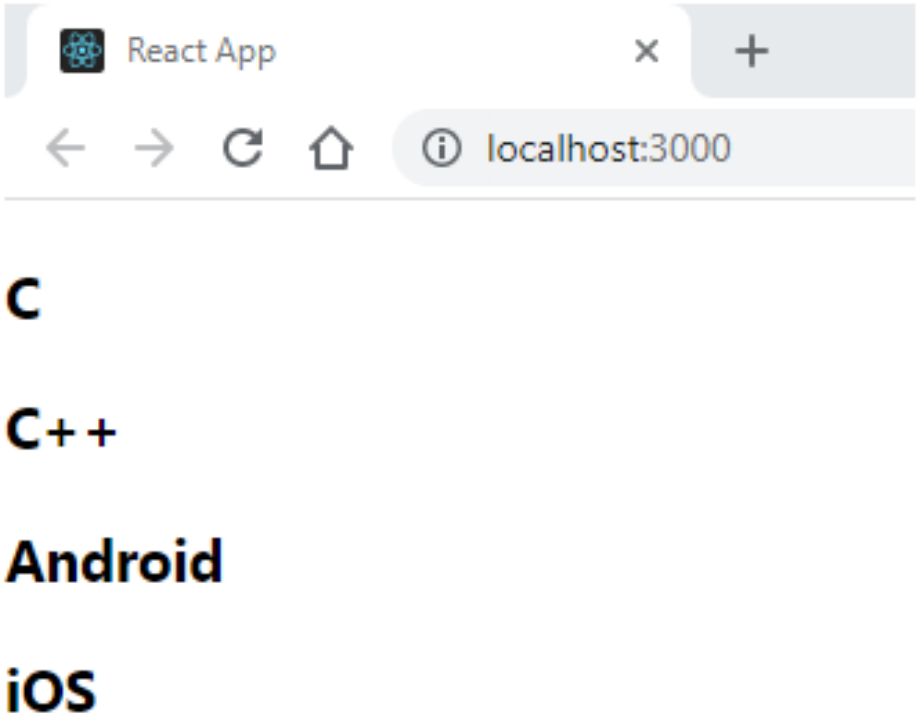


Array Example

App.js M

src > App.js > App > render

```
1  import React from 'react';
2
3  class App extends React.Component {
4    render() {
5
6      const Programming = ["C","C++","Android","iOS"]
7
8      return (
9        <div>
10         <h3>{Programming[0]}</h3>
11         <h3>{Programming[1]}</h3>
12         <h3>{Programming[2]}</h3>
13         <h3>{Programming[3]}</h3>
14       </div>
15     )
16   }
17 }
18 export default App;
19
```

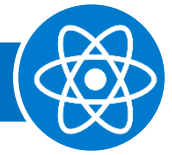


Function

App.js M

src > App.js > ...

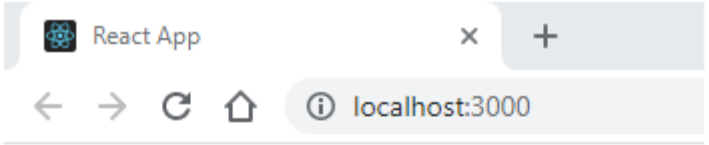
```
1   function App() {
2       const Programming = ["C","C++","Android","IOS","React"]
3       return (
4           <>
5           Hello App
6           <h3>{Programming[0]}</h3>
7           <h3>{Programming[1]}</h3>
8           <h3>{Programming[2]}</h3>
9           <h3>{Programming[3]}</h3>
10          <h3>{Programming[4]}</h3>
11          </>
12        );
13  }
14  export default App;
15
```



App.js M

src > App.js > App

```
1  import React from 'react';
2  class App extends React.Component {
3    render() {
4      const Programming = ["C","C++","Android","iOS"]
5      return (
6        <div>
7          {Programming.map(name => <h2>{name}</h2>)}
8        </div>
9      )
10   }
11 }
12 export default App;
13
```



C

C++

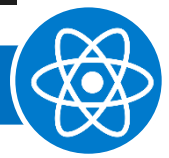
Android

iOS

App.js M

src > App.js > App

```
1   function App() {
2       const Programming = ["C","C++","Android","IOS","React"]
3       return (
4           <>
5           Hello App
6           {Programming.map(name1=><h2>{name1}</h2>)}
7           </>
8         );
9   }
10  export default App;
```

