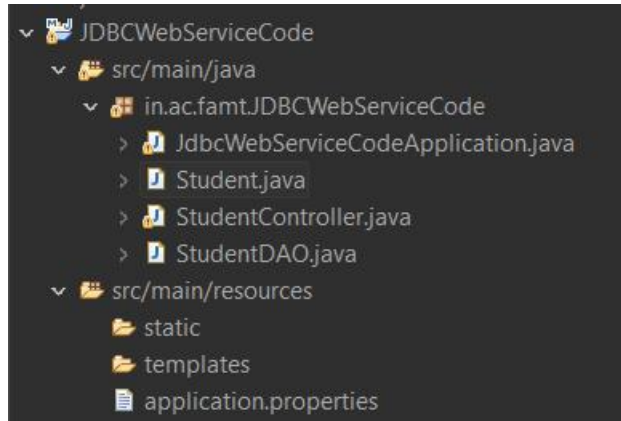


Q.2 Demonstrate the use of the Spring Boot project for saving the student's data in the Student table.

Implementation:



Code:

Student.java

```
package in.ac.famt.JDBCWebServiceCode;

public class Student {
    int rollNo;
    String studNm;
    double mrks1, mrks2, mrks3;
    public int getRollNo() {
        return rollNo;
    }
    public void setRollNo(int rollNo) {
        this.rollNo = rollNo;
    }
    public String getStudNm() {
        return studNm;
    }
    public void setStudNm(String studNm) {
        this.studNm = studNm;
    }
    public double getMrks1() {
        return mrks1;
    }
    public void setMrks1(double mrks1) {
        this.mrks1 = mrks1;
    }
    public double getMrks2() {
        return mrks2;
    }
    public void setMrks2(double mrks2) {
        this.mrks2 = mrks2;
    }
    public double getMrks3() {
        return mrks3;
    }
    public void setMrks3(double mrks3) {
        this.mrks3 = mrks3;
    }
    @Override
    public String toString() {
```

```

        return "Student [rollNo=" + rollNo + ", studNm=" + studNm + ",
mrks1=" + mrks1 + ", mrks2=" + mrks2 + ", mrks3="
        + mrks3 + "]";
    }
    public Student(int rollNo, String studNm, double mrks1, double mrks2, double
mrks3) {
        super();
        this.rollNo = rollNo;
        this.studNm = studNm;
        this.mrks1 = mrks1;
        this.mrks2 = mrks2;
        this.mrks3 = mrks3;
    }
    public Student() {
        super();
        this.rollNo = 0;
        this.studNm = "";
        this.mrks1 = 0.0;
        this.mrks2 = 0.0;
        this.mrks3 = 0.0;
    }
}

```

StudentController.java

```
package in.ac.famt.JDBCWebServiceCode;
```

```
import java.net.URI;
import java.util.List;
import java.util.Map;
```

```
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.http.ResponseEntity;
import org.springframework.stereotype.Service;
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.RestController;
import org.springframework.web.servlet.support.ServletUriComponentsBuilder;
```

```
@RestController
```

```
public class StudentController {
```

```
    @Autowired
    StudentDAO stud;
```

```
    @GetMapping("/std")
    public List<Map<String, Object>> displayRec(){
        return stud.getAllStudents();
    }

```

```
    @PostMapping("/student")
    public ResponseEntity<Object> insertStudent(@RequestBody Student std){
        int cnt = stud.saveStudInfo(std);
        if(cnt != 0) {
            URI currentID = ServletUriComponentsBuilder
                .fromCurrentRequest()

```

```

        .path("/{rollNo}")
        .buildAndExpand(std.getRollNo())
        .toUri();
    return ResponseEntity.created(currentID).build();
}
else {
    return ResponseEntity.internalServerError().build();
}
}

@GetMapping("/std/marks")
public List<String> displayMarks(){
    return stud.calTotal();
}
}

```

StudentDAO.java

```
package in.ac.famt.JDBCWebServiceCode;
```

```
import java.util.ArrayList;
import java.util.List;
import java.util.Map;
```

```
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.jdbc.core.JdbcTemplate;
import org.springframework.stereotype.Service;
```

```
@Service
```

```
public class StudentDAO {
```

```
    private final JdbcTemplate jdbcTemplate;
```

```
    @Autowired
```

```
    public StudentDAO(JdbcTemplate jdbcTemplate) {
```

```
        super();
```

```
        this.jdbcTemplate = jdbcTemplate;
```

```
    }
```

```
    public int saveStudInfo(Student s) {
```

```
        String sql = "INSERT INTO student
```

```
Values("+s.getRollNo()+","+s.getStudNm()+","+s.getMrks1()+","+s.getMrks2()+","+s.getMrks3()+")";
```

```
        return jdbcTemplate.update(sql);
```

```
    }
```

```
    public List<Map<String, Object>> getAllStudents(){
```

```
        String sql = "Select * from student";
```

```
        return jdbcTemplate.queryForList(sql);
```

```
    }
```

```
    public List<String> calTotal(){
```

```
        String sql = "Select * from student";
```

```
        List<Map<String, Object>> stdlist = jdbcTemplate.queryForList(sql);
```

```
        List<String> mkList = new ArrayList<String>();
```

```
        String str = "";
```

```
        for(int i = 0; i<stdlist.size(); i++) {
```

```
            Map<String, Object> stdElt = stdlist.get(i);
```

```
            int sid = (int)stdElt.get("rollNo");
```

```

        String snm = (String)stdElt.get("stdNm");
        double sm1 = (double)stdElt.get("mrks1");
        double sm2 = (double)stdElt.get("mrks2");
        double sm3 = (double)stdElt.get("mrks3");

        str = "Student Details: "+sid+" " +snm+" "+ " " + (sm1 + sm2 +
sm3) +" ";

        mkList.add(str);
    }
    return mkList;
}
}

```

JdbcWebServiceCodeApplication.java

```
package in.ac.famt.JDBCWebServiceCode;
```

```

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;
import org.springframework.context.ApplicationContext;

```

```

import in.ac.famt.JDBCWebServiceCode.JdbcWebServiceCodeApplication;
import in.ac.famt.JDBCWebServiceCode.Student;
import in.ac.famt.JDBCWebServiceCode.StudentDAO;

```

```
@SpringBootApplication
```

```
public class JdbcWebServiceCodeApplication {
```

```

    public static void main(String[] args) {
        ApplicationContext con =
SpringApplication.run(JdbcWebServiceCodeApplication.class, args);
        // SpringApplication.run(JdbcWebServiceApplication.class, args);
        StudentDAO studDAO = con.getBean(StudentDAO.class);
        Student std = new Student(37,"Onkar",99.0,98.0,100.0);
        int rowcnt = studDAO.saveStudInfo(std);
        if(rowcnt != 0) {
            System.out.println("Student data saved...");
        }else {
            System.out.println("Student data not Saved....");
        }
        System.out.println("Following is List of the Student:");
        System.out.println(studDAO.getAllStudents());
        System.out.println(studDAO.calTotal());
    }
}

```

Output:

```

Student data saved...
Following is List of the Student:
[{rollNo=37, stdNm=Onkar, mrks1=99.0, mrks2=98.0, mrks3=100.0}, {rollNo=
[Student Details: 37 Onkar 297.0 , Student Details: 37 Onkar 297.0 , Stu

```