Spring MVC CRUD Example

CRUD (Create, Read, Update and Delete) application is the most important application for creating any project. It provides an idea to develop a large project. In spring MVC, we can develop a simple CRUD application.

Here, we are using JdbcTemplate for database interaction.

Required Jar files

To run this example, you need to load:

- **Spring Core jar files**
- **Spring Web jar files**
- **ojdbc14.jar file for oracle**

download all the jar files for spring including core, web, aop, mvc, j2ee, remoting, oxm, jdbc, orm etc.

Create table

Here, we are using emp99 table of oracle 10g database which has 4 fields: id, name, salary and designation. Here, id is auto incremented which is generated by sequence.

Column Name	Data Type	Nullable	Default	Primary Key
ID	NUMBER	No	-	1
NAME	VARCHAR2(4000)	Yes	-	-
SALARY	NUMBER	Yes	-	-
DESIGNATION	VARCHAR2(4000)	Yes	-	-
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Spring MVC CRUD Example

index.jsp

```
<a href="empform">Add Employee</a>
<a href="viewemp">View Employees</a>
```

Emp.java

```
package com.javatpoint.beans;

public class Emp {
private int id;
private String name;
private float salary;
private String designation;

public int getId() {
    return id;
}
public void setId(int id) {
    this.id = id;
}
public String getName() {
    return name;
}
public void setName(String name) {
    this.name = name;
```

```
}
public float getSalary() {
    return salary;
}
public void setSalary(float salary) {
    this.salary = salary;
}
public String getDesignation() {
    return designation;
}
public void setDesignation(String designation) {
    this.designation = designation;
}

}
```

EmpDao.java

```
package com.javatpoint.dao;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.util.List;
import org.springframework.jdbc.core.BeanPropertyRowMapper;
import org.springframework.jdbc.core.JdbcTemplate;
import org.springframework.jdbc.core.RowMapper;
import com.javatpoint.beans.Emp;

public class EmpDao {
JdbcTemplate template;

public void setTemplate(JdbcTemplate template) {
    this.template = template;
}
public int save(Emp p){
    String sql="insert into Emp99(name,salary,designation)
        values('"+p.getName()+"',"+p.getSalary()+",'"+p.getDesignation()+"')";
    return template.update(sql);
}
public int update(Emp p){
    String sql="update Emp99 set name='"+p.getName()+"', salary="+p.getSalary()+",
```

```
        designation='"+p.getDesignation()+"' where id="+p.getId()+"";
    return template.update(sql);
}
public int delete(int id){
    String sql="delete from Emp99 where id="+id+"";
    return template.update(sql);
}
public Emp getEmpById(int id){
    String sql="select * from Emp99 where id=?";
    return template.queryForObject(sql, new Object[]{id},new BeanPropertyRowMapper<Emp>
(Emp.class));
}
public List<Emp> getEmployees(){
    return template.query("select * from Emp99",new RowMapper<Emp>(){
        public Emp mapRow(ResultSet rs, int row) throws SQLException {
            Emp e=new Emp();
            e.setId(rs.getInt(1));
            e.setName(rs.getString(2));
            e.setSalary(rs.getFloat(3));
            e.setDesignation(rs.getString(4));
            return e;
        }
    });
}
}
```