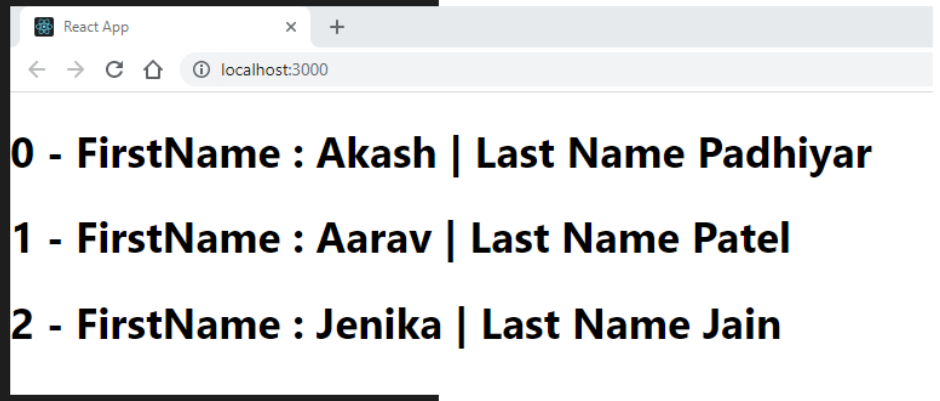


Example 1

App.js M

src > App.js > App > render > myarray.map() callback

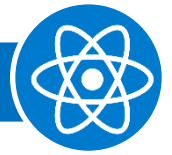
```
1  import React from 'react';
2
3  class App extends React.Component {
4    render() {
5      let myarray = [
6        {firstName : "Akash", lastName: "Padhiyar"},
7        {firstName : "Aarav", lastName: "Patel"},
8        {firstName : "Jenika", lastName: "Jain"}
9      ];
10       return (
11         <div>
12           {myarray.map((mydata,index)=>{
13             return  <div>
14               <h1>{index} - FirstName : {mydata.firstName} | Last Name {mydata.lastName}</h1>
15             </div>
16           })}
17         </div>
18       )
19   }
20 }
21 export default App;
```



App.js M

src > App.js > ...

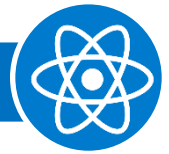
```
function App() {
    let myarray = [
        {firstName : "Akash", lastName: "Padhiyar"},
        {firstName : "Aarav", lastName: "Patel"},
        {firstName : "Jenika", lastName: "Jain"}
      ];
    return (
        <>
        Hello App
        {myarray.map((mydata,index)=>{
                return  <div>
                  <h1>{index} - FirstName : {mydata.firstName} | Last Name {mydata.lastName}</h1>
                </div>
            })}
        </>
      );
}
export default App;
```



Example

```
import React from 'react';

class App extends React.Component {
  render() {
    let myarray = [
      {firstName : "Akash", lastName: "Padhiyar"},
      {firstName : "Aarav", lastName: "Patel"},
      {firstName : "Jenika", lastName: "Jain"}
    ];
      return (
        <div>
           {myarray.map((mydata,index)=>{
               return  <div>
                 <h1>{index} - FirstName : {mydata.firstName} | Last Name {mydata.lastName}</h1>
                </div>
            })}
        </div>
      )
  }
}
export default App;
```

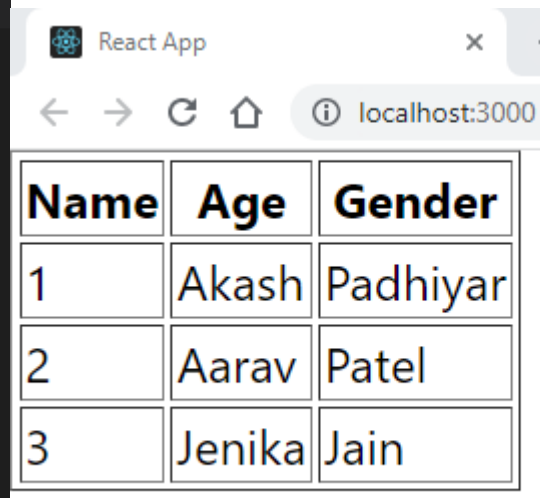


Table

App.js

src > App.js > App > render

```
1  import React from 'react';
2  class App extends React.Component {
3    render() {
4      let myarray = [
5        {firstName : "Akash", lastName: "Padhiyar"},
6        {firstName : "Aarav", lastName: "Patel"},
7        {firstName : "Jenika", lastName: "Jain"}
8      ];
9        return (
10         <div>
11         <table border={1}>
12           <tr>
13             <th>Name</th>
14             <th>Age</th>
15             <th>Gender</th>
16           </tr>
17               {myarray.map((mydata,index)=>{
18                 return (
19                   <tr key={index}>
20                     <td>{index+1}</td>
21                     <td>{mydata.firstName}</td>
22                     <td>{mydata.lastName}</td>
23                   </tr>
24                 )
25               })}
26           </table>
27         </div>
28       )
29   }
30 }
31 export default App;
```



