



EAST WEST UNIVERSITY

Mini Project

Course:CSE 207

Sec:3

Submitted By:Nuran Farhana Prova

Student Id: 2023-1-60-075

Program Name: Object-Oriented Programming(Data Structure)

Date: 29/5/2024

Submitted to:

Dr. Anup Kumar Paul

Associate professor,

Department of Computer Science and Engineering

NodeClass:

```
package LABproject;
public class Node {
    String name;
    int rollNumber;
    String course;
    int totalMarks;
    Node next;
    public Node(String name, int rollNumber, String course, int totalMarks,
Node next) {
        this.name = name;
        this.rollNumber = rollNumber;
        this.course = course;
        this.totalMarks = totalMarks;
        this.next = next;
    }
}
```

StudentManagementSystem:

```
package LABproject;
public class StudentRecordSystem {
    Node head;
    public boolean checkRecord(int rollNumber) {
        Node current = head;
        while (current != null) {
            if (current.rollNumber == rollNumber) {
                return true;
            }
            current = current.next;
        }
        return false;
    }
}
```

```

    public void insertRecord(String name, int rollNumber, String course, int
totalMarks) {
        if (!checkRecord(rollNumber)) {
            Node newNode = new Node(name, rollNumber, course, totalMarks,
head);
            if (head == null || head.rollNumber > rollNumber) {
                newNode.next = head;
                head = newNode;
            } else {
                Node current = head;
                while (current.next != null && current.next.rollNumber <
rollNumber) {
                    current = current.next;
                }
                newNode.next = current.next;
                current.next = newNode;
            }
            System.out.println("Record added successfully.");
        } else {
            System.out.println("Record with the same roll number already
exists.");
        }
    }

    public Node searchRecord(int rollNumber) {
        Node current = head;
        while (current != null) {
            if (current.rollNumber == rollNumber) {
                return current;
            }
            current = current.next;
        }
        return null;
    }

    public int deleteRecord(int rollNumber) {
        if (head == null) {

```

```

        System.out.println("No record to delete.");
        return -1;
    }
    if (head.rollNumber == rollNumber) {
        head = head.next;
        System.out.println("Record deleted successfully.");
        return 0;
    }
    Node current = head;
    while (current.next != null) {
        if (current.next.rollNumber == rollNumber) {
            current.next = current.next.next;
            System.out.println("Record deleted successfully.");
            return 0;
        }
        current = current.next;
    }
    System.out.println("Record not found.");
    return -1;
}

public void ShowRecords() {
    if (head == null) {
        System.out.println("No record here.");
        return;
    }
    Node current = head;
    while (current != null) {
        System.out.println("Name: " + current.name);
        System.out.println("Roll Number: " + current.rollNumber);
        System.out.println("Course: " + current.course);
        System.out.println("Total Marks: " + current.totalMarks);
        System.out.println("-----");
        current = current.next;
    }
}
}

```

```
}
```

Main Class:

```
package LABproject;
import java.util.Scanner;
public class Main {
    public static void main(String[] args) {
        StudentRecordSystem srs = new StudentRecordSystem();
        Scanner scanner = new Scanner(System.in);
        int choice;
        do {
            System.out.println("\nStudent Record System");
            System.out.println("1. Add Record");
            System.out.println("2. Search Record");
            System.out.println("3. Delete Record");
            System.out.println("4. Show All Records");
            System.out.println("5. Exit");
            System.out.print("Enter your choice: ");
            choice = scanner.nextInt();
            scanner.nextLine(); // Consume newline
            switch (choice) {
                case 1:
                    System.out.print("Enter student name: ");
                    String name = scanner.nextLine();
                    System.out.print("Enter roll number: ");
                    int rollNumber = scanner.nextInt();
                    scanner.nextLine(); // Consume newline
                    System.out.print("Enter course: ");
                    String course = scanner.nextLine();
                    System.out.print("Enter total marks: ");
                    int totalMarks = scanner.nextInt();
                    srs.insertRecord(name, rollNumber, course, totalMarks);
                    break;
                case 2:
                    System.out.print("Enter roll number to search: ");
```

```

        int searchRollNumber = scanner.nextInt();
        Node found = srs.searchRecord(searchRollNumber);
        if (found != null) {
            System.out.println("Record Found:");
            System.out.println("Name: " + found.name);
            System.out.println("Roll Number: " + found.rollNumber);
            System.out.println("Course: " + found.course);
            System.out.println("Total Marks: " + found.totalMarks);
        } else {
            System.out.println("Record not found.");
        }
        break;
    case 3:
        System.out.print("Enter roll number to delete: ");
        int deleteRollNumber = scanner.nextInt();
        srs.deleteRecord(deleteRollNumber);
        break;
    case 4:
        srs.ShowRecords();
        break;
    case 5:
        System.out.println("Exiting...");
        break;
    default:
        System.out.println("Invalid choice. Please try again.");
    }
} while (choice != 5);
scanner.close();
}
}

```

Output:

CREATING STUDENT RECORDS:

```
<terminated> Main (23) [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (May 28, 2024, 1:38:59 PM – 1:40:35 PM) [pid: 2540]

Student Record System
1. Add Record
2. Search Record
3. Delete Record
4. Show All Records
5. Exit
Enter your choice: 1
Enter student name: Nuran
Enter roll number: 2076
Enter course: CSE
Enter total marks: 99
Record added successfully.

Student Record System
1. Add Record
2. Search Record
3. Delete Record
4. Show All Records
5. Exit
Enter your choice: 1
Enter student name: Fahima
Enter roll number: 3421
Enter course: History
Enter total marks: 90
Record added successfully.

Student Record System
1. Add Record
2. Search Record
3. Delete Record
4. Show All Records
5. Exit
Enter your choice: 1
Enter student name: Mahi
Enter roll number: 2467
Enter course: IR
Enter total marks: 76
Record added successfully.

Student Record System
```

WRONG OPTION:

```
Student Record System
1. Add Record
2. Search Record
3. Delete Record
4. Show All Records
5. Exit
Enter your choice: 6
Invalid choice. Please try again.
```

SHOW RECORDS:

```
Student Record System
1. Add Record
2. Search Record
3. Delete Record
4. Show All Records
5. Exit
Enter your choice: 4
Name: Nuran
Roll Number: 2076
Course: CSE
Total Marks: 99
-----
Name: Mahi
Roll Number: 2467
Course: IR
Total Marks: 76
-----
Name: Fahima
Roll Number: 3421
Course: History
Total Marks: 90
```

SEARCHING RECORDS:

```
-----
Student Record System
1. Add Record
2. Search Record
3. Delete Record
4. Show All Records
5. Exit
Enter your choice: 2
Enter roll number to search: 2467
Record Found:
Name: Mahi
Roll Number: 2467
Course: IR
Total Marks: 76

Student Record System
1. Add Record
2. Search Record
3. Delete Record
4. Show All Records
5. Exit
Enter your choice: 3
Enter roll number to delete: 3421
Record deleted successfully.
```


EXITING THE RECORD SYSTEM:

```
Record deleted successfully.
```

```
Student Record System
```

```
1. Add Record
```

```
2. Search Record
```

```
3. Delete Record
```

```
4. Show All Records
```

```
5. Exit
```

```
Enter your choice: 5
```

```
Exiting...
```

```
<
```

RECORD NOT FOUND AFTER PUTTING WRONG ID:

```
Student Record System
```

```
1. Add Record
```

```
2. Search Record
```

```
3. Delete Record
```

```
4. Show All Records
```

```
5. Exit
```

```
Enter your choice: 2
```

```
Enter roll number to search: 100
```

```
Record not found.
```