Online Quiz Portal Using REST APIs Source code:

Admin.java:

package com.bean;

import javax.persistence.Entity; import javax.persistence.Id; import javax.persistence.Table;

import org.springframework.stereotype.Component; @Component

@Entity @Table(name="admin") public class Admin {

@Id

private int id;

private String username; private String password; @Override

public String toString() {

return "Admin [id=" + id + ", username=" + username + ", password=" + password + "]";

}

public int getId() {

return id;

}

public void setId(int id) { this.id = id;

}

public String getUsername() { return username;

}

public void setUsername(String username) { this.username = username;

}

public String getPassword() { return password;

}

public void setPassword(String password) { this.password = password;

}

}

Question.java:

package com.bean;

import javax.persistence.Column; import javax.persistence.Entity;

import javax.persistence.GeneratedValue; import javax.persistence.GenerationType; import javax.persistence.Id;

import javax.persistence.Table;

import org.springframework.stereotype.Component;

@Component @Entity

@Table(name="question") public class Question {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY) private int qid;

private String quest; private String opt1; private String opt2; private String opt3; private String opt4; private int ans;

public int getQid() {

return qid;

}

public void setQid(int qid) { this.qid = qid;

}

public String getQuest() { return quest;

}

public void setQuest(String quest) { this.quest = quest;

}

public String getOpt1() { return opt1;

}

public void setOpt1(String opt1) { this.opt1 = opt1;

}

public String getOpt2() { return opt2;

}

public void setOpt2(String opt2) { this.opt2 = opt2;

}

public String getOpt3() { return opt3;

}

public void setOpt3(String opt3) { this.opt3 = opt3;

}

public String getOpt4() { return opt4;

}

public void setOpt4(String opt4) { this.opt4 = opt4;

}

public int getAns() {

return ans;

}

public void setAns(int ans) { this.ans = ans;

}

@Override

public String toString() {

return "Question [qid=" + qid + ", quest=" + quest + ", opt1=" + opt1 + ", opt2=" + opt2 + ", opt3=" + opt3

+ ", opt4=" + opt4 + ", ans=" + ans + "]";

}

}

Quiz.java:

package com.bean;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue; import javax.persistence.GenerationType; import javax.persistence.Id;

import javax.persistence.JoinColumn; import javax.persistence.ManyToOne; import javax.persistence.Table;

import org.springframework.stereotype.Component;

@Component @Entity @Table(name="quiz") public class Quiz {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY) private int quid;

private String title; private int quizno; private String subject; @ManyToOne

@JoinColumn(referencedColumnName = "qid") private Question qid;

public int getQuizno() {

return quizno;

}

public void setQuizno(int quizno) { this.quizno = quizno;

}

public int getQuid() {

return quid;

}

public void setQuid(int quid) { this.quid = quid;

}

public String getTitle() { return title;

}

public void setTitle(String title) { this.title = title;

}

public String getSubject() { return subject;

}

public void setSubject(String subject) { this.subject = subject;

}

public Question getQid() { return qid;

}

public void setQid(Question qid) { this.qid = qid;

}

@Override

public String toString() {

return "Quiz [quid=" + quid + ", title=" + title + ", quizno=" + quizno + ", subject=" + subject + ", qid="

+ qid + "]";

}

}

Result.java:

**package** com.bean;

**public class** Result **implements** Comparable<Result>{

//private int resid; **private** String email; **private** Integer marks; **public** Result()

{

}

**public** Result(String email2, **int** mark) {

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

**this**.email=email2;**this**.marks=mark;

}

// public int getResid() {

// return resid;

// }

// public void setResid(int resid) {

// this.resid = resid;

// }

**public** String getEmail() {

**return** email;

}

**public void** setEmail(String email) {

**this**.email = email;

}

**public** Integer getMarks() {

**return** marks;

}

**public void** setMarks(Integer marks) {

**this**.marks = marks;

}

@Override

**public** String toString() {

**return** "Result [email=" + email + ", marks=" + marks + "]";

}

@Override

**public int** compareTo(Result r) {

// **TODO** Auto-generated method stub

**int** comparemarks= r.getMarks();

**return** comparemarks-**this**.marks;

}

}

Statistics.java:

package com.bean;

import java.util.List;

import org.springframework.stereotype.Component;

