DAPP & What is truffle

2017/11/08 冀謙



DAPP = HTML + Node

DAPP = HTML + Node

Web3 JSAPI

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Web3 JSAPI

html

css

javascript

react.js

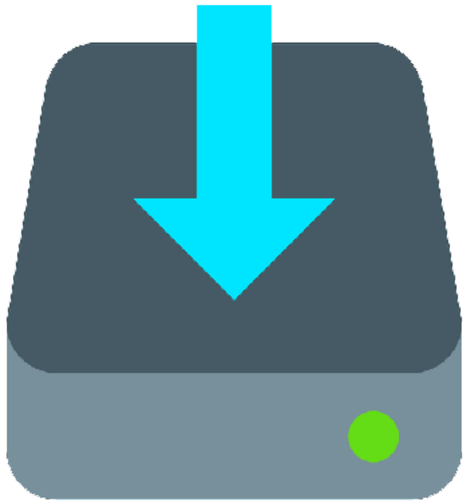
solidity

javascript

So What is Truffle ?

Talk about deploy a dapp.

without truffle



Install Package

- sudo apt-get update
- curl -sL https://deb.nodesource.com/setup_7.x -o nodesource_setup.sh
- sudo bash nodesource_setup.sh
- sudo apt-get install nodejs
- mkdir -p ethereum_voting_dapp/vote
- cd ethereum_voting_dapp/vote
- npm install ethereumjs-testrpc web3@0.20.1 solc
- node_modules/.bin/testrpc

Coding Contract (Solidity)

- nano Voting.sol

```
pragma solidity ^0.4.11;

contract Voting {

  mapping (bytes32 => uint8) public votesReceived;
  bytes32[] public candidateList;

  function Voting(bytes32[] candidateNames) {
    candidateList = candidateNames;
  }

  function totalVotesFor(bytes32 candidate) returns (uint8) {
    require(validCandidate(candidate));
    return votesReceived[candidate];
  }

  function voteForCandidate(bytes32 candidate) {
    require(validCandidate(candidate));
    votesReceived[candidate]  += 1;
  }

  function validCandidate(bytes32 candidate) returns (bool) {
    for(uint i = 0; i < candidateList.length; i++) {
      if (candidateList[i] == candidate) {
        return true;
      }
    }
    return false;
  }
}
```

Compile Contract
(Solidity)

- sudo node
- > Web3 = require('web3')
- > web3 = new Web3(new Web3.providers.HttpProvider("http://localhost:8545"));
- > web3.eth.accounts
- > code = fs.readFileSync('Voting.sol').toString()
- > solc = require('solc')
- > compiledCode = solc.compile(code)

Deploy Contract
(Solidity)

- > abiDefinition = JSON.parse(compiledCode.contracts[':Voting'].interface)
- > VotingContract = web3.eth.contract(abiDefinition)
- > byteCode = compiledCode.contracts[':Voting'].bytecode
- > deployedContract = VotingContract.new(['*Rama*','*Nick*','*Jose*'],{data: byteCode, from: web3.eth.accounts[0], gas: 4700000})
- > deployedContract.address
- > contractInstance = VotingContract.at(deployedContract.address)

Run Contract
(Console)

- > contractInstance.totalVotesFor.call('Rama').toLocaleString()
  //Count of Rama
- > contractInstance.voteForCandidate('Rama', {from:
  web3.eth.accounts[0]}) //Vote Rama

Coding Site (HTML)
(maybe CSS)

- nano index.html

```
<!DOCTYPE html>
<html>
<head>
 <title>Hello World DApp</title>
 <link href='https://fonts.googleapis.com/css?family=Open Sans:400,700' rel='stylesheet' type='text/css'>
 <link href='https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css' rel='stylesheet' type='text/css'>
</head>
<body class="container">
 <h1>A Simple Hello World Voting Application</h1>
 <div class="table-responsive">
  <table class="table table-bordered">
   <thead>
    <tr>
     <th>Candidate</th>
     <th>Votes</th>
    </tr>
   </thead>
   <tbody>
    <tr>
     <td>Rama</td>
     <td id="candidate-1"></td>
    </tr>
    <tr>
     <td>Nick</td>
     <td id="candidate-2"></td>
    </tr>
    <tr>
     <td>Jose</td>
     <td id="candidate-3"></td>
    </tr>
   </tbody>
  </table>
 </div>
 <input type="text" id="candidate" />
 <a href="#" onclick="voteForCandidate()" class="btn btn-primary">Vote</a>
</body>
<script src="https://cdn.rawgit.com/ethereum/web3.js/develop/dist/web3.js"></script>
<script src="https://code.jquery.com/jquery-3.1.1.slim.min.js"></script>
<script src="index.js"></script>
</html>
```

