

Create a .sol file in REMIX ide:

```
pragma solidity ^0.4.25;
```

```
contract Owned {
    address owner;

    constructor() public {
        owner = msg.sender;
    }
    modifier onlyOwner {
        require(msg.sender == owner);
        _;
    }
}

contract Courses is Owned {

    struct Instructor {
        uint age;
        bytes16 fName;
        bytes16 lName;
    }

    mapping (address => Instructor) instructors;
    address[] public instructorAccts;

    event instructorInfo(
        bytes16 fName,
        bytes16 lName,
        uint age
    );

    function setInstructor(address _address, uint _age, bytes16 _fName, bytes16 _lName)
    onlyOwner public {
        Instructor storage instructor = instructors[_address];
        instructor.age = _age;
        instructor.fName = _fName;
        instructor.lName = _lName;

        instructorAccts.push(_address) -1;
        emit instructorInfo(_fName, _lName, _age);
    }

    function getInstructors() view public returns(address[]) {
        return instructorAccts;
    }
}
```

```

    }

    function getInstructor(address _address) view public returns (uint, bytes16, bytes16) {
        return (instructors[_address].age, instructors[_address].fName,
instructors[_address].lName);
    }

    function countInstructors() view public returns (uint) {
        return instructorAccts.length;
    }
}

```

Compile .sol file to get the ABI code

Open the MetaMask

Go to Deploy & run transactions, in Environment change to **Injected Web3**

Click the Deploy and Confirm the Metamask transaction

Create an .html file in folder with (replace to your ABI code and address):

```

<!DOCTYPE html>
<html lang="en">
<head>
<link rel="shortcut icon" href="#">
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<meta http-equiv="X-UA-Compatible" content="ie=edge">
<title>Document</title>
<link rel="stylesheet" type="text/css" href="main.css">
<script src="./node_modules/web3/dist/web3.min.js"></script>
</head>
<body>
<div class="container">
<h1>Coursetro Instructor</h1>
<span id="countIns"></span>
<h2 id="instructor"></h2>
<span id="insTrans"></span>
<hr>

<label for="fName" class="col-lg-2 control-label">First Name</label>
<input id="fName" type="text">
<label for="lName" class="col-lg-2 control-label">Last Name</label>
<input id="lName" type="text">
<label for="age" class="col-lg-2 control-label">Instructor Age</label>
<input id="age" type="text">
<button id="button">Update Instructor</button>

```

```

</div>
<script src="https://code.jquery.com/jquery-3.2.1.slim.min.js"></script>
<script>
var web3;
if (typeof web3 !== 'undefined') {
web3 = new Web3(web3.currentProvider);
} else {
// set the provider you want from Web3.providers
web3 = new Web3(new Web3.providers.HttpProvider("http://localhost:8545"));
if(!web3.isConnected()) {
console.log('not-connected');
} else {
console.log('connected');
}
}
web3.eth.defaultAccount = web3.eth.accounts[0];
// web3.eth.defaultAccount = web3.eth.accounts[2];
// var CoursetroContract = web3.eth.contract('PASTE ABI CODE HERE');
// //////////////////////////////////////
// The following highlighted area must be converted into one line. //
// //////////////////////////////////////
var CoursetroContract = web3.eth.contract([
  {
    "anonymous": false,
    "inputs": [
      {
        "indexed": false,
        "internalType": "bytes16",
        "name": "fName",
        "type": "bytes16"
      },
      {
        "indexed": false,
        "internalType": "bytes16",
        "name": "lName",
        "type": "bytes16"
      },
      {
        "indexed": false,
        "internalType": "uint256",
        "name": "age",
        "type": "uint256"
      }
    ],

```

```

    "name": "instructorInfo",
    "type": "event"
  },
  {
    "constant": true,
    "inputs": [],
    "name": "countInstructors",
    "outputs": [
      {
        "internalType": "uint256",
        "name": "",
        "type": "uint256"
      }
    ],
    "payable": false,
    "stateMutability": "view",
    "type": "function"
  },
  {
    "constant": true,
    "inputs": [
      {
        "internalType": "address",
        "name": "_address",
        "type": "address"
      }
    ],
    "name": "getInstructor",
    "outputs": [
      {
        "internalType": "uint256",
        "name": "",
        "type": "uint256"
      },
      {
        "internalType": "bytes16",
        "name": "",
        "type": "bytes16"
      },
      {
        "internalType": "bytes16",
        "name": "",
        "type": "bytes16"
      }
    ]
  }

```

```

    ],
    "payable": false,
    "stateMutability": "view",
    "type": "function"
  },
  {
    "constant": true,
    "inputs": [],
    "name": "getInstructors",
    "outputs": [
      {
        "internalType": "address[]",
        "name": "",
        "type": "address[]"
      }
    ],
    "payable": false,
    "stateMutability": "view",
    "type": "function"
  },
  {
    "constant": true,
    "inputs": [
      {
        "internalType": "uint256",
        "name": "",
        "type": "uint256"
      }
    ],
    "name": "instructorAccts",
    "outputs": [
      {
        "internalType": "address",
        "name": "",
        "type": "address"
      }
    ],
    "payable": false,
    "stateMutability": "view",
    "type": "function"
  },
  {
    "constant": false,
    "inputs": [