EmpController.java

```
package com.javatpoint.controllers;
import java.util.ArrayList;
import java.util.List;
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.ModelAttribute;
import org.springframework.web.bind.annotation.PathVariable;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestMethod;
import org.springframework.web.servlet.ModelAndView;
import com.javatpoint.beans.Emp;
import com.javatpoint.dao.EmpDao;
```

```
@Controller
public class EmpController {
   @Autowired
   EmpDao dao;//will inject dao from xml file

   /*It displays a form to input data, here "command" is a reserved request attribute
    *which is used to display object data into form
    */
   @RequestMapping("/empform")
   public ModelAndView showform(){
      return new ModelAndView("empform","command",new Emp());
   }
   /*It saves object into database. The @ModelAttribute puts request data
    *  into model object. You need to mention RequestMethod.POST method
    *  because default request is GET*/
   @RequestMapping(value="/save",method = RequestMethod.POST)
   public ModelAndView save(@ModelAttribute("emp") Emp emp){
      dao.save(emp);
      return new ModelAndView("redirect:/viewemp");//will redirect to viewemp request mapping
   }
   /* It provides list of employees in model object */
   @RequestMapping("/viewemp")
   public ModelAndView viewemp(){
      List<Emp> list=dao.getEmployees();
      return new ModelAndView("viewemp","list",list);
   }
   /* It displays object data into form for the given id.
    * The @PathVariable puts URL data into variable.*/
   @RequestMapping(value="/editemp/{id}")
   public ModelAndView edit(@PathVariable int id){
      Emp emp=dao.getEmpById(id);
      return new ModelAndView("empeditform","command",emp);
   }
   /* It updates model object. */
   @RequestMapping(value="/editsave",method = RequestMethod.POST)
   public ModelAndView editsave(@ModelAttribute("emp") Emp emp){
      dao.update(emp);
      return new ModelAndView("redirect:/viewemp");
   }
```

```
    /* It deletes record for the given id in URL and redirects to /viewemp */
    @RequestMapping(value="/deleteemp/{id}",method = RequestMethod.GET)
    public ModelAndView delete(@PathVariable int id){
        dao.delete(id);
        return new ModelAndView("redirect:/viewemp");
    }

}
```

web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="2.5"
    xmlns="http://java.sun.com/xml/ns/javaee"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
    http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd">
 <servlet>
    <servlet-name>spring</servlet-name>
    <servlet-class>org.springframework.web.servlet.DispatcherServlet</servlet-class>
    <load-on-startup>1</load-on-startup>
</servlet>
<servlet-mapping>
    <servlet-name>spring</servlet-name>
    <url-pattern>/</url-pattern>
</servlet-mapping>
</web-app>
```

spring-servlet.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:p="http://www.springframework.org/schema/p"
    xmlns:context="http://www.springframework.org/schema/context"
    xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans-3.0.xsd
http://www.springframework.org/schema/context
http://www.springframework.org/schema/context/spring-context-3.0.xsd">
```

```
<context:component-scan base-package="com.javatpoint.controllers"></context:component-scan>

<bean class="org.springframework.web.servlet.view.InternalResourceViewResolver">
<property name="prefix" value="/WEB-INF/jsp/"></property>
<property name="suffix" value=".jsp"></property>
</bean>

<bean id="ds" class="org.springframework.jdbc.datasource.DriverManagerDataSource">
<property name="driverClassName" value="oracle.jdbc.driver.OracleDriver"></property>
<property name="url" value="jdbc:oracle:thin:@localhost:1521:xe"></property>
<property name="username" value="system"></property>
<property name="password" value="oracle"></property>
</bean>

<bean id="jt" class="org.springframework.jdbc.core.JdbcTemplate">
<property name="dataSource" ref="ds"></property>
</bean>

<bean id="dao" class="com.javatpoint.dao.EmpDao">
<property name="template" ref="jt"></property>
</bean>
</beans>
```

empform.jsp

```
<%@ taglib uri="http://www.springframework.org/tags/form" prefix="form"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>

      <h1>Add New Employee</h1>
     <form:form method="post" action="save">
      <table >
       <tr>
        <td>Name : </td>
        <td><form:input path="name"  /></td>
       </tr>
       <tr>
        <td>Salary :</td>
        <td><form:input path="salary" /></td>
       </tr>
```

```
 <tr>
  <td>Designation :</td>
  <td><form:input path="designation" /></td>
 </tr>
 <tr>
  <td> </td>
  <td><input type="submit" value="Save" /></td>
 </tr>
</table>
</form:form>
```

empeditform.jsp

Here "/SpringMVCCRUDSimple" is the project name, change this if you have different project name. For live application, you can provide full URL.

```
<%@ taglib uri="http://www.springframework.org/tags/form" prefix="form"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>

 <h1>Edit Employee</h1>
<form:form method="POST" action="/SpringMVCCRUDSimple/editsave">
 <table >
 <tr>
 <td></td>
  <td><form:hidden  path="id" /></td>
 </tr>
 <tr>
  <td>Name : </td>
  <td><form:input path="name"  /></td>
 </tr>
 <tr>
  <td>Salary :</td>
  <td><form:input path="salary" /></td>
 </tr>
 <tr>
  <td>Designation :</td>
  <td><form:input path="designation" /></td>
 </tr>

 <tr>
```

