

## HOSTEL MANAGEMENT

### feesDiscountDetails.properties

```
feesDiscount.map={'O':50, 'D':40, 'A':30, 'B':20}
```

### StudentBO.java

```
package com.spring.bo;

import org.springframework.context.ApplicationContext;
import org.springframework.context.annotation.AnnotationConfigApplicationContext;
import org.springframework.stereotype.Component;

import com.spring.config.ApplicationConfig;
import com.spring.model.FeesDiscountDetails;
import com.spring.model.Student;

//use appropriate annotation to make this class as component class
@Component
public class StudentBO {

    public float calculateFee(Student obj) {

        ApplicationContext context = new
AnnotationConfigApplicationContext(ApplicationConfig.class);

        FeesDiscountDetails fd = context.getBean(FeesDiscountDetails.class);

        float fee = obj.getHostel().getRent();

        if (fd.getFeesDiscount().keySet().contains(Character.toString(obj.getGrade())))

            fee -= (fee * fd.getFeesDiscount().get(Character.toString(obj.getGrade()))) /
100);

        return fee;

    }

}
```

### ApplicationConfig.java

```
package com.spring.config;
```

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

```
import org.springframework.context.annotation.ComponentScan;
```

```
import org.springframework.context.annotation.Configuration;
```

```
import org.springframework.context.annotation.PropertySource;
```

```
import com.spring.bo.StudentBO;
```

```
import com.spring.model.FeesDiscountDetails;
```

```
import com.spring.model.Hostel;
```

```
import com.spring.model.Student;
```

```
import com.spring.service.StudentService;
```

```
@Configuration
```

```
@PropertySource("feesDiscountDetails.properties")
```

```
@ComponentScan
```

```
public class ApplicationConfig {
```

```
    @Bean
```

```
    public FeesDiscountDetails feesDiscountDetails() {
```

```
        FeesDiscountDetails feesDiscountDetails = new FeesDiscountDetails();
```

```
        return feesDiscountDetails;
```

```
    }
```

```
    @Bean
```

```
    public Hostel hostel() {
```

```
        Hostel hostel = new Hostel();
```

```
        return hostel;
```

```
    }
```

```
    @Bean
```

```
    public Student student() {
```

```
        Student student = new Student(hostel());  
        return student;  
    }  
}
```

```
@Bean  
public StudentBO studentBO() {  
    StudentBO studentBO = new StudentBO();  
    return studentBO;  
}
```

```
@Bean  
public StudentService studentService() {  
    StudentService studentService = new StudentService(studentBO());  
    return studentService;  
}
```

```
}
```

### **InvalidGradeException.java**

```
package com.spring.exception;
```

```
public class InvalidGradeException extends Exception {
```

```
    public InvalidGradeException(String msg) {  
        super(msg);  
    }  
}
```

```
}
```

### **Driver.java**

```
package com.spring.main;
```

```
import java.util.Scanner;
```

```

import org.springframework.context.ApplicationContext;
import org.springframework.context.annotation.AnnotationConfigApplicationContext;

import com.spring.config.ApplicationConfig;
import com.spring.exception.InvalidGradeException;
import com.spring.service.StudentService;

public class Driver {

    public static void main(String[] args) {

        ApplicationContext context = new
AnnotationConfigApplicationContext(ApplicationConfig.class);

        StudentService studentService = context.getBean(StudentService.class);

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter the student name:");

        String name = sc.nextLine();

        System.out.println("Enter the admission number:");

        String admissionNo = sc.nextLine();

        System.out.println("Enter the grade:");

        char grade = sc.nextLine().charAt(0);

        System.out.println("Enter the hostel details");

        System.out.println("Enter the hostel name:");

        String hostelName = sc.nextLine();

        System.out.println("Enter the room rent:");

        float rent = sc.nextFloat();

        try {

            System.out.println(

                "Hostel fee is Rs:" + studentService.calculateFee(name,
admissionNo, grade, hostelName, rent));

        } catch (InvalidGradeException e) {

            System.out.println(e.getMessage());

        }

    }

}

```

```

        }

    }

}

```

## **FeesDiscountDetails.java**

```

package com.spring.model;

import java.util.Map;

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

//pojo class with required attributes, getters and setters
//use appropriate annotation to make this class as component class
@Component
public class FeesDiscountDetails {

    @Value("#{${feesDiscount.map}}")
    private Map<String, Integer> feesDiscount;

    public Map<String, Integer> getFeesDiscount() {
        return feesDiscount;
    }

    public void setFeesDiscount(Map<String, Integer> feesDiscount) {
        this.feesDiscount = feesDiscount;
    }

    @Override
    public String toString() {
        return "FeesDiscountDetails [feesDiscount=" + feesDiscount + "]";
    }
}

```

```
}
```

```
}
```

## Hostel.java

```
package com.spring.model;
```

```
import org.springframework.stereotype.Component;
```

```
//pojo class with required attributes, getters and setters
```

```
//use appropriate annotation to make this class as component class
```

```
@Component
```

```
public class Hostel {
```

```
    private String hostelName;
```

```
    private float rent;
```

```
    public String getHostelName() {
```

```
        return hostelName;
```

```
    }
```

```
    public void setHostelName(String hostelName) {
```

```
        this.hostelName = hostelName;
```

```
    }
```

```
    public float getRent() {
```

```
        return rent;
```

```
    }
```

```
    public void setRent(float rent) {
```

```
        this.rent = rent;
```

```
    }
```

```
    @Override
```

```
    public String toString() {
```

```
        return "Hostel [hostelName=" + hostelName + ", rent=" + rent + "];"
```

```
}
```

```
}
```

