Getting Mean

Practical Perspective

Prof. Dr. Alejandro Zunino Prof. Dr. Alfredo Teyseyre

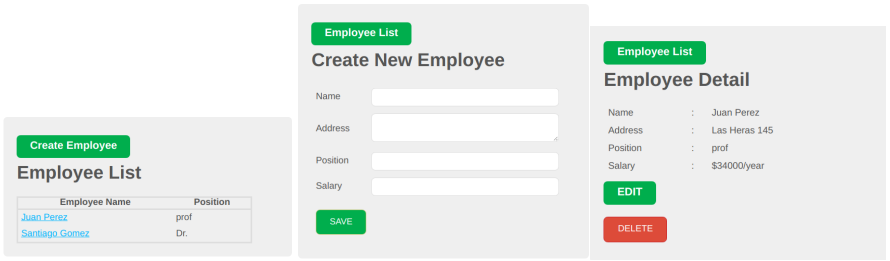
ISISTAN
Department of Computer Science
UNICEN

2019

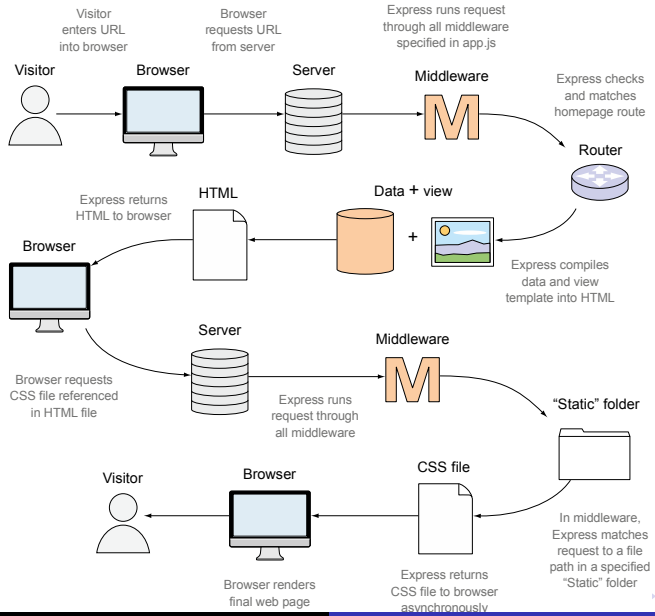
Outline

Introducing the example application

Node.js, Express.js and MongoDB CRUD Web Application

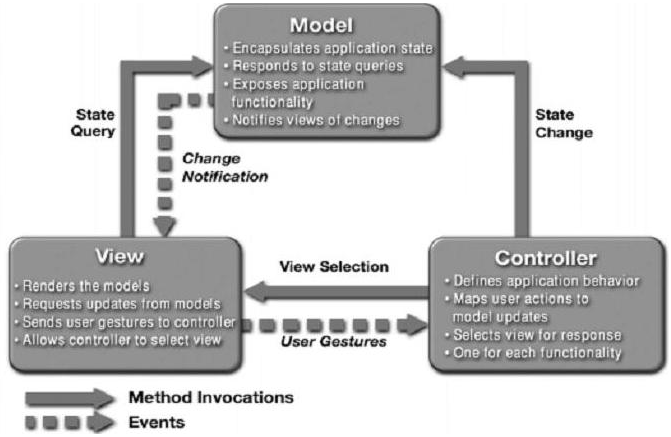


Express: The key interactions and processes



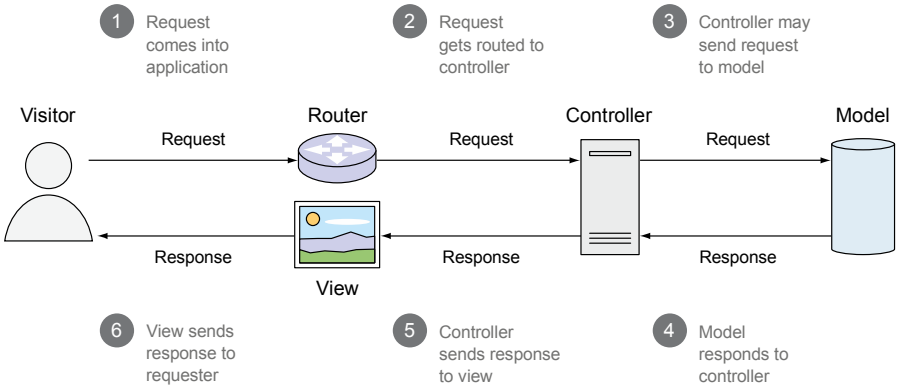
MVC Pattern

Model–view–controller is commonly used for developing software that divides an application into three interconnected parts