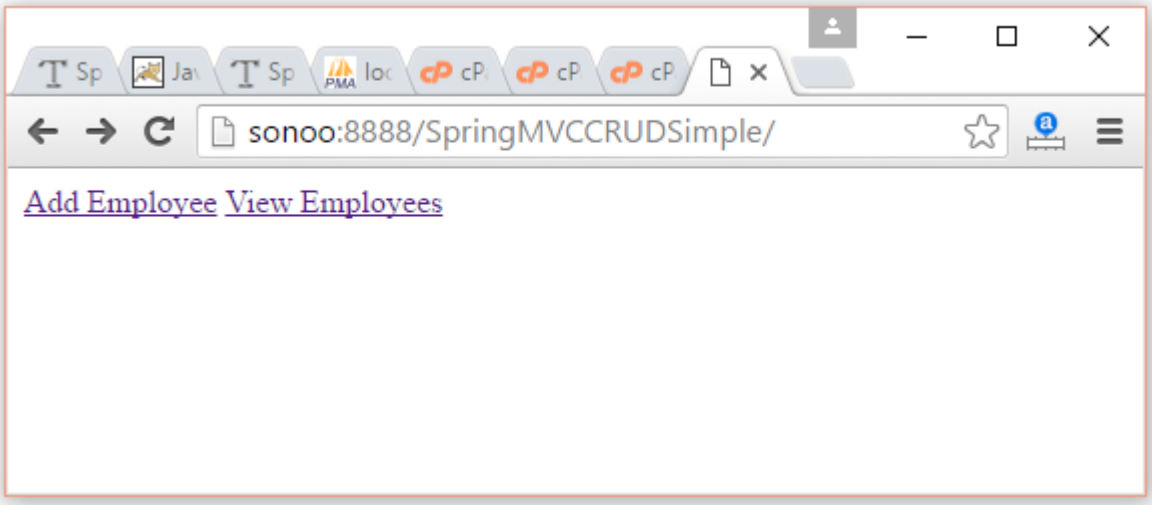
```
        <td> </td>
        <td><input type="submit" value="Edit Save" /></td>
       </tr>
      </table>
     </form:form>
```

viewemp.jsp

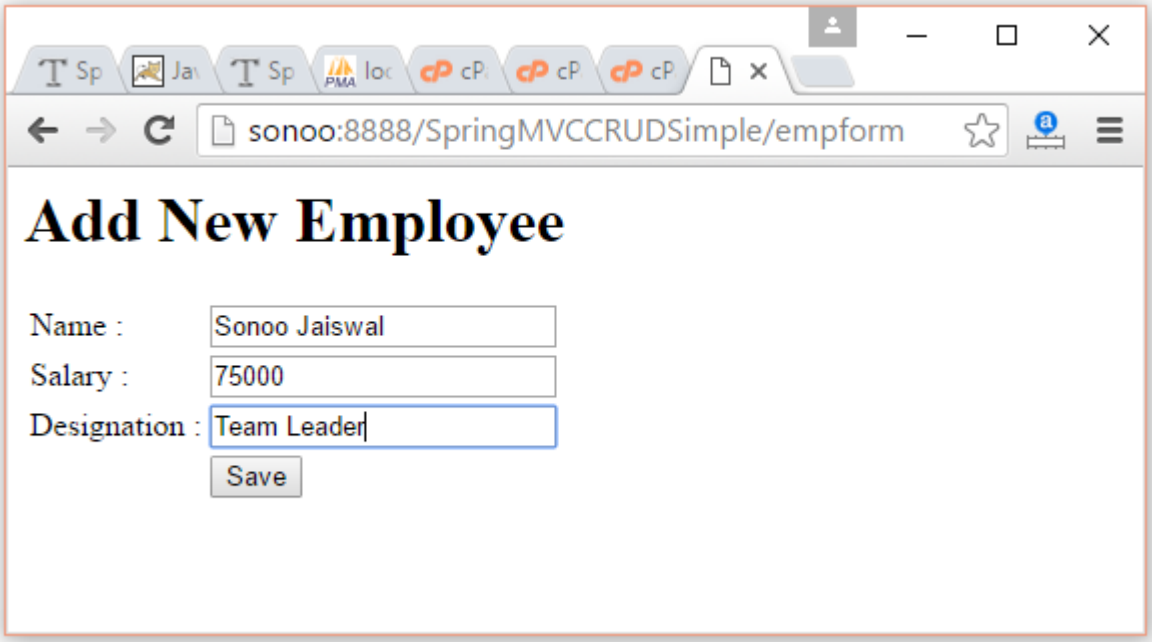
```
<%@ taglib uri="http://www.springframework.org/tags/form" prefix="form"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>


<h1>Employees List</h1>
<table border="2" width="70%" cellpadding="2">
<tr><th>Id</th><th>Name</th><th>Salary</th><th>Designation</th><th>Edit</th>
<th>Delete</th></tr>
<c:forEach var="emp" items="${list}">
<tr>
<td>${emp.id}</td>
<td>${emp.name}</td>
<td>${emp.salary}</td>
<td>${emp.designation}</td>
<td><a href="editemp/${emp.id}">Edit</a></td>
<td><a href="deleteemp/${emp.id}">Delete</a></td>
</tr>
</c:forEach>
</table>
<br/>
<a href="empform">Add New Employee</a>
```

