**Spring Boot Application**

* Create spring starter project
* After Finish
* In properties file under src/main/resources -> Add
* Rate=5
* In src/main/java, create an interface Iser and its implementation Iserimpl

package com.hexa.service;

public interface ISer {

public double calcSimple(double amount,int years);

}

package com.hexa.service;

import org.springframework.beans.factory.annotation.Value;

import org.springframework.stereotype.Service;

@Service("myser")

public class ISerImpl implements ISer{

@Value("${rate}")

private double rate;

@Override

public double calcSimple(double amount, int years) {

return amount \* years \* rate / 100;

}

}

package com.hexa;

import org.springframework.beans.factory.annotation.Autowired;

import org.springframework.boot.CommandLineRunner;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

import com.hexa.service.ISer;

@SpringBootApplication

public class SpringBootStandaloneApplication implements CommandLineRunner{

@Autowired

private ISer ser;

public static void main(String[] args) {

SpringApplication.run(SpringBootStandaloneApplication.class, args);

}

@Override

public void run(String... arg0) throws Exception {

System.out.println(ser.calcSimple(5000, 2));

}

}

O/P:

500.0

* Create spring starter project - SpringBootHibernate
* Add Dependency - JPA(for hibernate) , mysql
* In src/main/resourcs -> Application.properties

spring.datasource.driver-class-name=com.mysql.jdbc.Driver

spring.datasource.url=jdbc:mysql://localhost:3306/test

spring.datasource.username=root

spring.datasource.password=root

spring.jpa.show-sql=true

spring.jpa.database-platform=org.hibernate.dialect.MySQLDialect

* create package com.hexa.entity

package com.hexa.entity;

import java.util.Date;

import javax.persistence.Column;

import javax.persistence.Entity;

import javax.persistence.Id;

import javax.persistence.Table;

@Entity()

@Table(name="student")

public class Student {

@Id

@Column(name="stu\_id")

private int stuId;

@Column(name="stu\_name", length=45)

private String stuName;

@Column(name="dept", length=20)

private String dept;

@Column(name="stu\_dob")

private Date dob;

@Column(name="stu\_marks")

private int marks;

public int getStuId() {

return stuId;

}

public void setStuId(int stuId) {

this.stuId = stuId;

}

public String getStuName() {

return stuName;

}

public void setStuName(String stuName) {

this.stuName = stuName;

}

public String getDept() {

return dept;

}

public void setDept(String dept) {

this.dept = dept;

}

public Date getDob() {

return dob;

}

public void setDob(Date dob) {

this.dob = dob;

}

public int getMarks() {

return marks;

}

public void setMarks(int marks) {

this.marks = marks;

}

@Override

public String toString() {

return stuId + " " + stuName + " " + marks

+ " " + dept + " " + dob;

}

* Create a package com.hexa.dao , create an interface IDao and its implementation java files
* Create new class IDException. Implements Exception -> Right Click -> Source -> Generate constructor of super class -> Check 3rd and 4th

**package** com.hexa.dao;

**public** **class** IDException **extends** Exception{

**public** IDException(String message, Throwable cause) {

**super**(message, cause);

// **TODO** Auto-generated constructor stub

}

**public** IDException(String message) {

**super**(message);

// **TODO** Auto-generated constructor stub

}

}

}

**package** com.hexa.dao;

**import** java.util.List;

**import** com.hexa.entity.Student;

**public** **interface** IDao {

List<Student> getStudents();

List<Student> getStudents(String dept);

Student getStudent(**int** studentId);

**int** addStudent(Student stu) **throws** IDException;

}

**package** com.hexa.dao;

**import** java.util.List;

**import** org.hibernate.HibernateException;

**import** org.hibernate.Query;

**import** org.hibernate.Session;

**import** org.hibernate.SessionFactory;

**import** org.hibernate.Transaction;

**import** org.springframework.beans.factory.annotation.Autowired;

**import** org.springframework.stereotype.Repository;

**import** com.hexa.entity.Student;

@Repository("studao")

**public** **class** DaoImpl **implements** IDao{

@Autowired

**private** SessionFactory sfac;

@Override

**public** List<Student> getStudents() {

Session sess = sfac.openSession();

Query qry = sess.createQuery("from Student s");

List<Student> lst = qry.list();

sess.close();

**return** lst;

}

@Override

**public** List<Student> getStudents(String dept) {

Session sess = sfac.openSession();

Query qry = sess.createQuery("from Student s where dept=?");

qry.setString(0, dept);

List<Student> lst = qry.list();

sess.close();

**return** lst;

}

@Override

**public** Student getStudent(**int** studentId) {

Session sess = sfac.openSession();

Student stu = sess.get(Student.**class**, studentId);

sess.close();

**return** stu;

}

@Override

**public** **int** addStudent(Student stu) **throws** IDException {

Session sess = sfac.openSession();

Transaction tx = sess.beginTransaction();

**try** {

sess.save(stu);

tx.commit();

} **catch** (HibernateException e) {

tx.rollback();

**throw** **new** IDException("ID already Exists",e);

} **finally** {

sess.close();

}

**return** 1;

}

}

**package** com.hexa;

**import** java.util.List;

**import** javax.persistence.EntityManagerFactory;

**import** org.hibernate.SessionFactory;

**import** org.springframework.beans.factory.annotation.Autowired;

**import** org.springframework.boot.CommandLineRunner;

**import** org.springframework.boot.SpringApplication;

**import** org.springframework.boot.autoconfigure.SpringBootApplication;

**import** org.springframework.boot.autoconfigure.domain.EntityScan;

**import** org.springframework.context.annotation.Bean;

**import** com.hexa.dao.IDao;

**import** com.hexa.entity.Student;

@SpringBootApplication

@EntityScan("com.hexa.entity")

