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PRN- 21070126032
Batch- AIML A2
Java Lab Assignment 3

Github Link :

Code –

Class Student :

```
import java.util.ArrayList;
```

```
public class Student {
```

```
    private int prn;
```

```
    private String name;
```

```
    private String dob;
```

```
    private double marks;
```

```
    public Student(int prn, String name, String dob, double marks) {
```

```
        this.prn = prn;
```

```
        this.name = name;
```

```
        this.dob = dob;
```

```
        this.marks = marks;
```

```
    }
```

```
    public int getPrn() {
```

```
        return prn;
```

```
    }
```

```
    public void setPrn(int prn) {
```

```
        this.prn = prn;
```

```
    }
```

```
public String getName() {  
    return name;  
}
```

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

```
public String getDob() {  
    return dob;  
}
```

```
public void setDob(String dob) {  
    this.dob = dob;  
}
```

```
public double getMarks() {  
    return marks;  
}
```

```
public void setMarks(double marks) {  
    this.marks = marks;  
}  
}
```

Class Student_Functions :

```
import java.util.Scanner;  
import java.util.ArrayList;  
class student_functions {  
    ArrayList<Student> student_list = new ArrayList<Student>();  
  
    public void print_student(int i)
```

```

    {
        System.out.print("Name: " + student_list.get(i).getName()+" | ");
        System.out.print("PRN: " + student_list.get(i).getPrn()+" | ");
        System.out.print("DOB: " + student_list.get(i).getDob()+" | ");
        System.out.print("Marks: " +student_list.get(i).getMarks()+" | WnWn");
    }

    public void add_student() {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the number of students to be added: ");
        int n = sc.nextInt();
        for (int i = 0; i < n; i++) {
            System.out.println("Enter the details of the student in the following
format: PRN, Name, Date of Birth (dd/mm/yyyy), Marks");
            String details = sc.next();

            String[] details_array = details.split(",");
            int prn = Integer.parseInt(details_array[0]);
            String name = details_array[1];
            String dob_string = details_array[2];
            int marks = Integer.parseInt(details_array[3]);
            Student new_student = new Student(prn, name, dob_string, marks);
            student_list.add(new_student);
        }
    }

    public void display() {
        for (int i = 0; i < student_list.size(); i++) {
            print_student(i);
        }
    }

    public void search(){
        System.out.println("Select the search criteria: ");
    }

```

```

System.out.println("1. PRN");
System.out.println("2. Name");
System.out.println("3. Position");
Scanner sc = new Scanner(System.in);
int choice = sc.nextInt();
switch (choice) {
    case 1 -> {
        System.out.println("Enter the PRN to be searched: ");
        int prn = sc.nextInt();
        for (int i = 0; i < student_list.size(); i++) {
            if (student_list.get(i).getPrn() == prn) {
                print_student(i);
            }
        }
    }
    case 2 -> {
        System.out.println("Enter the Name to be searched: ");
        String name = sc.next();
        for (int i = 0; i < student_list.size(); i++) {
            if (student_list.get(i).getName() == name) {
                print_student(i);
            }
        }
    }
    case 3 -> { //position
        System.out.println("Enter the Position to be searched: ");
        int position = sc.nextInt();
        for (int i = 0; i < student_list.size(); i++) {
            if (i == position) {
                print_student(i);
            }
        }
    }
}

```

```

        }

        default -> System.out.println("Invalid choice");
    }
}

public void update(){
    System.out.println("Enter the PRN of the student to be updated: ");
    Scanner sc = new Scanner(System.in);

    int prn = sc.nextInt();

    for (int i = 0; i < student_list.size(); i++) {
        if (student_list.get(i).getPrn() == prn) {
            System.out.println("Enter the details of the student in the following format: PRN,
Name, Date of Birth (dd/mm/yyyy), Marks");

            String details = sc.next();
            String[] details_array = details.split(",");

            int prn_new = Integer.parseInt(details_array[0]);
            String name_new = details_array[1];
            String dob_string_new = details_array[2];
            int marks_new = Integer.parseInt(details_array[3]);

            Student new_student = new Student(prn_new, name_new, dob_string_new, marks_new);
            student_list.set(i, new_student);
        }
    }
}

public void delete(){
    System.out.println("Enter the PRN of the student to be deleted: ");
    Scanner sc = new Scanner(System.in);

    int prn = sc.nextInt();

    for (int i = 0; i < student_list.size(); i++) {
        if (student_list.get(i).getPrn() == prn) {
            System.out.println("Student named: "+ student_list.get(i).getName() + " deleted
successfully");

```



```

        break;

    case 3:

        student_functions_object.search();

        break;

    case 4:

        student_functions_object.update();

        break;

    case 5:

        student_functions_object.delete();

        break;

    default:

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

    }

    if(choice==0){

        break;

    }

}

}

```

Output :

```

C:\Users\HP\.jdk\openjdk-19.0.1\bin\java.exe "-javaagent:D:\IntelliJ IDEA 2022.3.1\lib\idea_rt.jar=57659
Select the operation to modify database:
0. Exit
1. Add student details
2. Display all
3. Search student
4. Update Details
5. Delete record
1
Enter the number of students to be added:
2
Enter the details of the student in the following format: PRN, Name, Date of Birth (dd/mm/yyyy), Marks
32,harsh,07/08/2002,65
Enter the details of the student in the following format: PRN, Name, Date of Birth (dd/mm/yyyy), Marks
03,bhavya,04/02/2002,54

```

Select the operation to modify database:

- 0. Exit
- 1. Add student details
- 2. Display all
- 3. Search student
- 4. Update Details
- 5. Delete record

2

Name: harsh | PRN: 32 | DOB: 07/08/2002 | Marks: 65.0 |

Name: bhavya | PRN: 3 | DOB: 04/02/2002 | Marks: 54.0 |

Select the operation to modify database:

- 0. Exit
- 1. Add student details
- 2. Display all
- 3. Search student
- 4. Update Details
- 5. Delete record

3

Select the search criteria:

- 1. PRN
- 2. Name
- 3. Position

1

Enter the PRN to be searched:

32

Name: harsh | PRN: 32 | DOB: 07/08/2002 | Marks: 65.0 |