TASK 5:-STUDENT MANAGEMENT SYSTEM:-

import java.util.ArrayList;

import java.util.Scanner;

class Student {

private String name;

private int rollNumber;

private char grade;

public Student(String name, int rollNumber, char grade) {

this.name = name;

this.rollNumber = rollNumber;

this.grade = grade;

}

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public int getRollNumber() {

return rollNumber;

}

public void setRollNumber(int rollNumber) {

this.rollNumber = rollNumber;

}

public char getGrade() {

return grade;

}

public void setGrade(char grade) {

this.grade = grade;

}

@Override

public String toString() {

return "Name: " + name + ", Roll Number: " + rollNumber + ", Grade: " + grade;

}

}

class StudentManagementSystem {

private ArrayList<Student> students;

public StudentManagementSystem() {

students = new ArrayList<>();

}

public void addStudent(Student student) {

students.add(student);

}

public void removeStudent(int rollNumber) {

students.removeIf(student -> student.getRollNumber() == rollNumber);

}

public Student searchStudent(int rollNumber) {

for (Student student : students) {

if (student.getRollNumber() == rollNumber) {

return student;

}

}

return null;

}

public void displayAllStudents() {

for (Student student : students) {

System.out.println(student);

}

}

}

public class StudentManagementSystemUI {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

StudentManagementSystem sms = new StudentManagementSystem();

int choice;

do {

System.out.println("Student Management System");

System.out.println("1. Add Student");

System.out.println("2. Remove Student");

System.out.println("3. Search Student");

System.out.println("4. Display All Students");

System.out.println("5. Exit");

System.out.print("Enter your choice: ");

choice = scanner.nextInt();

switch (choice) {

case 1:

System.out.print("Enter name: ");

String name = scanner.nextLine();

System.out.print("Enter roll number: ");

int rollNumber = scanner.nextInt();

System.out.print("Enter grade: ");

char grade = scanner.next().charAt(0);

sms.addStudent(new Student(name, rollNumber, grade));

break;

case 2:

System.out.print("Enter roll number to remove: ");

int rollToRemove = scanner.nextInt();

sms.removeStudent(rollToRemove);

break;

case 3:

System.out.print("Enter roll number to search: ");

int rollToSearch = scanner.nextInt();

Student foundStudent = sms.searchStudent(rollToSearch);

if (foundStudent != null) {

System.out.println(foundStudent);

} else {

System.out.println("Student not found.");

}

break;

case 4:

sms.displayAllStudents();

break;

case 5:

System.out.println("Exiting...");

break;

default:

System.out.println("Invalid choice.");

}

} while (choice != 5);

scanner.close();

}

}

OUTPUT:-

Student Management System

1. Add Student

2. Remove Student

3. Search Student

4. Display All Students

5. Exit

Enter your choice: 1

Enter name: Enter roll number: 1

Enter grade: A

Student Management System

1. Add Student

2. Remove Student

3. Search Student

4. Display All Students

5. Exit

Enter your choice: 2

Enter roll number to remove: 3

Student Management System

1. Add Student

2. Remove Student

3. Search Student

4. Display All Students

5. Exit

Enter your choice: 3

Enter roll number to search: 1

Name: , Roll Number: 1, Grade: A

Student Management System

1. Add Student

2. Remove Student

3. Search Student

4. Display All Students

5. Exit