LabTasks:03

Q1:

```java
package Q1;
public class Stadium {  4 usages
    String name;  2 usages
    String city;  4 usages
    int capacity;  3 usages
    int matches_Scheduled;  2 usages
    public void scheduleMatch()  2 usages
    {
        matches_Scheduled++;
        System.out.println("Match successfully Scheduled !!");
    };
    public void display_details()  2 usages
    {
        System.out.println("name:"+city);
        System.out.println("city: "+city);
        System.out.println("capacity: "+capacity);
        System.out.println("matches scheduled "+matches_Scheduled);

    }

}
```

```java
package Q1;

import java.util.*;
public class main_1 {
    public static void main(String[] args) {
        System.out.println("Welcome to Champions Trophy 2025" );
        Stadium s1= new Stadium();
        Stadium s2= new Stadium();
        Scanner a=new Scanner(System.in);
        System.out.println("Enter Details for Stadium 1 ");
        System.out.println("Enter Stadium Name:");
        s1.name=a.nextLine();
        System.out.println("Enter the city name:");
        s1.city=a.nextLine();
        System.out.println("Enter the capacity:");
        s1.capacity=a.nextInt();
        a.nextLine();
        System.out.println("Enter Details for Stadium 2 ");
        System.out.println("Enter Stadium Name:");
        s2.name=a.nextLine();
        System.out.println("Enter the city name:");
        s2.city=a.nextLine();
        System.out.println("Enter the capacity:");
        s2.capacity=a.nextInt();
        int temp=0;
```

```
        int temp=0;
        do {
            System.out.println("1) Schedule Match:");
            System.out.println("2) Display Details");
            System.out.println("3) Exit");
            System.out.println("Enter your choice:");
            int choice=a.nextInt();
            switch(choice)
            {
                case 1:
                {
                    System.out.println("Which Stadium u want to choose \n 1) Stadium 1 \n 2) Stadium 2 ");
                    int select=a.nextInt();
                    if(select==1)
                    {
                        s1.scheduleMatch();
                        break;
                    } else if (select==2) {
                        s2.scheduleMatch();
                        break;
                    }
                    else {
                        System.out.println("invalid option");
                        break;
                    }

                }
                case 2:
                {
                    s1.display_details();
                    s2.display_details();
                    break;
```

```
                    }
                    case 2:
                    {
                        s1.display_details();
                        s2.display_details();
                        break;
                    }
                    default:
                    {
                        temp=3;
                        break;
                    }
                }

            }while(temp !=3);
        }
    }
```

Output:

```
"C:\Program Files\Java\jdk-23\bin\java.exe" "-javaag
Welcome to Champions Trophy 2025
Enter Details for Stadium 1
Enter Stadium Name:
National Stadium
Enter the city name:
karachi
Enter the capacity:
10000
Enter Details for Stadium 2
Enter Stadium Name:
Gadafi Stdaium
Enter the city name:
lahore
Enter the capacity:
20000
1) Schedule Match:
2) Display Details
3) Exit
Enter your choice:
1
Which Stadium u want to choose
 1) Stadium 1
 2) Stadium 2
1
Match successfully Scheduled !!
1) Schedule Match:
2) Display Details
3) Exit
Enter your choice:

2
```

```
name:karachi
city: karachi
capacity: 10000
matches scheduled 1
name:lahore
city: lahore
capacity: 20000
matches scheduled 0
1) Schedule Match:
2) Display Details
3) Exit
Enter your choice:
3

Process finished with exit code 0
```