```

```

        {
            "internalType": "address",
            "name": "_address",
            "type": "address"
        },
        {
            "internalType": "uint256",
            "name": "_age",
            "type": "uint256"
        },
        {
            "internalType": "bytes16",
            "name": "_fName",
            "type": "bytes16"
        },
        {
            "internalType": "bytes16",
            "name": "_lName",
            "type": "bytes16"
        }
    ],
    "name": "setInstructor",
    "outputs": [],
    "payable": false,
    "stateMutability": "nonpayable",
    "type": "function"
}

});
console.log('created CoursetroContract');
// var Coursetro = CoursetroContract.at('PASTE CONTRACT ADDRESS HERE');
console.log('Creating Coursetro');
// //////////////////////////////////////
// The following highlighted area must be customized for your smart
// contract. // //////////////////////////////////////
var Coursetro = CoursetroContract.at('0xe0B8de8E794C4e761DdFd73a1019356A283eEab8');
console.log(Coursetro);
// Replace the Coursetro.getInstructor() lines with this line:
// var instructorEvent = Coursetro.Instructor();
var instructorEvent = Coursetro.instructorInfo({}, 'latest');
instructorEvent.watch(function(error, result) {
    if (result) {
        if (result.blockHash != $("#insTrans").html())
            $("#loader").hide();
            $("#insTrans").html('Block hash: ' + result.blockHash);
    }
});

```

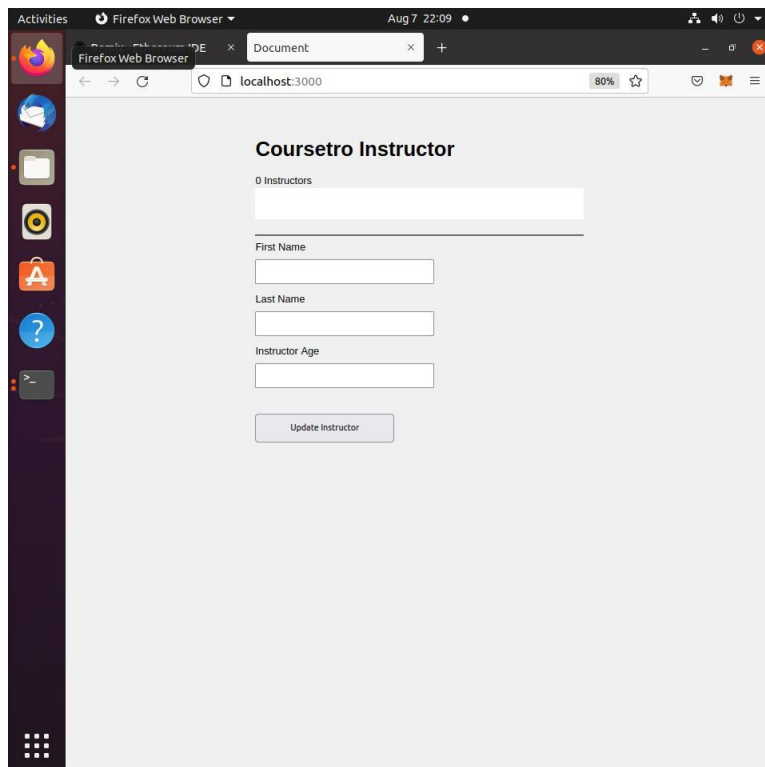
```

$("#instructor").html(web3.toAscii(result.args.fName) + ' ' +
web3.toAscii(result.args.lName) + ' (' + result.args.age + ' years old)');
} else {
$("#loader").hide();
}
});
Coursetro.countInstructors((err, res) => {
if (res)
$("#countIns").html(res.c + ' Instructors');
})
$("#button").click(function() {
$("#loader").show();
Coursetro.setInstructor(web3.eth.defaultAccount,      $("#age").val(),      $("#fName").val(),
$("#lName").val(), (err, res) => {
if (err) {
$("#loader").hide();
}
});
});
</script>
</body>
</html>

```

Go to the .html file address, open a terminal, run with:

npm run dev



Activities Firefox Web Browser Aug 8 00:16

Document Remix - Ethereum IDE

localhost:3000

Coursetro Instructor

0 Instructors

Rhythmbbox

First Name
quan

Last Name
zhou

Instructor Age
88

Update Instructor

CONTRACT INTERACTION

Account1 → 0xe0B8...Ea...

0

GAS FEE 0.000105
No Conversion Rate Available

Gas Price (GWEI) 4.999999998 Gas Limit 21000

AMOUNT + GAS FEE

TOTAL 0.000105
No Conversion Rate Available

Reject Confirm

Inspector Console Debugger Network Style Editor

Filter Output

```
Object { eth: {-.}, transactionHash: null, address: "0xe0B8de8E794C4e761DdF73a1019356A283eEab8", abi: localhost:3000:181:9
(6) [...], getInstructor: (), getInstructors: (), instructorAccts: (), countInstructors: (), setInstructor:
(), allEvents: {-.}}
```

Uncaught Error: Invalid number of arguments to Solidity function web3.min.js:1:27460

- InvalidNumberOfSolidityArgs http://localhost:3000/node_modules/web3/dist/web3.min.js:1
- validateArgs http://localhost:3000/node_modules/web3/dist/web3.min.js:1
- toPayload http://localhost:3000/node_modules/web3/dist/web3.min.js:1
- sendTransaction http://localhost:3000/node_modules/web3/dist/web3.min.js:1
- execute http://localhost:3000/node_modules/web3/dist/web3.min.js:1
- <anonymous> http://localhost:3000/:283
- jQuery 9 http://localhost:3000/:201
- <anonymous>