@Component

public class Statistics {

private int users;

private List<Object> quiz; private int questions; @Override

public String toString() {

return "Statistics [users=" + users + ", quiz=" + quiz + ", questions=" + questions + "]";

}

public int getUsers() {

return users;

}

public void setUsers(int users) { this.users = users;

}

public List<Object> getQuiz() { return quiz;

}

public void setQuiz(List<Object> quiz) { this.quiz = quiz;

}

public int getQuestions() { return questions;

}

public void setQuestions(int questions) { this.questions = questions;

}

}

Test,java:

package com.bean;

import javax.persistence.CascadeType; import javax.persistence.Entity;

import javax.persistence.GeneratedValue; import javax.persistence.GenerationType; import javax.persistence.Id;

import javax.persistence.JoinColumn; import javax.persistence.ManyToOne; import javax.persistence.Table;

import org.springframework.stereotype.Component;

@Component @Entity @Table(name="test") public class Test {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY) private int tid;

@ManyToOne @JoinColumn(referencedColumnName = "uid") private User userid;

@ManyToOne @JoinColumn(referencedColumnName = "quid") private Quiz quizid;

@ManyToOne @JoinColumn(referencedColumnName = "qid") private Question questionid;

private int testans;

public int getTid() {

return tid;

}

public void setTid(int tid) { this.tid = tid;

}

public User getUserid() { return userid;

}

public void setUserid(User userid) { this.userid = userid;

}

public Quiz getQuizid() { return quizid;

}

public void setQuizid(Quiz quizid) { this.quizid = quizid;

}

public Question getQuestionid() { return questionid;

}

public void setQuestionid(Question questionid) { this.questionid = questionid;

}

public int getTestans() {

return testans;

}

public void setTestans(int testans) { this.testans = testans;

}

@Override

public String toString() {

return "Test [tid=" + tid + ", userid=" + userid + ", quid=" + quizid + ", questionid=" + questionid

+ ", testans=" + testans + "]";

}

}

User.java:

package com.bean;

import java.io.Externalizable; import java.io.IOException; import java.io.ObjectInput; import java.io.ObjectOutput;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue; import javax.persistence.GenerationType; import javax.persistence.Id;

import javax.persistence.Table;

import javax.persistence.UniqueConstraint;

import org.springframework.stereotype.Component;

@Component @Entity @Table(name="user")

public class User implements Externalizable { @Id

@GeneratedValue(strategy = GenerationType.IDENTITY) private int uid;

private String emailid; private String password; private long phno;

public int getUid() {

return uid;

}

public void setUid(int uid) { this.uid = uid;

}

public String getEmailid() { return emailid;

}

public void setEmailid(String emailid) { this.emailid = emailid;

}

public String getPassword() { return password;

}

public void setPassword(String password) { this.password = password;

}

public long getPhno() {

return phno;

}

public void setPhno(long phno) { this.phno = phno;

}

@Override

public void writeExternal(ObjectOutput out) throws IOException {

// TODO Auto-generated method stub

}

@Override

public void readExternal(ObjectInput in) throws IOException, ClassNotFoundException {

// TODO Auto-generated method stub

}

}

MainController.java:

package com.controller;

import java.util.List;

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

import org.springframework.web.bind.annotation.GetMapping; import org.springframework.web.bind.annotation.PostMapping; import org.springframework.web.bind.annotation.RequestBody; import org.springframework.web.bind.annotation.RequestMapping; import org.springframework.web.bind.annotation.RestController;

import com.bean.Admin; import com.bean.Question; import com.bean.Quiz; import com.bean.Result; import com.bean.Statistics; import com.bean.Test; import com.bean.User;

import com.service.AdminSer; import com.service.UserSer;

@RestController

@RequestMapping("mcq") public class MainController {

@Autowired UserSer us; @Autowired AdminSer as;

//http://localhost:8080/mcq/userLogin @PostMapping(value="userLogin", consumes =

MediaType.APPLICATION\_JSON\_VALUE)

public String userLogin(@RequestBody User u)

{

return us.userLogin(u.getEmailid(), u.getPassword());

}

//http://localhost:8080/mcq/userRegister

@PostMapping(value="userRegister", consumes = MediaType.APPLICATION\_JSON\_VALUE)

public String userRegiter(@RequestBody User u)

{

return us.userRegister(u);