Q2:

```java
package Q2;
import java.util.*;
public class Session {  4 usages
    String sessionTitle;  3 usages
    String speakerName;  4 usages
    int duration;  no usages
    int roomNumber;  4 usages
    void scheduleSession()  2 usages
    {
        Scanner obj=new Scanner(System.in);
        System.out.println("Enter Speaker Name:");
        speakerName= obj.nextLine();
        System.out.println("Enter Room Number:");
        roomNumber=obj.nextInt();
    }
    void displaySessionDetails()  2 usages
    {
        System.out.println("sessionTitle: "+sessionTitle );
        System.out.println("SpeakerName: "+speakerName );
        System.out.println("RoomNumber: "+roomNumber );
    }
}
```

```java
package Q2;
import java.util.*;
public class main {
    public static void main(String[] args) {
    Session ai_trends= new Session();
    Session cyber_security= new Session();
        Scanner a=new Scanner(System.in);
        System.out.println("Enter Details for Session 1 ");
        System.out.println("Enter Session title:");
        ai_trends.sessionTitle=a.nextLine();
        System.out.println("Enter the Speaker Name:");
        ai_trends.speakerName=a.nextLine();
        System.out.println("Enter the room number:");
        ai_trends.roomNumber=a.nextInt();
        a.nextLine();
        System.out.println("Enter Details for Session 1 ");
        System.out.println("Enter Session title:");
        cyber_security.sessionTitle=a.nextLine();
        System.out.println("Enter the Speaker Name:");
        cyber_security.speakerName=a.nextLine();
        System.out.println("Enter the room number:");
        cyber_security.roomNumber=a.nextInt();
        int temp=0;
        do {
            System.out.println("1) Schedule Session:");
            System.out.println("2) Display Session Details");
            System.out.println("3) Exit");
            System.out.println("Enter your choice:");
            int choice=a.nextInt();
```

```
            switch(choice)
            {
                case 1:
                {
                    System.out.println("Which Session u want to choose \n 1) Session 1 \n 2) Session 2 ");
                    int select=a.nextInt();
                    if(select==1)
                    {
                        ai_trends.scheduleSession();
                        break;
                    } else if (select==2) {
                        cyber_security.scheduleSession();
                        break;
                    }
                    else {
                        System.out.println("invalid option");
                        break;
                    }

                }
                case 2:
                {
                    ai_trends.displaySessionDetails();
                    System.out.println("\n");
                    cyber_security.displaySessionDetails();
                    break;
                }
                default:
```

```
                    }
                    else {
                        System.out.println("invalid option");
                        break;
                    }

                }
                case 2:
                {
                    ai_trends.displaySessionDetails();
                    System.out.println("\n");
                    cyber_security.displaySessionDetails();
                    break;
                }
                default:
                {
                    temp=3;
                    break;
                }
            }

        }while(temp !=3);
    }
}

```

Output:

```
Enter Details for Session 1
Enter Session title:
Se
Enter the Speaker Name:
saleemAhmed
Enter the room number:
1
Enter Details for Session 1
Enter Session title:
AI
Enter the Speaker Name:
aLI
Enter the room number:
3
1) Schedule Session:
2) Display Session Details
3) Exit
```

```
1) Schedule Session:
2) Display Session Details
3) Exit
Enter your choice:
2
sessionTitle: Se
SpeakerName: saleemAhmed
RoomNumber: 1


sessionTitle: AI
SpeakerName: Arham
RoomNumber: 2
1) Schedule Session:
2) Display Session Details
3) Exit
Enter your choice:
3

Process finished with exit code 0
```

Q3:

```java
package Q3;
import java.util.*;
public class Main {
    public static void main(String[] args) {
        System.out.println("PROCOM 25");
        ArrayList<String> a= new ArrayList<>();
        a.add("C++");
        a.add("Java");
        a.add("Python");
        ArrayList<String> b = new ArrayList<>();
        b.add("Machine Learning");
        b.add("Python");
        b.add("Sql");
        Company C1= new Company( CompanyName: "Systems Limited", IndustryType: "Software House", JobRole: "freshie",a);
        Company C2=new Company( CompanyName: "Folio3", IndustryType: "Software House", JobRole: "freshie",b);
        ArrayList<String> S1 = new ArrayList<>();
        S1.add("C++");
        S1.add("Java");
        S1.add("Python");
        ArrayList<String> S2 = new ArrayList<>();
        S2.add("Machine Learning");
        S2.add("Php");
        S2.add("Sql");
        ArrayList<String> S3 = new ArrayList<>();
        S3.add("Machine Learning");
        S3.add("Python");
        S3.add("java");
        Student s1=new Student( name: "ali",S1);
        Student s2=new Student( name: "xaryab",S2);
```

```java
        S3.add("java");
        Student s1=new Student( name: "ali",S1);
        Student s2=new Student( name: "xaryab",S2);
        Student s3=new Student( name: "eshaal",S3);
        C1.ScheduleInterview(s1);
        C1.ScheduleInterview(s2);
        C1.ScheduleInterview(s3);

        C1.DisplayDetails();
        C2.DisplayDetails();



    }
}
```

```java
package Q3;
import java.util.*;

class Company {  4 usages
    String CompanyName;  2 usages
    String IndustryType;  2 usages
    String JobRole;  2 usages
    ArrayList <String> requiredSkills=new ArrayList<>();  3 usages
    ArrayList <String> studentsInterviewed=new ArrayList<>();  2 usages

    Company(String CompanyName,String IndustryType,String JobRole,ArrayList <String> requiredSkills) {  2 usages
        this.CompanyName = CompanyName;
        this.JobRole = JobRole;
        this.IndustryType = IndustryType;
        this.requiredSkills = requiredSkills;
    }

    void ScheduleInterview(Student student){  3 usages
        if(student.skills.containsAll(requiredSkills))
        {
            studentsInterviewed.add(student.name);
        }

    }
    void DisplayDetails()  2 usages
    {
        System.out.println("Name: "+CompanyName);
        System.out.println("IndustryType: "+ IndustryType);
        System.out.println("Job Role: "+JobRole);
        System.out.println("Required Skills: "+requiredSkills);
        System.out.println("Students Interviewed: "+studentsInterviewed);
    }



}
```

```java
package Q3;
import java.util.*;
    public class Student {  7 usages
        String name;  2 usages
        ArrayList <String> skills;  2 usages

        Student(String name,ArrayList <String> skills)  3 usages
        {
            this.name=name;
            this.skills=skills;
        }


}