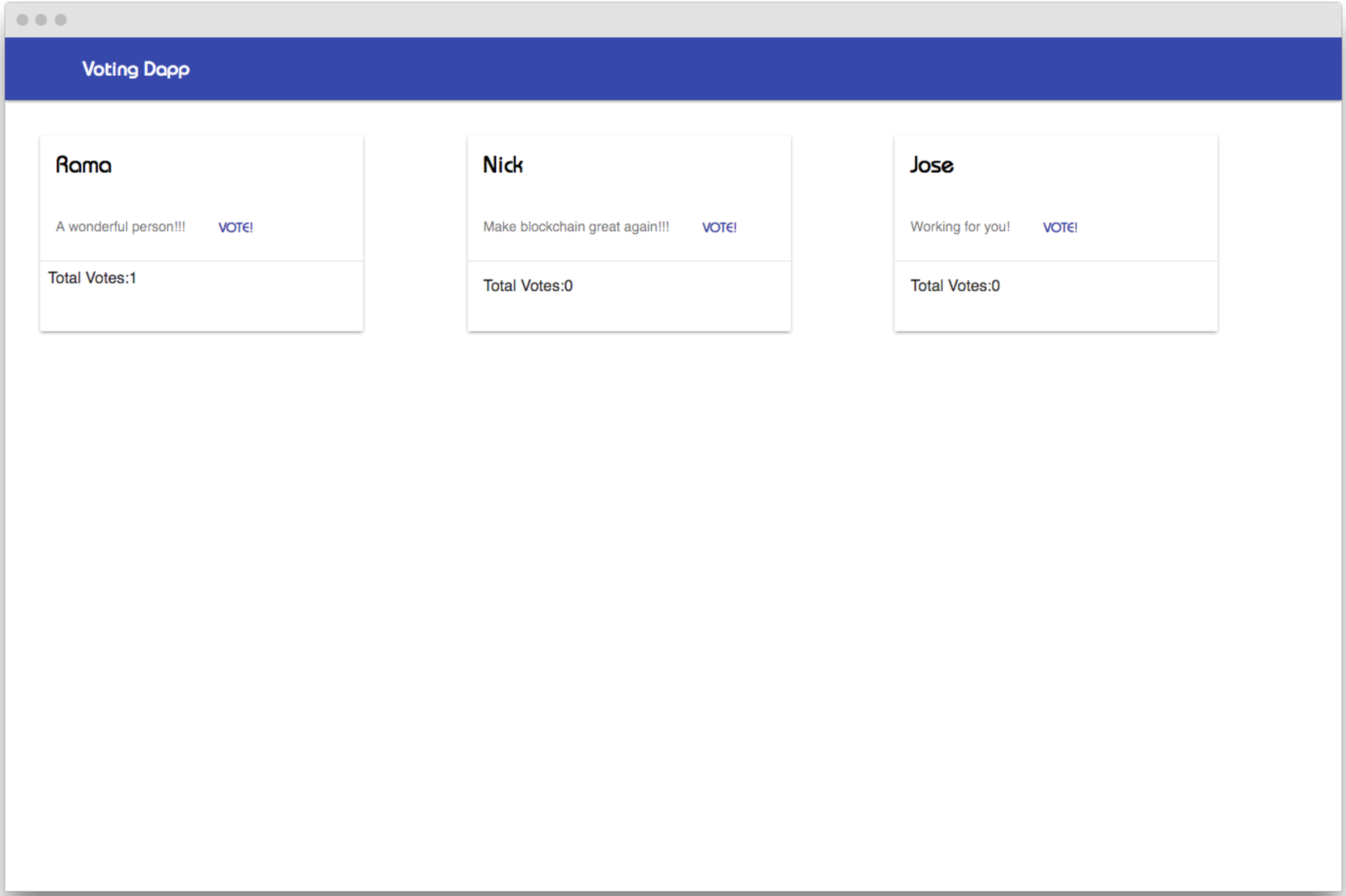
Coding Site API (JS)