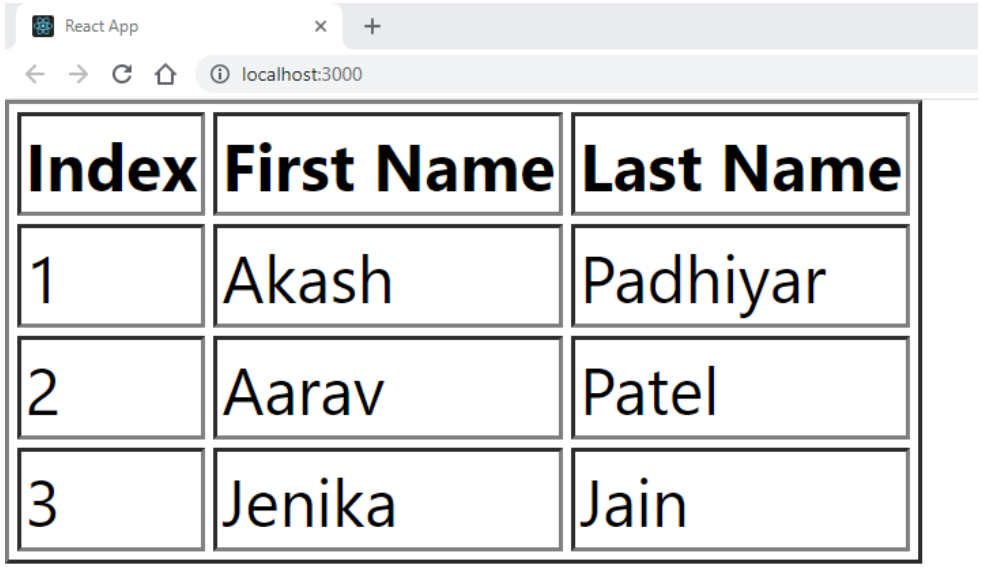

```
import React from 'react';
class App extends React.Component {
 render() {
  let myarray = [
   {firstName : "Akash", lastName: "Padhiyar"},
   {firstName : "Aarav", lastName: "Patel"},
   {firstName : "Jenika", lastName: "Jain"}
  ];
   return (
    <div>
    <table border={1}>
     <tr>
      <th>Name</th>
      <th>Age</th>
      <th>Gender</th>
     </tr>
       {myarray.map((mydata,index)=>{
        return (
         <tr key={index}>
          <td>{index+1}</td>
          <td>{mydata.firstName}</td>
          <td>{mydata.lastName}</td>
         </tr>
        )
       })}
     </table>
    </div>
   )
 }
}
export default App;
```

Function Component

App.js M

src > App.js > App > myarray > lastName

```
1  function App() {
2      let myarray = [
3          { firstName: "Akash", lastName: "Padhiyar"},
4          { firstName: "Aarav", lastName: "Patel" },
5          { firstName: "Jenika", lastName: "Jain" }
6      ];
7      return (
8          <>
9           <table border={1}>
10             <tr>
11                 <th>Index</th>
12                 <th>First Name</th>
13                 <th>Last Name</th>
14             </tr>
15             {myarray.map((mydata, index) => {
16                 return <tr>
17                     <td>{index+1} </td>
18                     <td> {mydata.firstName}</td>
19                     <td> {mydata.lastName}</td>
20                 </tr>
21             })}
22         </table>
23         </>
24     );
25 }
26 export default App;
```