```

Output:

```
"C:\Program Files\Java\jdk-23\bin\java.exe" "-javaage
PROCOM 25
Name: Systems Limited
IndustryType: Software House
Job Role: freshie
Required Skills: [C++, Java, Python]
Students Interviewed: [ali]
Name: Folio3
IndustryType: Software House
Job Role: freshie
Required Skills: [Machine Learning, Python, Sql]
Students Interviewed: []

Process finished with exit code 0
```

Q4:

```java
package Q4;
import java.util.*;
public class Main {
    public static void main(String[] args) {
        Course C1 = new Course();
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the code of the course : ");
        String code = sc.nextLine();
        System.out.println("Enter the Course Name");
        String name = sc.nextLine();
        System.out.println("Enter the course credit hours");
        int credit = sc.nextInt();

        C1.setValues(code, name, credit);
        C1.getValues();

    }
}

```

```java
package Q4;

public class Course {  no usages
    private String CourseCode;  2 usages
    private String CourseName;  2 usages
    private int CreditHours;  3 usages
    public void setValues(String CourseCode, String CourseName, int CreditHours) {  no usages
        this.CourseCode = CourseCode;
        this.CourseName = CourseName;
        if (CreditHours > 0 && CreditHours < 4) {
            this.CreditHours = CreditHours;
        } else {
            this.CreditHours = 0;
        }
    }
    void getValues() {  no usages
        System.out.println("Course Code: " + CourseCode);
        System.out.println("Course Name: " + CourseName);
        System.out.println("Credit Hours: " + CreditHours);
    }
}
```

Output:

```
Enter the code of the course :
NS101
Enter the Course Name
Applied Physics
Enter the course credit hours
3
Course Code: NS101
Course Name: Applied Physics
Credit Hours: 3

Process finished with exit code 0
```

Q5:

```java
package Q5;
import java.util.*;
public class Item {  no usages
    public int itemId;  2 usages
    public String itemName;  3 usages
    private int itemPrice;  5 usages
    private int stock;  7 usages

    public Item(int itemId,String itemName,int itemPrice,int stock)  no usages
    {
        this.itemId=itemId;
        this.itemName=itemName;
        this.itemPrice=itemPrice;
        this.stock=stock;

    }
    Item()  no usages
    {
    }
    public int getPrice()  no usages
    {
        return itemPrice;
    }
    public int getStock()  no usages
    {
        return stock;
    }
    void Setter(int price,int stock){  no usages
        if(price<0){
            System.out.println("Invalid Price");
        }
```

```
        else {
            this.itemPrice = price;
        }
        if(stock>0){
            this.stock = stock;
        }
        else{
            this.stock = 0;
        }
    }
    public long Purchase(int quantity){  no usages
        if(quantity<stock){
            stock -= quantity;
            System.out.println(itemName+" purchased "+quantity);
            return quantity*itemPrice;
        }
        else{
            System.out.println("Insufficient Stock .Quantity is greater than stock");
            return 0;
        }
    }
    public void Display(){  no usages
        System.out.println("Item Name: "+itemName);
        System.out.println("Item Id: "+itemId);
        System.out.println("Item Price: "+itemPrice);
        System.out.println("Item Stock: "+stock);
    }

}
```