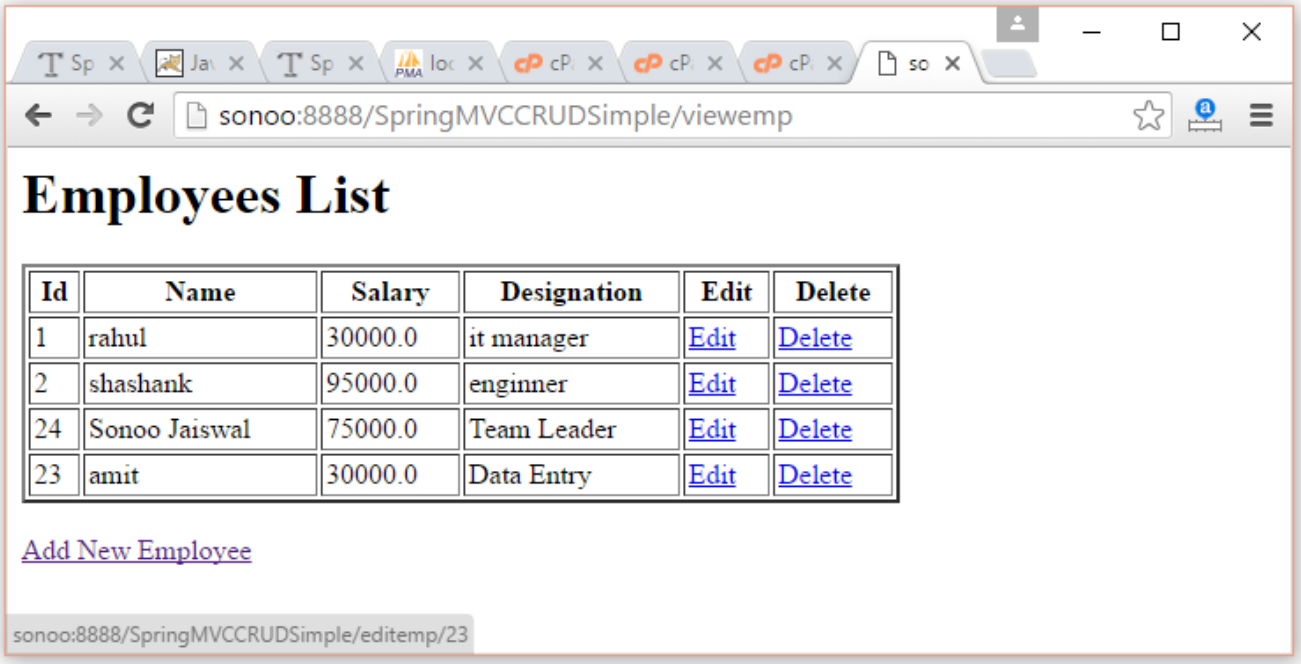
Output



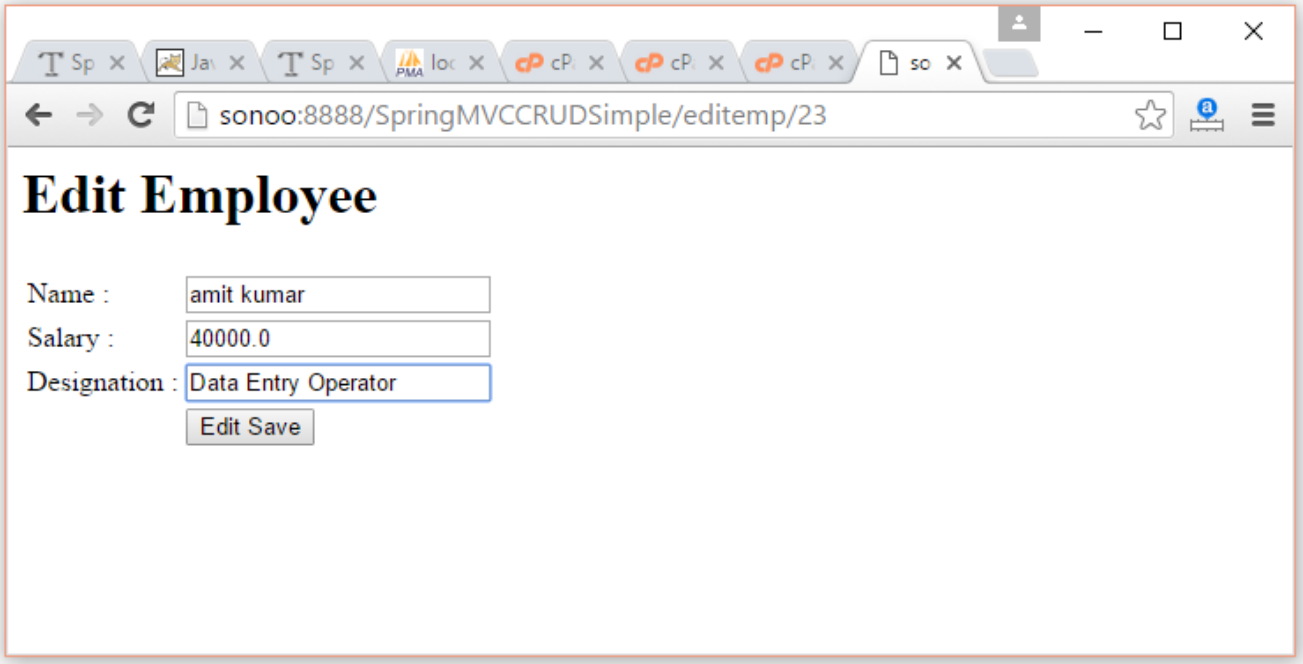
Click on "Add New Employee" link, you will