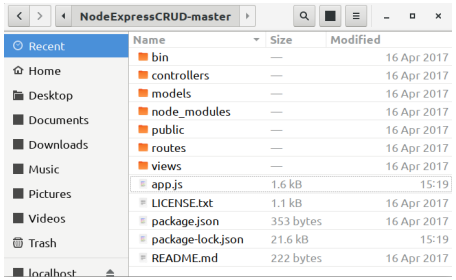


MVC

Request–response flow of a basic MVC architecture



Creating Web Application Project



Create project:

```
$ express node-crud --view=ejs
```

Install dependencies:

```
$npm install
npm install mongoose --save
sudo npm install -g nodemon
```

Try it out

```
nodemon
```


Mongoose.js Model

It expresses the application's behavior in terms of the problem domain, independent of the user interface

models/Employee.js:

```
var mongoose = require('mongoose');

var EmployeeSchema = new mongoose.Schema({
  name: String,
  address: String,
  pos: String,
  salary: Number,
  updated_at: { type: Date, default: Date.now }, });

module.exports = mongoose.model('Employee', EmployeeSchema);
```

Controller for CRUD Operations

The controller responds to the user input and performs interactions on the data model objects.

controllers/EmployeeController.js:

```
var mongoose = require("mongoose");
var Employee = require("../models/Employee");

//Create controller object for CRUD operations.
var empController = {};

// Show list of employees employee
empController.list = function(req, res) {
  Employee.find({}).exec(function (err, employees) {
    if (err) {
    console.log("Error:", err);     }
    else {
    res.render("../views/employees/index",
          {employees: employees});     }   }); };
```

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Controller for CRUD Operations

The controller responds to the user input and performs interactions on the data model objects.

controllers/EmployeeController.js:

```
// Show employee by id employee
empController.show = function(req, res) {
  Employee.findOne({_id: req.params.id}).exec(function (err,
       employee) {
    if (err) { console.log("Error:", err);     }
    else { res.render("../views/employees/show", {employee:
        employee});     }   }); };

// Create new employee employee
empController.create = function(req, res) {
  res.render("../views/employees/create"); };
```

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Controller for CRUD Operations

The controller responds to the user input and performs interactions on the data model objects.

controllers/EmployeeController.js:

```
// Save new employee employee
empController.save = function(req, res) {
  var employee = new Employee(req.body);
  employee.save(function(err) {
  if(err) {
   console.log(err);
   res.render("../views/employees/create");     }
  else {
   console.log("Successfully created an employee.");
   res.redirect("/employees/show/"+employee._id);     }   })
       ; };
```

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Creating Routes

To redirect the request to the controller before call query or display page

routes/employees.js:

```
var express = require('express');
var router = express.Router();

//Add require that point to Employee controller.
var employee = require("../controllers/EmployeeController.js
    ");

// Get all employees
router.get('/', function(req, res) {
  employee.list(req, res); });

// Get single employee by id
router.get('/show/:id', function(req, res) {
  employee.show(req, res); });
```

Creating Routes

To redirect the request to the controller before call query or display page

routes/employees.js:

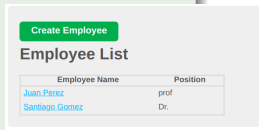
```
// Create employee
router.get('/create', function(req, res) {
  employee.create(req, res); });
// Save employee
router.post('/save', function(req, res) {   employee.save(
    req, res); });

// Edit employee
router.get('/edit/:id', function(req, res) {   employee.edit
    (req, res); });

// Edit update
router.post('/update/:id', function(req, res) {
    employee.update(req, res); });
```