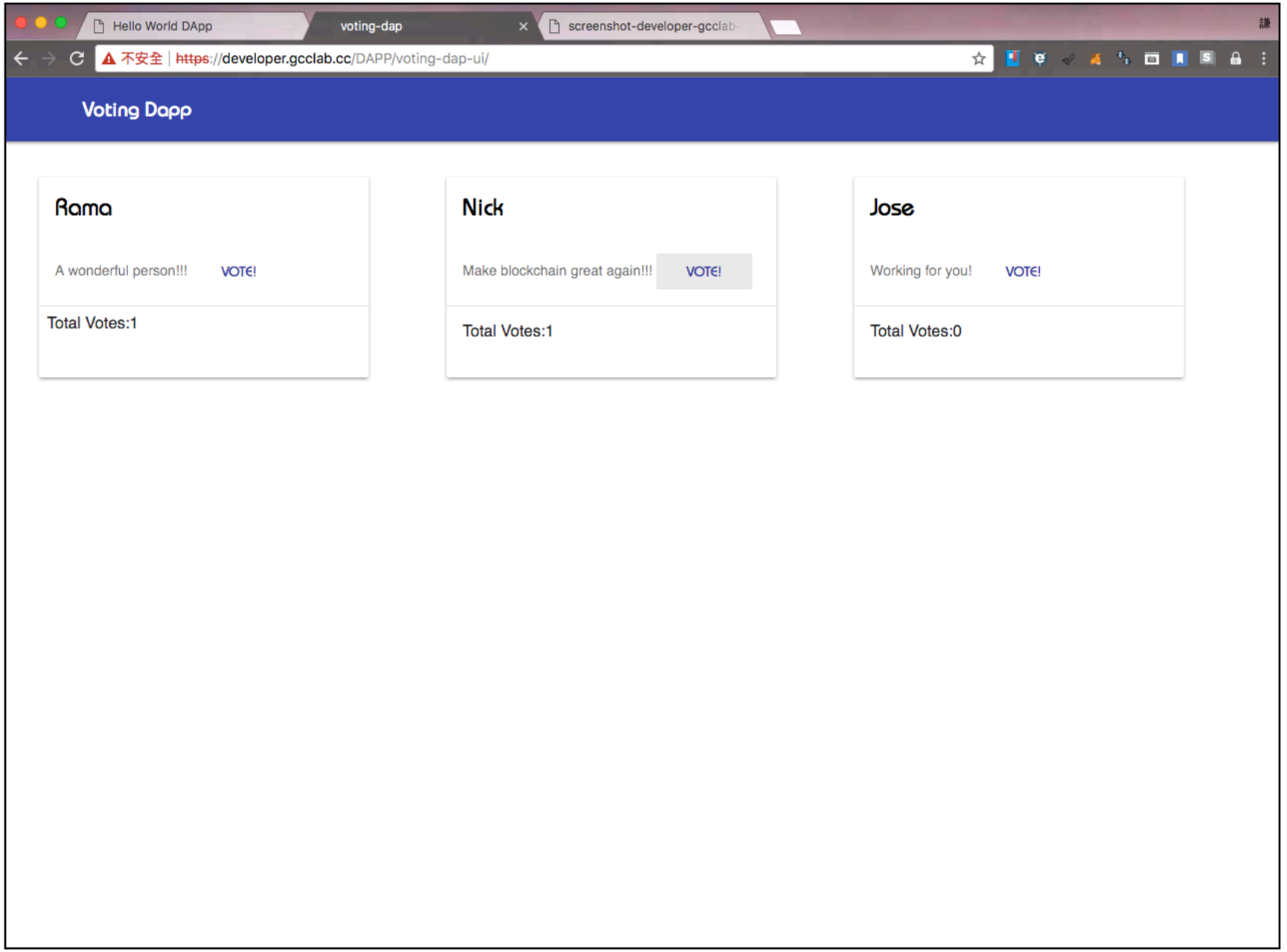
- nano index.js

```
web3 = new Web3(new Web3.providers.HttpProvider("http://localhost:8545"));
abi = JSON.parse('[{"constant":false,"inputs":[{"name":"candidate","type":"bytes32"}],"name":"totalVotesFor","outputs":
[{"name":"","type":"uint8"}],"payable":false,"type":"function"},{"constant":false,"inputs":
[{"name":"candidate","type":"bytes32"}],"name":"validCandidate","outputs":
[{"name":"","type":"bool"}],"payable":false,"type":"function"},{"constant":true,"inputs":
[{"name":"","type":"bytes32"}],"name":"votesReceived","outputs":
[{"name":"","type":"uint8"}],"payable":false,"type":"function"},{"constant":true,"inputs":
[{"name":"x","type":"bytes32"}],"name":"bytes32ToString","outputs":
[{"name":"","type":"string"}],"payable":false,"type":"function"},{"constant":true,"inputs":
[{"name":"","type":"uint256"}],"name":"candidateList","outputs":
[{"name":"","type":"bytes32"}],"payable":false,"type":"function"},{"constant":false,"inputs":
[{"name":"candidate","type":"bytes32"}],"name":"voteForCandidate","outputs":[],"payable":false,"type":"function"},
{"constant":true,"inputs":[],"name":"contractOwner","outputs":
[{"name":"","type":"address"}],"payable":false,"type":"function"},{"inputs":
[{"name":"candidateNames","type":"bytes32[]"}],"payable":false,"type":"constructor"}]')
VotingContract = web3.eth.contract(abi);
contractInstance = VotingContract.at('ADDRESS');
candidates = {"Rama": "candidate-1", "Nick": "candidate-2", "Jose": "candidate-3"}

function voteForCandidate(candidate) {
 candidateName = $("#candidate").val();
 try {
  contractInstance.voteForCandidate(candidateName, {from: web3.eth.accounts[0]}, function() {
   let div_id = candidates[candidateName];
   $("#"+div_id).html(contractInstance.totalVotesFor.call(candidateName).toString());
  });
 } catch (err) {
 }
}

$(document).ready(function() {
 candidateNames = Object.keys(candidates);
 for (var i = 0; i < candidateNames.length; i++) {
  let name = candidateNames[i];
  let val = contractInstance.totalVotesFor.call(name).toString()
  $("#"+candidates[name]).html(val);
 }
});
```


