

Lab-9

202203028

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Question-1:

Code:

```
import java.util.*;

class ManipulateString{

    public static String manipulateString(String s1){
        s1=s1.replaceAll("[0-9]", "");
        String s2="";
        int n=s1.length();
        for(int i=n-1;i>=0;i--){
            s2 += s1.charAt(i);
        }
        s2 = s2.toUpperCase();
        return s2;
    }
}

public class Lab_9_1 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String s1 = sc.next();
        System.out.println(ManipulateString.manipulateString(s1));
    }
}
```

Output:

```
PS C:\Users\Admin\Desktop\OOPs-LAB> javac Lab_9_1.java
PS C:\Users\Admin\Desktop\OOPs-LAB> java Lab_9_1
1a123v33a1hd
DHAVAL
PS C:\Users\Admin\Desktop\OOPs-LAB> █
```

Question-2:

Code:

```
import java.util.*;

class Item{
    private int id,year;
    private String title;
    public int getId() {
        return id;
    }
    public String getTitle() {
        return title;
    }
    public int getYear() {
        return year;
    }
    public void setId(int id) {
        this.id = id;
    }
    public void setTitle(String title) {
        this.title = title;
    }
    public void setYear(int year) {
        this.year = year;
    }
    Item(int id,String title,int year){
        this.id=id;
        this.title=title;
        this.year=year;
    }
    double calculateOverdueAmount(int days){
        return 0;
    }
}

class Book extends Item{
    String author,genre;
    public String getAuthor() {
        return author;
    }
    public String getGenre() {
```

```

        return genre;
    }
    public void setAuthor(String author) {
        this.author = author;
    }
    public void setGenre(String genre) {
        this.genre = genre;
    }
    Book(int id,String title,int year,String author,String genre)
{
    super(id,title,year);
    this.author=author;
    this.genre=genre;
}
    double calculateOverdueAmount(int days)
    {
        return 0.5*days;
    }
}
class Magazine extends Item{
    String publisher;
    int issueNumber;
    public int getIssueNumber() {
        return issueNumber;
    }
    public String getPublisher() {
        return publisher;
    }
    public void setIssueNumber(int issueNumber) {
        this.issueNumber = issueNumber;
    }
    public void setPublisher(String publisher) {
        this.publisher = publisher;
    }
    double calculateOverdueAmount(int days){
        return 0.25*days;
    }
    Magazine(int id,String title,int year,String publisher,int
issueNumber){
        super(id,title,year);
        this.publisher=publisher;
        this.issueNumber=issueNumber;
    }
}

```

```

    }
}
public class Lab_9_2 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        Book b1 = new Book(512,"Sunnabella",2023,"Dhaval Malsattar",
"Horrer");
        System.out.println("Book Name is "+b1.getTitle());
        System.out.println("Book genre is "+b1.getGenre());
        System.out.println("Book Overdue Amount is
"+b1.calculateOverdueAmount(30));
        Magazine m1 = new Magazine(215,"DVS",2023,"Dhaval
Malsattar",14253);
        System.out.println("Magazine issue number is is
"+m1.getIssueNumber());
        System.out.println("Magazine Overdue Amount is
"+m1.calculateOverdueAmount(30));

    }
}

```

Output:

```

PS C:\Users\Admin\Desktop\OOPs-LAB> java Lab_9_2
Book Name is Sunnabella
Book genre is Horrer
Book Overdue Amount is 15.0
Magazine issue number is is 14253
Magazine Overdue Amount is 7.5
PS C:\Users\Admin\Desktop\OOPs-LAB>

```

Question-3:

Code:

```

import java.util.*;

class Student{
    int id;
    String name,grade;
    Student(int id,String name,String grade){
        this.id=id;
        this.grade=grade;
    }
}