Output:

```
1. Search by name
2. Search by ID
3. Exit
1
Enter the item name:
Bread
Item found
Item Name: Bread
Item Id: 101
Item Price: 100
Item Stock: 200
Enter the quantity to purchase:
44
Bread purchased 44
1. Search by name
2. Search by ID
3. Exit
3
Exiting the program
Bill: 4400

Process finished with exit code 0
```

Q6:

```java
package Q6;

public class Student {  no usages
    public String name;
    public int age;  no usages
    public String Course;  no usages
}

```

```java
package Q6;

public class Main {
    public static void main(String[] args) {
        Student xaryab= new Student();
        xaryab.name="Xaryab";
        xaryab.age=18;
        xaryab.Course="OOPs in Java";

        System.out.println("My name is " + xaryab.name+" and I am " +xaryab.age+" years old and i am studying " + xaryab.Course);
    }
}
```

Output:

```
My name is Xaryab and I am 18 years old and i am studying OOPs in Java

Process finished with exit code 0
```

Q7:

```java
package Q7;

public class Book {  4 usages
    String title;  3 usages
    String author;  3 usages
    int price;  3 usages
    Book(){}  1 usage
    public Book(String title, String author, int price) {  1 usage
        this.title = title;
        this.author = author;
        this.price = price;
    }
    public void setTitle(String title) {  1 usage
        this.title = title;
    }
    public void setAuthor(String author) {  1 usage
        this.author = author;
    }
    public void setPrice(int price) {  1 usage
        this.price = price;
    }
    public String getTitle() {  2 usages
        return title;
    }
    public String getAuthor() {  2 usages
        return author;
    }
    public int getPrice() {  2 usages
        return price;
    }
}
```

```java
package Q7;

public class Main {
    public static void main(String[] args) {
        Book BookDemo=new Book();
        BookDemo.setTitle("HarryPorter and the prisnor of askaban");
        BookDemo.setAuthor("Harryporter");
        BookDemo.setPrice(111);
        System.out.println(BookDemo.getTitle()+" "+BookDemo.getAuthor()+" $"+BookDemo.getPrice());
        Book DemoBook=new Book( title: "Kotlin", author: "Harry Parket", price: 99);
        System.out.println(DemoBook.getTitle()+" "+DemoBook.getAuthor()+" $"+DemoBook.getPrice());
    }

}

```

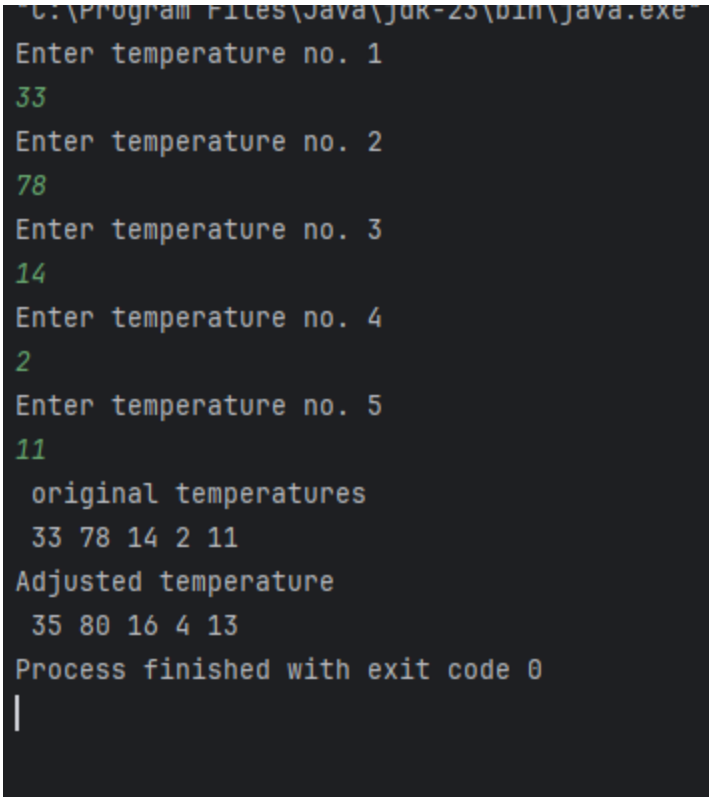
Output:

```
HarryPorter and the prisnor of askaban Harryporter $111
Kotlin Harry Parket $99

Process finished with exit code 0
```