}

//http://localhost:8080/mcq/adminLogin

@PostMapping(value="adminLogin", consumes = MediaType.APPLICATION\_JSON\_VALUE)

public String adminLogin(@RequestBody Admin u)

{

return as.adminLogin(u);

}

//http://localhost:8080/mcq/adminupdate

@PostMapping(value="adminupdate", consumes = MediaType.APPLICATION\_JSON\_VALUE)

public String adminUpdate(@RequestBody Admin u)

{

return as.adminupdate(u);

}

//http://localhost:8080/mcq/addQuestions

@PostMapping(value="addQuestions", consumes = MediaType.APPLICATION\_JSON\_VALUE)

public String addQuestion(@RequestBody Question q)

{

return as.addQuestion(q);

}

//http://localhost:8080/mcq/addQuiz

@PostMapping(value="addQuiz", consumes = MediaType.APPLICATION\_JSON\_VALUE)

public String addQuiz(@RequestBody Quiz q)

{

return as.addQuiz(q);

}

//http://localhost:8080/mcq/viewAllQuiz

@GetMapping(value="viewAllQuiz", produces= MediaType.APPLICATION\_JSON\_VALUE)

public List<Quiz> viewAllQuiz()

{

return as.viewAllQuiz();

}

//http://localhost:8080/mcq/quizinfo

@GetMapping(value="quizinfo", produces= MediaType.APPLICATION\_JSON\_VALUE)

public Statistics quizinfo()

{

return as.quizInfo();

}

//http://localhost:8080/mcq/viewQuiz

@GetMapping(value="viewQuiz", produces= MediaType.APPLICATION\_JSON\_VALUE)

public List<Object> viewQuiz()

{

return us.viewAllQuiz();

}

//http://localhost:8080/mcq/takeTest

@PostMapping(value="takeTest", consumes = MediaType.APPLICATION\_JSON\_VALUE)

public String takeTest(@RequestBody Test t)

{

return us.takeTest(t);

}

//http://localhost:8080/mcq/getAllTest

@GetMapping(value="getAllTest", produces= MediaType.APPLICATION\_JSON\_VALUE)

public List<Test> getAllTest()

{

return us.getTestList();

}

//http://localhost:8080/mcq/getresult

@GetMapping(value="getresult", produces= MediaType.APPLICATION\_JSON\_VALUE)

public List<Result> getresult()

{

return us.result();

}

//http://localhost:8080/mcq/getAdminResult

@GetMapping(value="getAdminResult", produces= MediaType.APPLICATION\_JSON\_VALUE)

public List<Result> getAdminResult()

{

return us.result();

}

}

OnLineQuizPortal.java:

package com.demo;

import org.springframework.boot.SpringApplication;

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

import org.springframework.data.jpa.repository.config.EnableJpaRepositories;

@SpringBootApplication(scanBasePackages = "com") @EntityScan("com.bean")

@EnableJpaRepositories("com.repository") public class OnlineQuizPortalRestApplication {

public static void main(String[] args) { SpringApplication.run(OnlineQuizPortalRestApplication.class, args);

}

}

AdminRepro.java:

package com.repository;

import org.springframework.data.jpa.repository.JpaRepository;

import com.bean.Admin;

public interface AdminRepo extends JpaRepository<Admin, Integer> {

}

Question.java:

package com.repository;

import org.springframework.data.jpa.repository.JpaRepository; import org.springframework.stereotype.Repository;

import com.bean.Question;

@Repository

public interface Questionrepo extends JpaRepository<Question, Integer> {

}

QuizRepo.java:

package com.repository;

import java.util.List;

import org.springframework.data.jpa.repository.JpaRepository; import org.springframework.data.jpa.repository.Query;

import org.springframework.stereotype.Repository;

import com.bean.Quiz; @Repository

public interface Quizrepo extends JpaRepository<Quiz, Integer>{

@Query("select q.title,count(distinct q.quizno) from Quiz as q group by q.quizno") public List<Object> listOfQuiz();

// @Query("select q.title,count(distinct q.quiz from Quiz as q group by q.quizno")

// public List<Object> viewAllQuiz();

}

TestRepo.java:

package com.repository;

import java.util.List;

import org.springframework.data.jpa.repository.JpaRepository; import org.springframework.data.jpa.repository.Query;

import com.bean.Test;

public interface Testrepo extends JpaRepository<Test, Integer>{

@Query("Select t from Test as t group by t.userid") List<Test> getIndividual();