see following form.



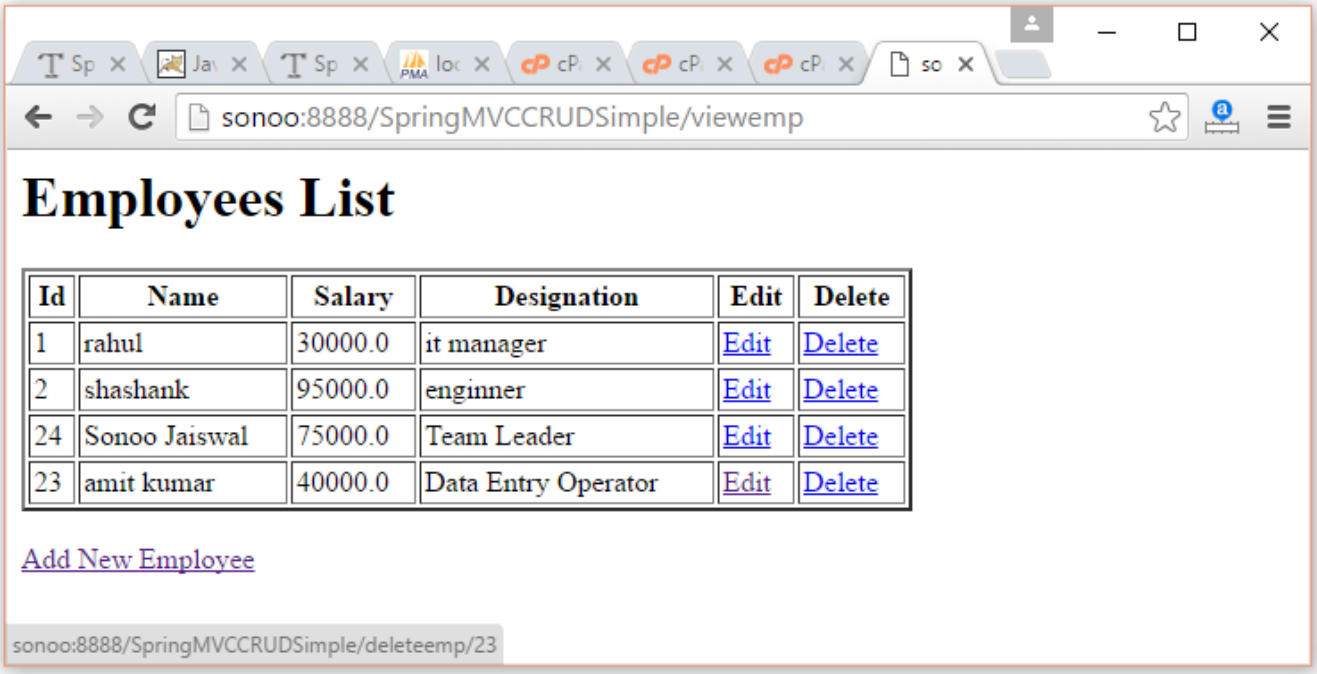
Fill data and click on save button. You will see employees list.