Q8:

```java
package Q8;

import java.util.*;
public class main {
    public static void main(String[] args) {
        int[] temp=new int[5];
        int[] newTemp=new int[5];
        Scanner sc=new Scanner(System.in);


        for(int i=0;i<temp.length;i++){
            System.out.println("Enter temperature no. "+ (i+1));
            temp[i]=sc.nextInt();
            newTemp[i]=temp[i]+2;
        }
        System.out.println(" original temperatures");
        for(int i=0;i<temp.length;i++) {
            System.out.print(" "+temp[i]);
        }

        System.out.println(" \nAdjusted temperature");
        for(int i=0;i<temp.length;i++) {
            System.out.print(" "+newTemp[i]);
        }
    }
}

```

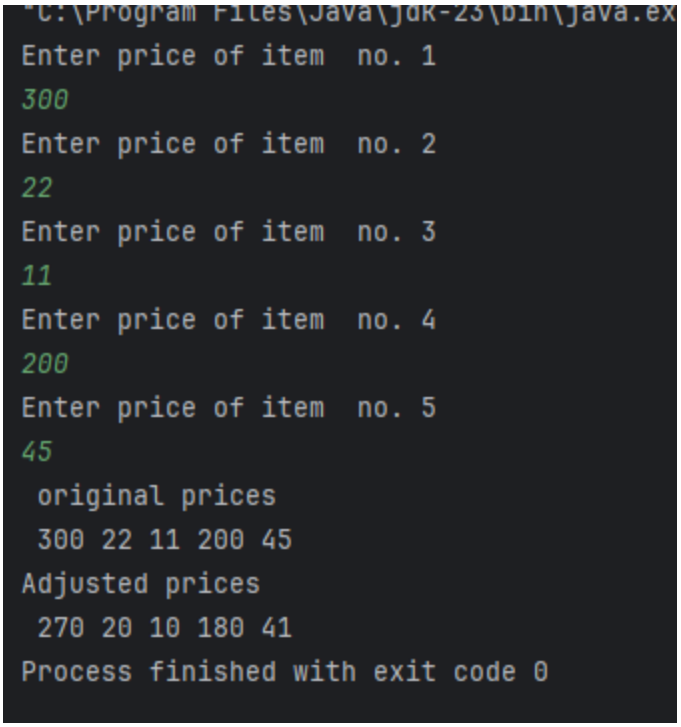
Output:


"C:\Program Files\Java\jdk-23\bin\java.exe"
Enter temperature no. 1
33
Enter temperature no. 2
78
Enter temperature no. 3
14
Enter temperature no. 4
2
Enter temperature no. 5
11
original temperatures
33 78 14 2 11
Adjusted temperature
35 80 16 4 13
Process finished with exit code 0

Q9:

```java
package Q9;
import java.util.Scanner;
public class main {
    public static void main(String[] args) {
        int[] orignal=new int[5];
        int[] discounted=new int[5];
        Scanner sc=new Scanner(System.in);


        for(int i=0;i<orignal.length;i++){
            System.out.println("Enter price of item  no. "+ (i+1));
            orignal[i]=sc.nextInt();
            discounted[i]=(orignal[i]-(orignal[i]/10));
        }
        System.out.println(" original prices");
        for(int i=0;i<orignal.length;i++) {
            System.out.print(" "+orignal[i]);
        }

        System.out.println(" \nAdjusted prices");
        for(int i=0;i<orignal.length;i++) {
            System.out.print(" "+discounted[i]);
        }
    }
}

```

Output:


"C:\Program Files\Java\jdk-23\bin\java.ex
Enter price of item no. 1
300
Enter price of item no. 2
22
Enter price of item no. 3
11
Enter price of item no. 4
200
Enter price of item no. 5
45
 original prices
 300 22 11 200 45
Adjusted prices
 270 20 10 180 41
Process finished with exit code 0

Q10:

```java
package Q10;
import java.util.*;
public class main {
    public static void main(String[] args) {
        Scanner a=new Scanner(System.in);
        ArrayList<String> Students=new ArrayList<>();
        int temp=0;
        do {
            System.out.println(" 1) Register \n 2) Withdraw \n 3)update \n 4)Display list \n 5) exit");
            System.out.println("Enter your choice:");
            int choice=a.nextInt();
            a.nextLine();
            switch(choice)
            {
                case 1:
                {
                    System.out.println("Enter the Student Name:");
                    Students.add(a.nextLine());
                    break;
                }
                case 2: {
                    String name;
                    System.out.println("Enter the Student Name:");
                    name = a.nextLine();
                    if(Students.remove(name))
                    {
                        Students.remove(name);
                    }
                    else {
                        System.out.println("Student Not Found !!!");

                    }
                    break;
```

```
                }
                case 3:
                {
                    String name;
                    System.out.println("Enter the Student Name:");
                    name = a.nextLine();
                    if(Students.contains(name))
                    {
                        String updated_name;
                        System.out.println("Enter updated name:");
                        updated_name=a.nextLine();
                        Students.set(Students.indexOf(name),updated_name);
                    }
                    else {
                        System.out.println("Student Not found!!!");
                    }
                    break;
                }
                case 4:
                {
                    System.out.println("Current list:");
                    for(String student: Students)
                    {
                        System.out.println(student);
                    }
                    break;
                }

                default:
                {
                    temp=3;
                    break;
                }
            }

        }while(temp !=4);
    }
}

