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***PRN- 21070126032***

***Batch- AIML A2***

***Java Lab Assignment 3***

***Github Link :*** https://github.com/Harsh-Ratna/Java-Programs/tree/main/java%20programming%20lab%203

***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()+" | \n\n");

}

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");

student\_list.remove(i);

}

}

}

}

Class Main:

import java.util.\*;

public class Main {

public static void main(String[] args)

{

student\_functions student\_functions\_object = new student\_functions();

// menu for add, display, search, update, delete

while(true){

System.out.println("Select the operation to modify database: ");

System.out.println("0. Exit");

System.out.println("1. Add student details");

System.out.println("2. Display all");

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

System.out.println("4. Update Details");

System.out.println("5. Delete record");

Scanner sc = new Scanner(System.in);

int choice = sc.nextInt();

switch(choice){

case 0:

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

break;

case 1:

student\_functions\_object.add\_student();

break;

case 2:

student\_functions\_object.display();

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;

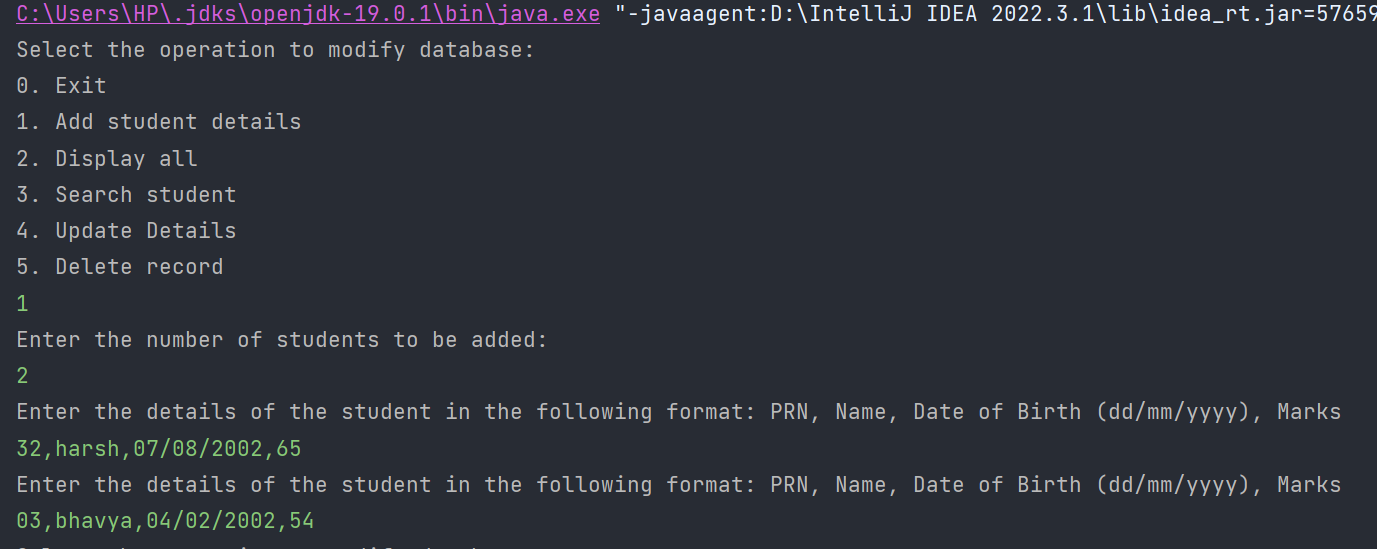
}

}

}

}

**Output :**

****

**Text

Description automatically generated**

Text

Description automatically generated