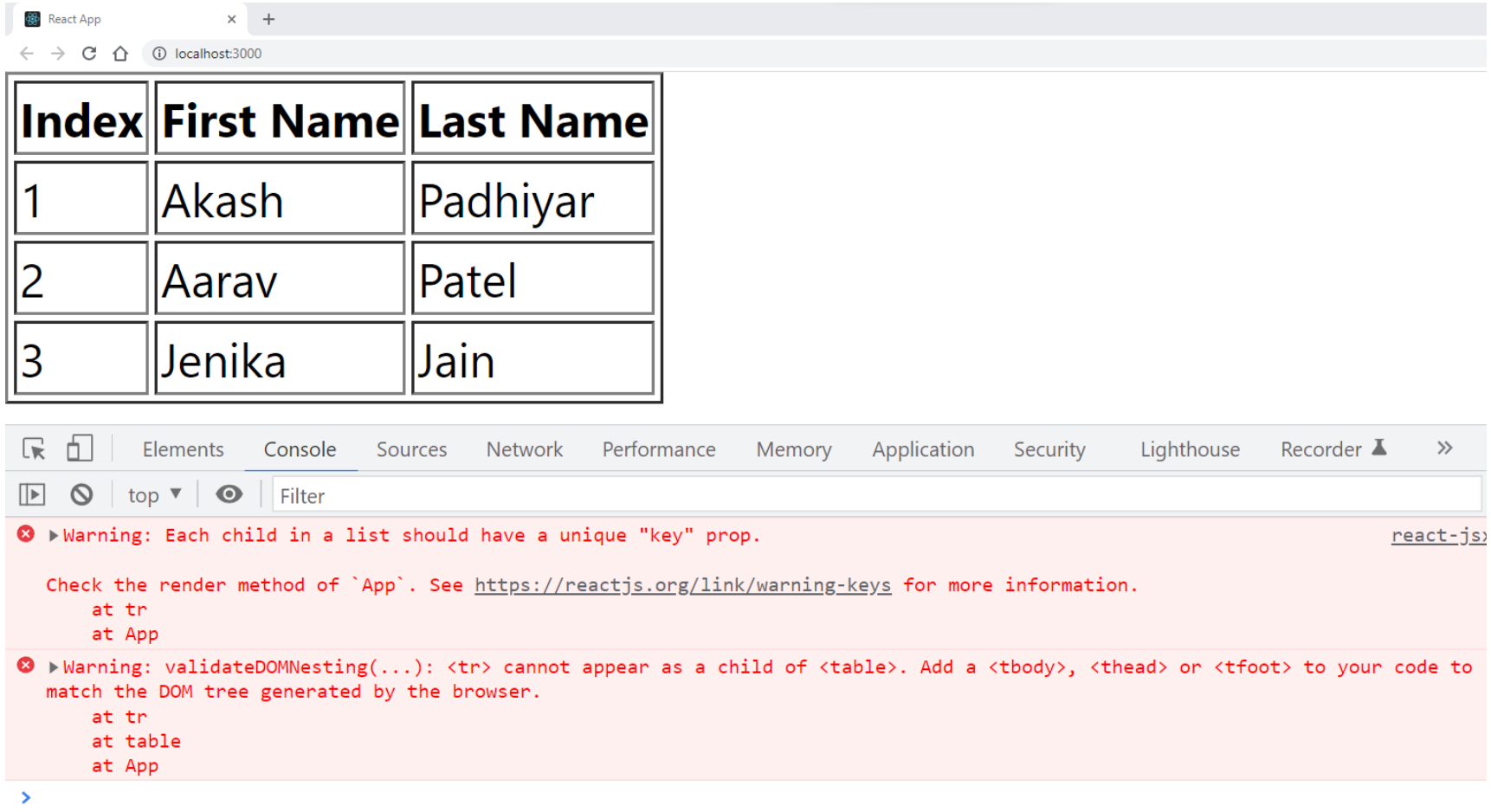
Index	First Name	Last Name
1	Akash	Padhiyar
2	Aarav	Patel
3	Jenika	Jain

Render Items with Key

- if you open the developer console, you will notice a Warning saying “Warning: Each child in a list should have a unique “key” prop.”
- To keep track while maintaining the state, each item rendered item should have the key prop with a unique identifier.
- we can add the index argument inside the map() function as shown below:

```
<tr key={index}>
```