Creating Views

The view means presentation of the model in a particular format.

views/employee/index.ejs:

```
<!DOCTYPE html> <html>
  <head>
    <title>Employee List</title>
    <link rel='stylesheet' href='/stylesheets/
        style.css' />
 </head>
<body>
  <div class="container">
   <h3><a href="/employees/create">Create
       Employee</a></h3>
   <h1>Employee List</h1>
    <% if(employees.length>0) { %>
    <table>
      <thead>
        <tr>
        <th>Employee Name</th>
```

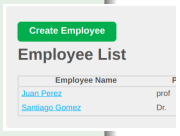


Creating Views

The view means presentation of the model in a particular format.

views/employees/index.ejs:

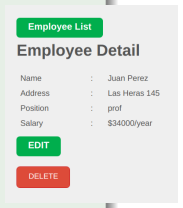
```
    <tbody>
          <
% for(var i=0; i<employees.length;i++) { %>
      <tr>
        <td><a href="/employees/show/<%= employees[i
            ]._id%>"><%= employees[i].name%></a></td
            >
        <td><%= employees[i].position%></td>
      </tr>           <% } %>
    </tbody>
    </table>
    <% } else { %>
      <div>No employees found.</div>
    <% } %>
  </div>
  </body>
```



Creating Views

views/employees/show.ejs:

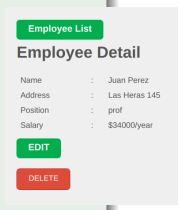
```
<!DOCTYPE html>
<html>
<head>
<title>Employee Detail</title>
<link rel='stylesheet' href='/stylesheets/style.css'
    />
</head>
<body>
  <div class="container">
  <h3><a href="/employees">Employee List</a></h3>
  <h1>Employee Detail</h1>
  <table>
  <tbody>
    <tr>
          <td>Name</td>
          <td>:</td>
      <td><%= employee.name %></td>
    </tr>
```



Creating Views

views/employees/show.ejs:

```
    <tr>
     <td>Address</td>
     <td>:</td>
     <td><%= employee.address %></td>
    </tr>
    ....
    <td>Salary</td>
    <td>:</td>
    <td>$<%= employee.salary %>/year</td>
    </tr>
  </tbody>
  </table>
```



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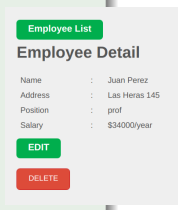
views/employees/show.ejs:

```
<h3>
<a href="/employees/edit/<%= employee._id%>">EDIT</a
    >
</h3>
<form action="/employees/delete/<%= employee._id%>"
    method="post">
  <button type="submit">DELETE</button>
</form>
</div>
</body>
</html>
```



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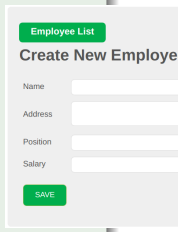
views/employees/create.ejs:

```
<html>
<head>
<title>Create Employee</title>
<link rel='stylesheet' href='/stylesheets/style.css'
     />
</head>
<body>
<div class="container">
<h3><a href="/employees">Employee List</a></h3>
<h1>Create New Employee</h1>
  <form action="/employees/save" method="post">
  <table>
  <tbody>
  <tr>
  <td>Name</td>
  <td><input type="text" name="name" /></td>
  </tr>
  <tr>
  <td>Address</td>
```



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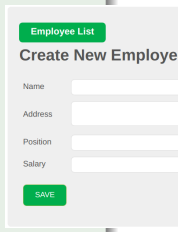
Creating Views

views/employees/create.ejs:

```
  <tr>
  <td>Position</td>
  <td><input type="text" name="position" /></td>
  </tr>
  <tr>
  <td>Salary</td>
  <td><input type="number" name="salary" /></td>
  </tr>
  <tr>
  <td colspan="2"><input type="submit" value="Save"
      /></td>
  </tr>
  </tbody>
</table>
</form>
</div>
</body>
</html>
```



For Further Reading I

Didin J.
https://www.djamware.com/post/58b27ce080aca72c54645983/how-to-create-nodejs-expressjs-and-mongodb-crud-web-application