**public** **class** SpringBootHibernateApplication **implements** CommandLineRunner{

@Autowired

**private** EntityManagerFactory emf;

@Autowired

**private** IDao dao;

@Bean

**public** SessionFactory getSessioNFactory() {

**return** emf.unwrap(SessionFactory.**class**);

}

**public** **static** **void** main(String[] args) {

SpringApplication.*run*(SpringBootHibernateApplication.**class**, args);

}

@Override

**public** **void** run(String... arg0) **throws** Exception {

System.***out***.println("All Students");

List<Student> stuLst = dao.getStudents();

stuLst.forEach(System.***out***::println);

}

}

**Spring Web project**

* Create new spring starter project project -> Spring Boot Web
* Choose Dependency -> Web,Mysql,JPA
* Add the below dependency in pom.xml

<dependency>

<groupId>javax.servlet</groupId>

<artifactId>jstl</artifactId>

</dependency>

<dependency>

<groupId>org.apache.tomcat.embed</groupId>

<artifactId>tomcat-embed-jasper</artifactId>

<scope>provided</scope>

</dependency>

* Paste the below code in properties file

spring.datasource.driver-class-name=com.mysql.jdbc.Driver

spring.datasource.url=jdbc:mysql://localhost:3306/test

spring.datasource.username=root

spring.datasource.password=root

spring.jpa.show-sql=true

spring.jpa.database-platform=org.hibernate.dialect.MySQLDialect

server.port=8082

server.context-path=hexaweb

spring.mvc.view.prefix=/WEB-INF/

spring.mvc.view.suffix=.jsp

logging.level.empapp=DEBUG

logging.pattern.console=%level %Class.%M-%msg%n

create a folder under src->main->WebApp as WEB-INF.Paste the following jsp file in it

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<%@taglib uri=*"http://www.springframework.org/tags"* prefix=*"spring"*%>

<!DOCTYPE html>

<html>

<head>

<meta http-equiv=*"Content-Type"* content=*"text/html; charset=UTF-8"*>

<title>Tax Form</title>

</head>

<body>

<h1 align=*"center"*>Tax Form</h1>

<hr />

<form action=*"tax"* >

<table cellpadding=*"10"* bgcolor=*"#e3e3e3"* style="margin:*0 auto*">

<tr>

<td>Employee Name</td>

<td><input type=*"text"* name=*"txtname"*/></td>

</tr>

<tr>

<td>Annual Income</td>

<td><input type=*"text"* name=*"txtincome"*/></td>

</tr>

<tr>

<td colspan=*"2"* align=*"center"*>

<input type=*"submit"* value=*"Calculate Tax"*/></td>

</tr>

</table>

</form>

</body>

</html>

Create a new package com.hexa.web and create a class TaxController.java

**package** com.hexa.web;

**import** org.springframework.stereotype.Controller;

**import** org.springframework.web.bind.annotation.RequestMapping;

@Controller

@RequestMapping("/taxfrm")

**public** **class** TaxController {

**public** String displayTaxFrm() {

**return** "TaxFrm";

}

}

Copy com.hexa.dao and com.hexa.entity from the previous project

Add the code in SpringBootWeb1Application

package com.hexa;

import javax.persistence.EntityManagerFactory;

import org.hibernate.SessionFactory;

import org.springframework.beans.factory.annotation.Autowired;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

import org.springframework.boot.autoconfigure.domain.EntityScan;

import org.springframework.boot.web.support.SpringBootServletInitializer;

import org.springframework.context.annotation.Bean;

import com.hexa.dao.IDao;

@SpringBootApplication

@EntityScan("com.hexa.entity")

public class SpringBootWeb1Application extends SpringBootServletInitializer{

@Autowired

private EntityManagerFactory emf;

@Bean

public SessionFactory getSessioNFactory() {

return emf.unwrap(SessionFactory.class);

}

public static void main(String[] args) {

SpringApplication.run(SpringBootWeb1Application.class, args);

}

}

Add the logger code

**package** com.hexa.web;

**import** org.slf4j.Logger;

**import** org.slf4j.LoggerFactory;

**import** org.springframework.stereotype.Controller;

**import** org.springframework.web.bind.annotation.RequestMapping;

@Controller

@RequestMapping("/taxfrm")

**public** **class** TaxController {

**private** Logger logger = LoggerFactory.*getLogger*("empapp");

**public** String displayTaxFrm() {

logger.debug("Inside Display form");

**return** "TaxFrm";

}

}

Create a class under entity Interest.java

**package** com.hexa.entity;

**import** javax.validation.constraints.Min;

**import** org.hibernate.validator.constraints.NotEmpty;

**import** org.hibernate.validator.constraints.Range;

**public** **class** Interest {

@NotEmpty(message = "Amount is mandatory")

@Min(value=100000,message="Minimum amount must be 1000")

**private** Double amt;

@NotEmpty(message = "Years is mandatory")

@Range(min = 1, max = 30, message = "Years must be between 1 and 30")

**private** Integer years;

@NotEmpty(message = "Rate is mandatory")

@Min(value=1,message="Minimum value must be 1")

**private** Double rate;

**public** Double getAmt() {

**return** amt;

}

**public** **void** setAmt(Double amt) {

**this**.amt = amt;

}

**public** Integer getYears() {

**return** years;

}

**public** **void** setYears(Integer years) {

**this**.years = years;

}

**public** Double getRate() {

**return** rate;

}

**public** **void** setRate(Double rate) {

**this**.rate = rate;

}

}

Create InterestController,java file in com.hexa.web