Need Key and HTML 5 Based Tables



Html 5 Based Table with Key

App.js M

src > App.js > default

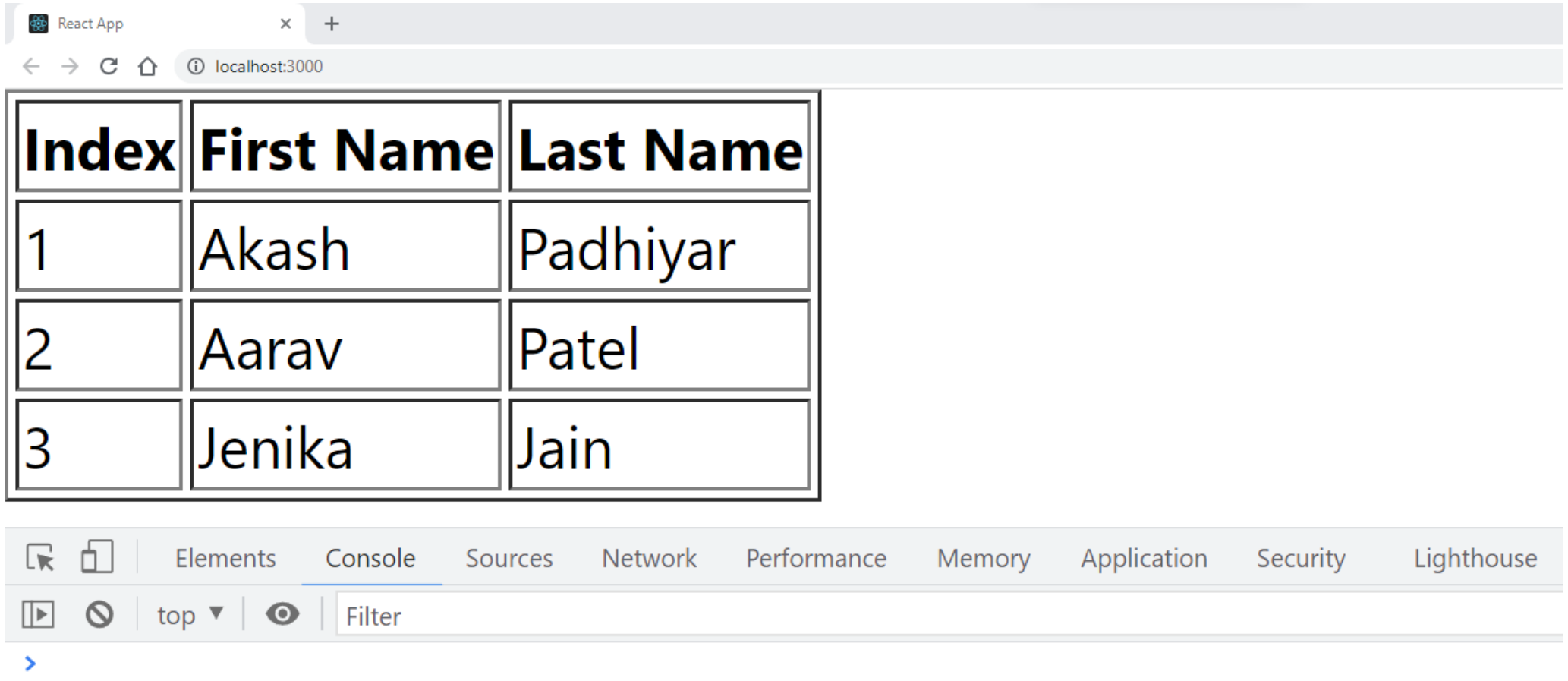
```
function App() {
    let myarray = [
        { firstName: "Akash", lastName: "Padhiyar"},
        { firstName: "Aarav", lastName: "Patel" },
        { firstName: "Jenika", lastName: "Jain" }
    ];
    return (
        <>
        <table border={1}>

            <thead>
                <tr>
                <th>Index</th>
                <th>First Name</th>
                <th>Last Name</th>
            </tr>
            </thead>
            <tbody>
            {myarray.map((mydata, index) => {
                return <tr key={index}>
                    <td >{index+1} </td>
                    <td> {mydata.firstName}</td>
                    <td> {mydata.lastName}</td>
                </tr>
            })}
            </tbody>
        </table>
        </>
    );
}
export default App;
```

```
function App() {
        let myarray = [
                { firstName: "Akash", lastName: "Padhiyar"},
                { firstName: "Aarav", lastName: "Patel" },
                { firstName: "Jenika", lastName: "Jain" }
        ];
        return (
                <>
                 <table border={1}>

                        <thead>
                                <tr>
                                <th>Index</th>
                                <th>First Name</th>
                                <th>Last Name</th>
                        </tr>
                        </thead>
                        <tbody>
                        {myarray.map((mydata, index) => {
                                return <tr key={index}>
                                        <td >{index+1} </td>
                                        <td> {mydata.firstName}</td>
                                        <td> {mydata.lastName}</td>
                                </tr>
                        })}
                        </tbody>
                </table>
                </>
        );
}
export default App;
```