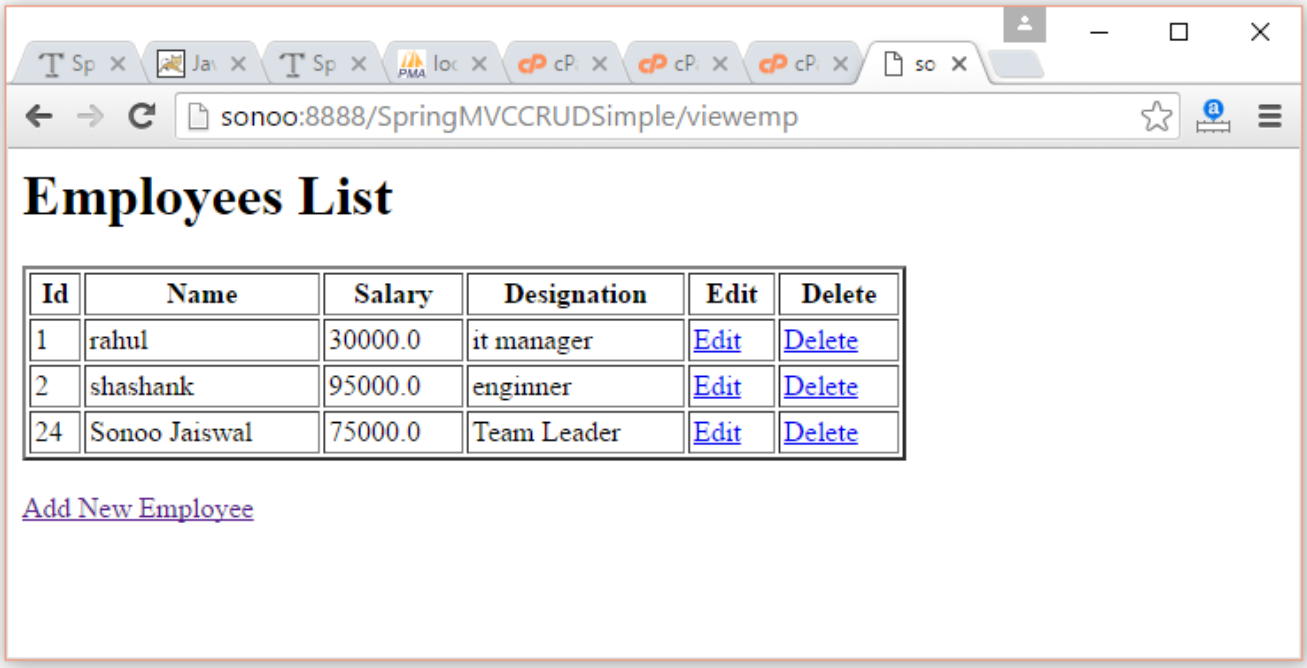
Now click on "edit" link, a form will appear with the data.



Now change the data of the form and click on "edit save" button.



Now click on "delete" link, you will see employees list with deleted record.



Download Spring MVC CRUD Example

We have created this application in MyEclipse IDE which already provides the jar files. If you use eclipse or other IDE's, you need to load the jar file for spring MVC.

download this example (developed using MyEclipse)