Voting Dapp
Rama
A wonderful person!!!
VOTE!
Total Votes:1
Nick
Make blockchain great again!!!
VOTE!
Total Votes:0
Jose
Working for you!
VOTE!
Total Votes:0


Hello World DApp
voting-dap
screenshot-developer-gcclab-
不安全
https://developer.gcclab.cc/DAPP/voting-dap-ui/
Voting Dapp
Rama
A wonderful person!!!
VOTE!
Total Votes:1
Nick
Make blockchain great again!!!
VOTE!
Total Votes:1
Jose
Working for you!
VOTE!
Total Votes:0

Truffle

Truffle

- sudo git clone *https://github.com/xxx/xxx.git*
- *npm install*
- npm *run dev*

So now …

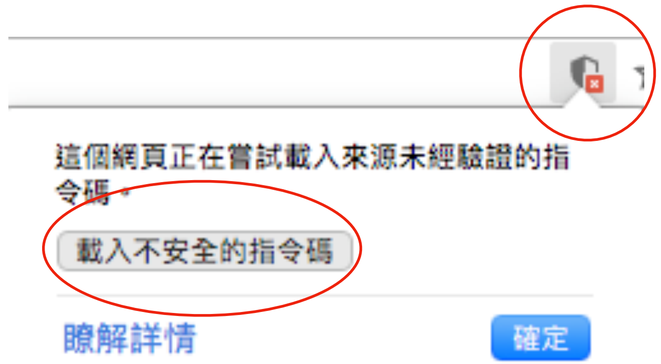
So now …

Voting for this slide at ***vote.gcclab.cc***

Make Sure To Use **CHROME** on **DESKTOP**

So now …

Voting for this slide at ***vote.gcclab.cc***



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