

Lab 5: Solidity Modifier Tutorial - Control Functions with Modifiers

Step 1 & Step 2 & Step 3: Creating the Smart Contract and a Modifier and use it

Name: Priyanka, Stu-id: 20179

Go to Remix Ethereum IDE at <http://remix.ethereum.org> and create smart contract called lab5.sol

1. lab5.sol content add modifier



Home



lab5.sol X

```
1  pragma solidity ^0.4.18;
2
3  contract Coursetro {
4      string fName;
5      uint age;
6      address owner;
7
8      // Constructor to initialize default values
9      constructor()public {  undefined gas
10         fName = "gary";
11         age = 34;
12         owner = msg.sender;
13     }
14     event Instructor(
15         string name,
16         uint age
17     );
18     modifier onlyOwner() {
19         require(msg.sender == owner);
20         _;
21     }
22
23     // Function to set instructor details
24     function setInstructor(string memory _fName, uint _age) public
25     onlyOwner
26     {
27         fName = _fName;
28         age = _age;
29         emit Instructor(_fName, _age);
30     }
31
32
33     // Function to get instructor details
```

```

        uint age
    );
    modifier onlyOwner() {
        require(msg.sender == owner);
        _;
    }

    // Function to set instructor details
    function setInstructor(string memory _fName, uint _age) public
    onlyOwner
    {
        fName = _fName;
        age = _age;
        emit Instructor(_fName, _age);
    }

    // Function to get instructor details
    function getInstructor() public constant returns (string memory, uint) {
        return (fName, age);
    }
}

```

2. compile and deploy, replace the ABI, contract and account address in the index_lab5.html

index_lab5.html

index_lab4.html

main_lab5.css

<> index_lab5.html > html > body > script > run > click() callback > from

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4    <meta charset="UTF-8" />
5    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
6    <meta http-equiv="X-UA-Compatible" content="ie=edge" />
7    <title>Document</title>
8    <link rel="stylesheet" type="text/css" href="main_lab5.css" />
9    <script src="./node_modules/web3/dist/web3.min.js"></script>
10 </head>
11 <body>
12   <div class="container">
13     <h1>Coursetro Instructor</h1>
14     <h2 id="instructor">
15       <!-- ADDED -->
16       
17     </h2>
18     <label for="name" class="col-lg-2 control-label">Instructor Name</label>
19     <input id="name" type="text" />
20     <label for="age" class="col-lg-2 control-label">Instructor Age</label>
21     <input id="age" type="text" />
22     <button id="button">Update Instructor</button>
23   </div>
24
25   <script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"></script>
26   <script>
27     const run = async () => {
28       var web3;
29       if (typeof web3 !== "undefined") {
30         web3 = new Web3(web3.currentProvider);
31       } else {
32         // Set the provider you want from Web3.providers
33         web3 = new Web3(
34           new Web3.providers.WebsocketProvider("ws://localhost:8545")
35         );
36       }
37     }
```

```
37
38     const accounts = await web3.eth.getAccounts();
39     web3.eth.defaultAccount = accounts[0];
40     console.log(web3.eth.defaultAccount);
41     console.log("Creating Coursetro");
42
43     var Coursetro = new web3.eth.Contract(
44         [
45     {
46         "constant": false,
47         "inputs": [
48             {
49                 "name": "_fName",
50                 "type": "string"
51             },
52             {
53                 "name": "_age",
54                 "type": "uint256"
55             }
56         ],
57         "name": "setInstructor",
58         "outputs": [],
59         "payable": false,
60         "stateMutability": "nonpayable",
61         "type": "function"
62     },
63     {
64         "inputs": [],
65         "payable": false,
66         "stateMutability": "nonpayable",
67         "type": "constructor"
68     },
69     {
```

```
68     },
69     {
70         "anonymous": false,
71         "inputs": [
72             {
73                 "indexed": false,
74                 "name": "name",
75                 "type": "string"
76             },
77             {
78                 "indexed": false,
79                 "name": "age",
80                 "type": "uint256"
81             }
82         ],
83         "name": "Instructor",
84         "type": "event"
85     },
86     {
87         "constant": true,
88         "inputs": [],
89         "name": "getInstructor",
90         "outputs": [
91             {
92                 "name": "",
93                 "type": "string"
94             },
95             {
96                 "name": "",
97                 "type": "uint256"
98             }
99         ]
100     }
101 }
```

```

    }
  ],
  "payable": false,
  "stateMutability": "view",
  "type": "function"
}
],
  "0x03908AC311B7E2ddeC1b47A5e17FB68c8FE8253F"
);

Coursetro.events
  .Instructor()
  .on("connected", function (subscriptionId) {
    console.log(subscriptionId);
  })
  .on("data", function (event, error) {
    console.log("Inside instructorEvent.on");
    console.log(event);
    $("#loader").hide();
    $("#instructor").html(
      event.returnValues.name +
      " (" +
      event.returnValues.age +
      " years old)"
    );
  })
  .on("error", function (error) {
    $("#loader").hide();
    console.error(error);
  });

$("#button").click(function () {

```

```

        " years old)"
    );
})
.on("error", function (error) {
    $("#loader").hide();
    console.error(error);
});

$("#button").click(function () {
    console.log("Inside click");
    $("#loader").show();
    Coursetro.methods
        .setInstructor($("#name").val(), $("#age").val())
        .send(
            { from: "0xAaCcD47107387ae4090B39915d366EA5A1801BfF" },
            function (error, transactionHash) {
                if (!error) {
                    console.log(transactionHash);
                } else {
                    alert(error);
                    console.log(error);
                }
            }
        );
    });
});
run();
</script>
</body>
</html>

```

3. open the index_lab5.html, input the name and age, update the info automatically.

Coursetro Instructor

Priyanka (25 years old)

Instructor Name

Priyanka

Instructor Age

25

Update Instructor

Coursetro Instructor

Priyanka (25 years old)

Instructor Name

Priyanka

Instructor Age

25

Update Instructor

```
0xAaCd047107387ae4090B39915d366EA541801Bff index_lab5.html:40
Creating Coursetro index_lab5.html:41
0x1 index_lab5.html:111
Inside click index_lab5.html:130
0xce2db77448d2d7012d06aa24e26e78f270b6395459dbd74d36c index_lab5.html:138
befd89f5e60b2
Inside instructorEvent.on index_lab5.html:114
index_lab5.html:115
{address: '0x039084C31187E2ddeC1b47A5e17F868c8fE8253F', blockHash: '0x0
324b1b26f5bfed13de1e9bc2d71c8c0c378b178b12751beb697476cdd7a6db1', block
Number: 2, LogIndex: 0, removed: false, ...}
```