Yupiee ☺

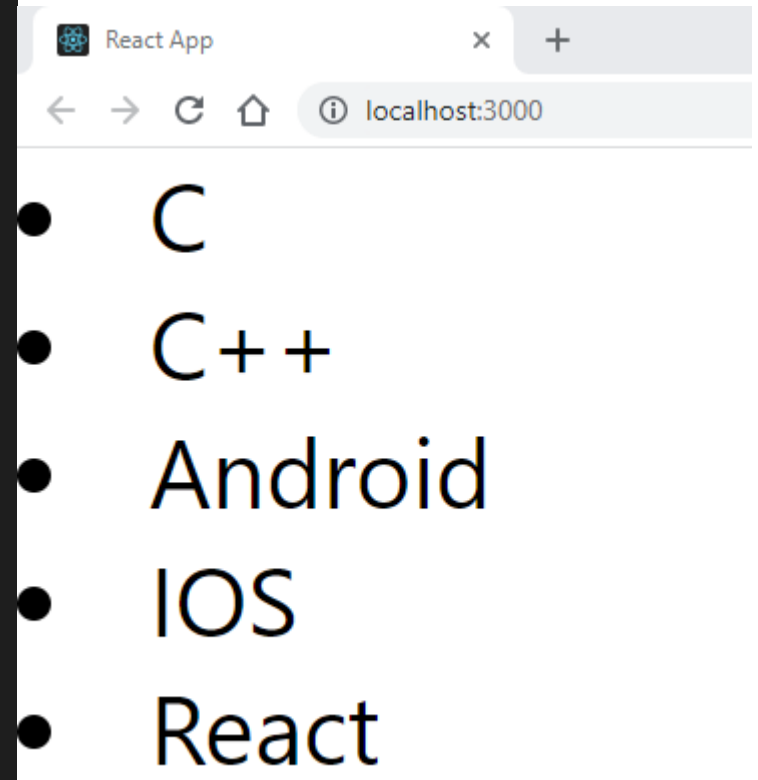

React App
localhost:3000
Index
First Name
Last Name
1
Akash
Padhiyar
2
Aarav
Patel
3
Jenika
Jain
Elements
Console
Sources
Network
Performance
Memory
Application
Security
Lighthouse
top
Filter

Condition Render Array

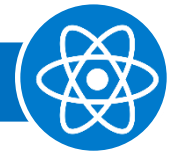
App.js M

src > App.js > ...

```
1  function App() {
2      const Programming = ["C", "C++", "Android", "IOS", "React"]
3      let msg;
4      if (Programming.length) {
5          msg = Programming.map(function (v, i) {
6              return <li key={i}>{v}</li>;
7          });
8      } else {
9          msg = "No Records Found";
10     }
11     return (
12         <>
13             {msg}
14         </>
15     );
16 }
17 export default App;
```



```
function App() {
	const Programming = ["C", "C++", "Android", "IOS",
"React"]
	let msg;
	if (Programming.length) {
		msg = Programming.map(function (v, i) {
			return <li key={i}>{v}</li>;
		});
	} else {
		msg = "No Records Found";
	}
	return (
		<>
			{msg}
		</>
	);
}
export default App;
```

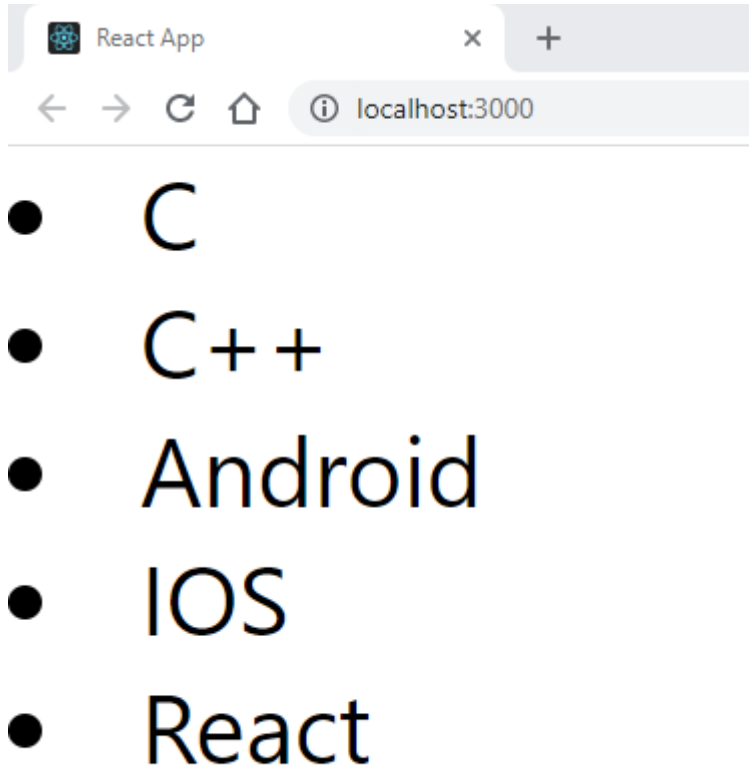


Ternary Expressions (?:) inside the JSX

App.js M

src > App.js > ...