## **Student.java**

```
package com.spring.model;
```

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

```
import org.springframework.stereotype.Component;
```

```
//pojo class with required attributes, getters and setters
```

```
//use appropriate annotation to make this class as component class
```

```
@Component
```

```
public class Student {
```

```
    private String name;
```

```
    private String admissionNo;
```

```
    private char grade;
```

```
    private Hostel hostel;
```

```
    @Autowired
```

```
    public Student(Hostel hostel) {
```

```
        super();
```

```
        this.hostel = hostel;
```

```
    }
```

```
    public Hostel getHostel() {
```

```
        return hostel;
```

```
    }
```

```
    public void setHostel(Hostel hostel) {
```

```
        this.hostel = hostel;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public String getAdmissionNo() {
        return admissionNo;
    }

    public void setAdmissionNo(String admissionNo) {
        this.admissionNo = admissionNo;
    }

    public char getGrade() {
        return grade;
    }

    public void setGrade(char grade) {
        this.grade = grade;
    }

    @Override
    public String toString() {
        return "Student [name=" + name + ", admissionNo=" + admissionNo + ", grade=" +
grade + ", hostel=" + hostel
```



```
        + "];  
    }  
  
}
```

## **StudentService.java**

```
package com.spring.service;  
  
import org.springframework.beans.factory.annotation.Autowired;  
import org.springframework.context.ApplicationContext;  
import org.springframework.context.annotation.AnnotationConfigApplicationContext;  
import org.springframework.stereotype.Component;  
  
import com.spring.bo.StudentBO;  
import com.spring.config.ApplicationConfig;  
import com.spring.exception.InvalidGradeException;  
import com.spring.model.Student;  
  
//use appropriate annotation to make this class as component class  
@Component  
public class StudentService {  
  
    public StudentBO getStudentBOObj() {  
        return studentBOObj;  
    }  
  
    public void setStudentBOObj(StudentBO studentBOObj) {  
        this.studentBOObj = studentBOObj;  
    }  
  
    private StudentBO studentBOObj;
```

```

// fill the code

@Autowired

public StudentService(StudentBO studentBOObj) {

    super();

    this.studentBOObj = studentBOObj;

}

    public float calculateFee(String name, String admissionNo, char grade, String hostelName,
float rent)

        throws InvalidGradeException {

    String validChars = "ODABCF";

    if (!validChars.contains(Character.toString(grade))) {

        throw new InvalidGradeException("Invalid Grade");

    }

    ApplicationContext context = new
AnnotationConfigApplicationContext(ApplicationConfig.class);

    Student student = context.getBean(Student.class);

    student.setName(name);

    student.setAdmissionNo(admissionNo);

    student.setGrade(grade);

    student.getHostel().setHostelName(hostelName);

    student.getHostel().setRent(rent);

    return this.studentBOObj.calculateFee(student);

}

}

```

## POM.XML

```

<project xmlns="http://maven.apache.org/POM/4.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-
4.0.0.xsd">

    <modelVersion>4.0.0</modelVersion>

    <groupId>HostelManagement</groupId>

```

```
<artifactId>HostelManagement</artifactId>
<version>0.0.1-SNAPSHOT</version>
<dependencies>
    <dependency>
        <groupId>org.springframework</groupId>
        <artifactId>spring-context</artifactId>
        <version>4.3.10.RELEASE</version>
    </dependency>

    <dependency>
        <groupId>junit</groupId>
        <artifactId>junit</artifactId>
        <version>4.12</version>
        <scope>test</scope>
    </dependency>

    <dependency>
        <groupId>xmlunit</groupId>
        <artifactId>xmlunit</artifactId>
        <version>1.6</version>
        <scope>test</scope>
    </dependency>

    <!-- https://mvnrepository.com/artifact/com.github.stefanbirkner/system-rules -->
    <dependency>
        <groupId>com.github.stefanbirkner</groupId>
        <artifactId>system-rules</artifactId>
        <version>1.16.0</version>
        <scope>test</scope>
    </dependency>
```

```

<dependency>
    <groupId>com.sun.xml.bind</groupId>
    <artifactId>jaxb-impl</artifactId>
    <version>2.1.13</version>
</dependency>
<!-- Thanks for using https://jar-download.com -->

<!-- https://mvnrepository.com/artifact/javax.xml.bind/jaxb-api -->
<dependency>
    <groupId>javax.xml.bind</groupId>
    <artifactId>jaxb-api</artifactId>
    <version>2.1</version>
</dependency>

</dependencies>

<build>
    <plugins>
        <plugin>
            <groupId>org.apache.maven.plugins</groupId>
            <artifactId>maven-surefire-plugin</artifactId>
            <version>3.0.0-M1</version>
            <configuration>
                <testFailureIgnore>true</testFailureIgnore>
            </configuration>
        </plugin>
    </plugins>
</build>

```

</plugins>

</build>

<properties>

<maven.compiler.source>1.8</maven.compiler.source>

<maven.compiler.target>1.8</maven.compiler.target>

</properties>

</project>