```

OutPut:

```
"C:\Program Files\Java\jdk-23\bi
 1) Register
 2) Withdraw
 3)update
 4)Display list
 5) exit
Enter your choice:
1
Enter the Student Name:
arham
 1) Register
 2) Withdraw
 3)update
 4)Display list
 5) exit
Enter your choice:
4
Current list:
arham
 1) Register
 2) Withdraw
 3)update
 4)Display list
 5) exit
Enter your choice:
2
Enter the Student Name:
arham
 1) Register
 2) Withdraw
 3)update
```

```
Current list:
arham
 1) Register
 2) Withdraw
 3)update
 4)Display list
 5) exit
Enter your choice:
2
Enter the Student Name:
arham
 1) Register
 2) Withdraw
 3)update
 4)Display list
 5) exit
Enter your choice:
4
Current list:
 1) Register
 2) Withdraw
 3)update
 4)Display list
 5) exit
Enter your choice:
5
```

Q11:

```java
package Q11;

import java.util.*;
public class main {
    public static void main(String[] args) {
        ArrayList<String> student = new ArrayList<>();
        Scanner scanner = new Scanner(System.in);
        int cho;
        do {
            System.out.println("Student system (Karachi campus)");
            System.out.println("1. New Student");
            System.out.println("2. Update Student Name");
            System.out.println("3. Remove student");
            System.out.println("4. Current list");
            System.out.println("5. Exit");
            System.out.print("Enter your choice: ");
            cho = scanner.nextInt();
            scanner.nextLine();
            switch (cho) {
                case 1:
                    System.out.print("Enter new student name: ");

                    String newStudent = scanner.nextLine();

                    student.add(newStudent);

                    break;
                case 2:
                    System.out.print("Enter student name: ");

                    String currentname = scanner.nextLine();

                    if (student.contains(currentname)) {
                        System.out.print("Enter updated name: ");
```

```
                    String updatedname = scanner.nextLine();

                    student.set(student.indexOf(currentname), updatedname);
                } else {

                    System.out.println("Student not found.");
                }
                break;
            case 3:
                System.out.print("Enter student name to remove: ");

                String cancel = scanner.nextLine();
                if (student.contains(cancel)) {

                    student.remove(cancel);

                } else {
                    System.out.println("Student not found.");
                }

                break;
            case 4:
                System.out.println("Current list:");

                for (String students : student) {

                    System.out.println(students);
                }
                break;
            case 5:
                System.out.println("Exiting system.");
```

```
                break;
            default:
                System.out.println("Invalid choice. Try again.");


        }
    } while (cho != 5);
  }
}
```

Output:

```
Student system (Karachi campus)
1. New Student
2. Update Student Name
3. Remove student
4. Current list
5. Exit
Enter your choice: 1
Enter new student name: arham
Student system (Karachi campus)
1. New Student
2. Update Student Name
3. Remove student
4. Current list
5. Exit
Enter your choice: 2
Enter student name: arhamn
Student not found.
Student system (Karachi campus)
1. New Student
2. Update Student Name
3. Remove student
4. Current list
5. Exit
Enter your choice: 2
Enter student name: arham
Enter updated name: arham1
Student system (Karachi campus)
1. New Student
2. Update Student Name
3. Remove student
```

```
Enter updated name: arham1
Student system (Karachi campus)
1. New Student
2. Update Student Name
3. Remove student
4. Current list
5. Exit
Enter your choice: 3
Enter student name to remove: arham
Student not found.
Student system (Karachi campus)
1. New Student
2. Update Student Name
3. Remove student
4. Current list
5. Exit
Enter your choice: 4
Current list:
arham1
Student system (Karachi campus)
1. New Student
2. Update Student Name
3. Remove student
4. Current list
5. Exit
Enter your choice: 5
Exiting system.

Process finished with exit code 0
```