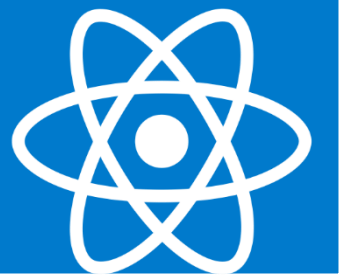
```
1  function App() {
2      const Programming = ["C", "C++", "Android", "IOS", "React"]
3      return (
4          <>
5              {
6              Programming.length ?
7              (Programming.map(function (v, i) {
8                  return <li key={i}>{v}</li>;
9              }) )
10             :"No Records Found"
11             }
12         </>
13     );
14 }
15 export default App;
16
```



Code

```
function App() {
      const Programming = ["C", "C++", "Android", "IOS",
"React"]
      return (
            <>
                  {
                  Programming.length ?
                  (Programming.map(function (v, i) {
                        return <li key={i}>{v}</li>;
                  }) )
                  :"No Records Found"
                  }
            </>
      );
}
export default App;
```

Example



TODO Using Array

App.js M

src > App.js > App > constructor

```
1  import React from 'react';
2  class App extends React.Component {
3    constructor(props) {
4      super(props);
5      this.state = {
6        mytext: '',
7        myarray: []
8      }
9    }
10
11   changeUserInput(input) {
12     this.setState({
13       mytext: input
14     });
15   }
16
17   addtoList(input) {
18     let ListArray = this.state.myarray;
19     ListArray.push(input);
20     this.setState({
21       myarray: ListArray,
22       mytext: ''
23     })
24   }
25
```

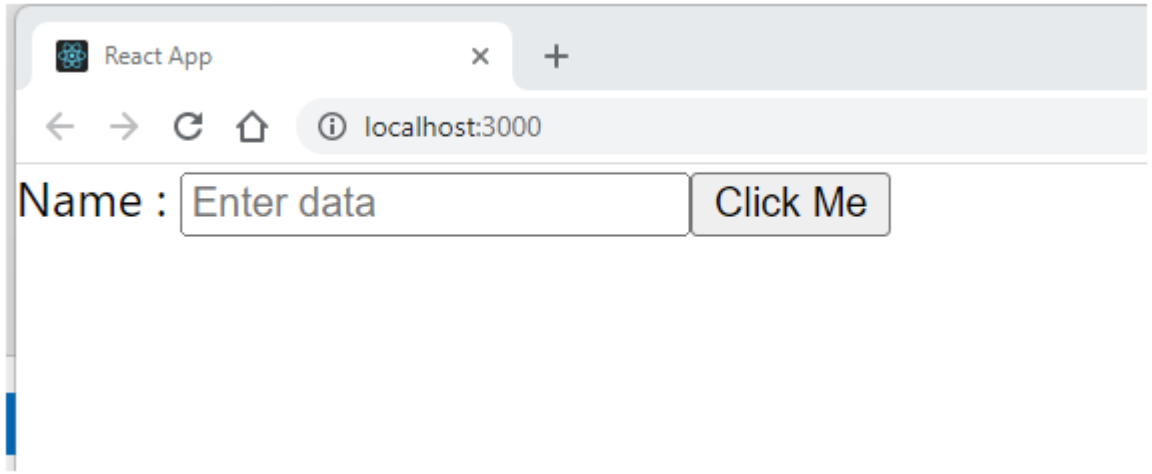
App.js M

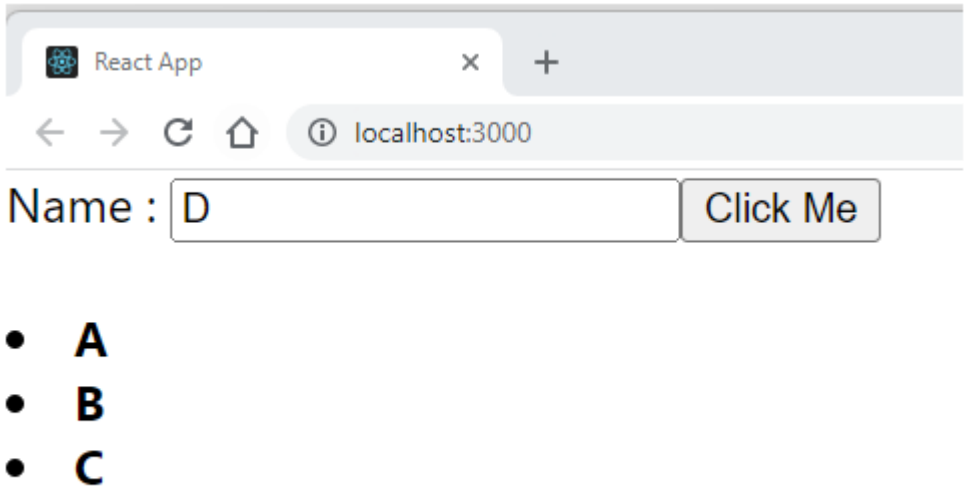
src > App.js > App > constructor

```
26   render() {
27     return (
28       <div>
29         Name : <input type="text" placeholder='Enter data' name="txtname" value={this.state.mytext}
30                  onChange={(e) => this.changeUserInput(e.target.value)} />
31         <button onClick={() => this.addtoList(this.state.mytext)}>Click Me</button>
32
33         <h4>{this.state.myarray.map((val) => <li>{val}</li>)}</h4>
34
35       </div>
36     )
37   }
38 }
39 export default App;
40
```