}

Userrepo.java:

package com.repository;

import org.springframework.data.jpa.repository.JpaRepository; import org.springframework.stereotype.Repository;

import com.bean.User;

@Repository

public interface Userrepo extends JpaRepository<User, Integer>{

public User findByEmailid(String emailid);

}

Admin.java:

package com.service;

import java.util.List;

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

import com.bean.Admin; import com.bean.Question; import com.bean.Quiz;

import com.bean.Result; import com.bean.Statistics; import com.bean.User;

import com.repository.AdminRepo; import com.repository.Questionrepo; import com.repository.Quizrepo; import com.repository.Userrepo;

@Service

public class AdminSer {

@Autowired Questionrepo qr; @Autowired Quizrepo qur; @Autowired Userrepo ur; @Autowired Statistics stat; @Autowired AdminRepo adr;

public String adminLogin(Admin u)

{

Admin ad= adr.findById(1).get();

ord()))

if(u.getUsername().equals(ad.getUsername())&&u.getPassword().equals(ad.getPassw

{

return "Welcome admin";

}

else

{

}

}

return "invalid Credentials";

public String adminupdate(Admin a)

{

Admin ad= adr.findById(1).get(); ad.setUsername(a.getUsername()); ad.setPassword(a.getUsername()); adr.saveAndFlush(ad);

return "Updated";

}

public String addQuestion(Question q)

{

if(q!=null)

{

}

else

{

}

qr.save(q);

return "question added";

return "failed to add";

}

public String addQuiz(Quiz q)

{

if(q!=null)

{

}

else

{

}

}

qur.save(q);

return "quiz added";

return "failed to add";

public List<Quiz> viewAllQuiz()

{

return qur.findAll();

}

public Statistics quizInfo()

{

stat.setUsers(ur.findAll().size()); stat.setQuestions(qr.findAll().size()); stat.setQuiz(qur.listOfQuiz());

return stat;

}

}

User.java:

package com.service;

import java.util.ArrayList; import java.util.Collections; import java.util.List;

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

import com.bean.Result; import com.bean.Test; import com.bean.User;

import com.repository.Quizrepo;

//import com.repository.Resultrepo; import com.repository.Testrepo; import com.repository.Userrepo;

@Service

public class UserSer {

List<Result> finalList=new ArrayList<>(); @Autowired

Userrepo ur; @Autowired Quizrepo qr;

@Autowired Testrepo tr; @Autowired

// Resultrepo resrepo;

// @Autowired User u; @Autowired Test t;

Result r= new Result();

public String userLogin(String email,String password)

{

u=ur.findByEmailid(email); if(u!=null)

{

if(u.getEmailid().equals(email)&&u.getPassword().equals(password))

{

}

else

{

}

return "login sucessfull";

return "invalid credentials";

}

else

{

return "User not found";

}

}

public String userRegister(User u)

{

if(ur.findByEmailid(u.getEmailid())==null)

{

}

else

{

}

}

ur.save(u);

return "registered";

return "User already exists";

public List<Object> viewAllQuiz()

{

return qr.listOfQuiz();

}

public String takeTest(Test t)

{

if(t!=null)

{

}

else

{

}

tr.save(t);

return "submitted";

return "submission failed";

}

public List<Test> getTestList()

{

return tr.findAll();

}

public List<Result> result()

{

String email=""; int mark=0;

List<Test> obj=tr.findAll(); List<User> u= ur.findAll(); for (User user : u) {

mark=0; email=user.getEmailid();

System.out.println(user.getEmailid());

for(Test ob :obj)

{

if(user.getUid()==ob.getUserid().getUid())

{

if(ob.getTestans()==ob.getQuestionid().getAns())

{

mark++;

}

System.out.println("inside"+mark);

}

}

System.out.println("outside"+mark);

finalList.add(new Result(email,mark));

}

System.out.println("final :"+mark);

Collections.sort(finalList);

return finalList;

}

}

Application.properties:

Spring.application.name=Online\_Quiz spring.jpa.hibernate.ddl-auto=update spring.datasource.url=jdbc:mysql://localhost:3306/mcq spring.datasource.username=root spring.datasource.password=faizal123

spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver spring.jpa.show-sql: true spring.jpa.properties.hibernate.format\_sql=true logging.level.org.hibernate.SQL=DEBUG logging.level.org.hibernate.type=TRACE