```

```

        this.name=name;
    }
    public String toString(){
        return name;
    }
}
class StudentManager{
    ArrayList<Student> a1 = new ArrayList<Student>();
    void addStudent(Student s1){
        a1.add(s1);
    }
    Student removeStudent(Student s1){
        if(!a1.remove(s1)){
            System.out.println("No such a Student exist with
name"+s1.name);
        }
        return s1;
    }
    int getTotalStudents(){
        return a1.size();
    }
    Student getStudentById(int id){
        Student s1 = new Student(0,"Wrong id number","");
        int i;
        for(i=0;i<a1.size();i++){
            if(id==a1.get(i).id){
                s1=a1.get(i);
                break;
            }
        }
        return s1;
    }
    ArrayList<Student> getStudentsByGrade(String grade){
        ArrayList<Student> g1 = new ArrayList<Student>();
        for(int i=0;i<a1.size();i++){
            if(a1.get(i).grade==grade){
                g1.add(a1.get(i));
            }
        }
        return g1;
    }
}

```

```

public class Lab_9_3 {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        Student s1=new Student(1,"Dhaval","A+");
        Student s2=new Student(2,"Deven","A");
        Student s3=new Student(3,"Akshay","A");
        Student s4=new Student(4,"Ajay","A+");
        StudentManager m1 = new StudentManager();
        m1.addStudent(s1);
        m1.addStudent(s2);
        m1.addStudent(s3);
        m1.addStudent(s4);
        System.out.println("Students : "+m1.a1.toString());
        m1.removeStudent(s3);
        System.out.println("Students : "+m1.a1.toString());
        System.out.println("After removing 3rd Student");
        m1.removeStudent(s3);
        System.out.println("Total Number of Student is "+
m1.a1.size());
        System.out.println("name of Student with id 1 is : "+
m1.getStudentById(1).name);
        System.out.println("name of Student with id 3 is : "+
m1.getStudentById(3).name);
        System.out.println("name of Students with grade A+ is :
"+m1.getStudentsByGrade("A+").toString());

    }
}

```

Ouput:

```

PS C:\Users\Admin\Desktop\OOPs-LAB> javac Lab_9_3.java
PS C:\Users\Admin\Desktop\OOPs-LAB> java Lab_9_3
Students : [Dhaval, Deven, Akshay, Ajay]
Students : [Dhaval, Deven, Ajay]
After removing 3rd Student
No such a Student exist with nameAkshay
Total Number of Student is 3
name of Student with id 1 is : Dhaval
name of Student with id 3 is : Wrong id number
name of Students with grade A+ is : [Dhaval, Ajay]
PS C:\Users\Admin\Desktop\OOPs-LAB>

```

Question-4:

Code:

```
import java.util.*;

class Revers{
    public static String reverseWord(String s1){
        String s2="",s3="";
        for(int i=0;i<s1.length();i++){
            if(s1.charAt(i)==' '){
                s2=s3+" "+s2;
                s3="";
                continue;
            }
            s3 +=s1.charAt(i);
        }
        s2=s3+" "+s2;
        return s2;
    }
}

public class Lab_9_4 {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String s1=sc.nextLine();
        String s2=Revers.reverseWord(s1);
        System.out.println(s2);
    }
}
```

Output:

```
PS C:\Users\Admin\Desktop\OOps-LAB> javac Lab_9_4.java
PS C:\Users\Admin\Desktop\OOps-LAB> java Lab_9_4
Hello World! Have a nice day
day nice a Have World! Hello
PS C:\Users\Admin\Desktop\OOps-LAB> █
```

Question-5:

Code:

```
import java.util.*;

class MathUtils{
    public static int add(int a,int b){
        return a+b;
    }
    public static int add(int a,int b,int c){
        return a+b+c;
    }
    public static double add(Double a,double b){
        return a+b;
    }
}

public class Lab_9_5 {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("5 + 7 = "+MathUtils.add(5, 7));
        System.out.println("5 + 7 + 9 = "+MathUtils.add(5, 7, 9));
        System.out.println("5.5 + 7.7 = "+MathUtils.add(5.5, 7.7));
    }
}
```

Output:

```
PS C:\Users\Admin\Desktop\OOPs-LAB> javac Lab_9_5.java
PS C:\Users\Admin\Desktop\OOPs-LAB> java Lab_9_5
5 + 7 = 12
5 + 7 + 9 = 21
5.5 + 7.7 = 13.2
PS C:\Users\Admin\Desktop\OOPs-LAB> 
```

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