TODO Using Array

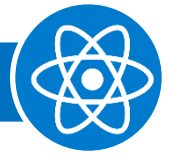
- Store Textbox Value in Array and Print in LI.





Task

- Perform Edit and Delete Operation
- Store Same Details in LocalStorage
- Take Name,Mobileno,Email and Password and Print Same Data in Screen.(Multiple) CRUD Operation



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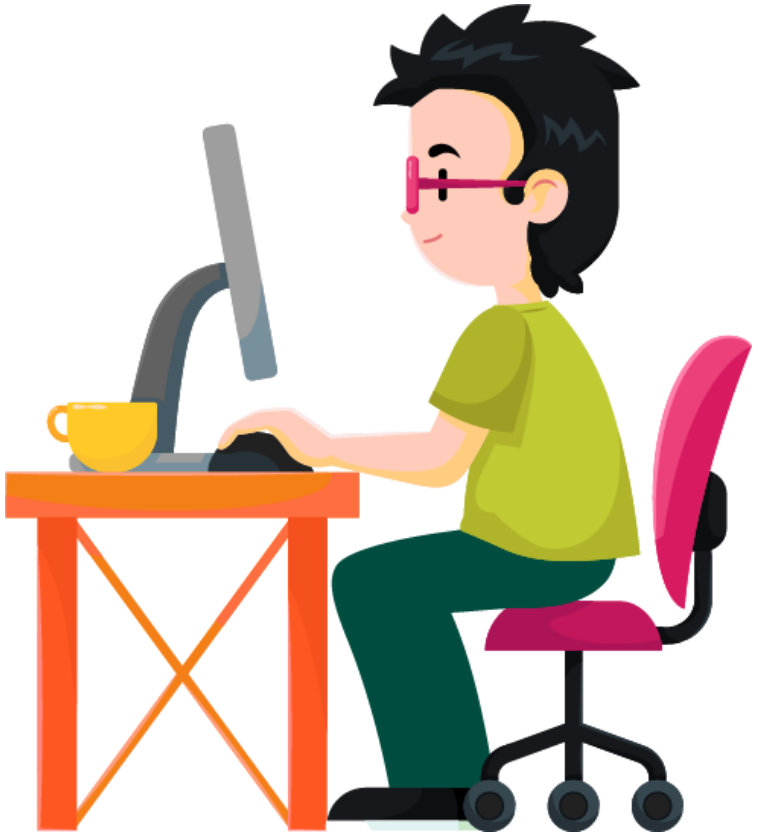

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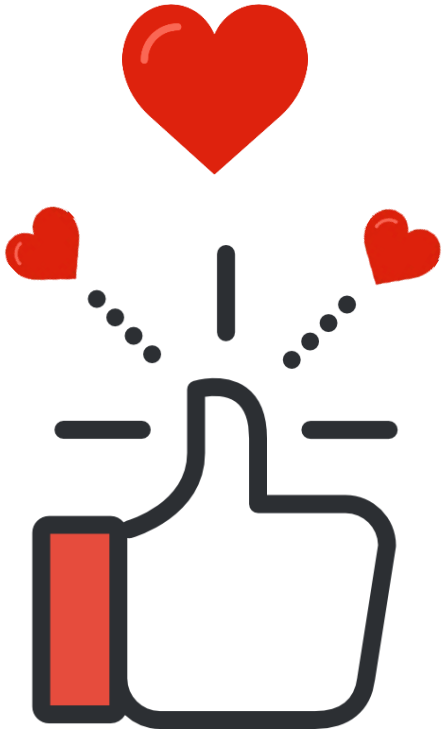

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