Assignment – 3

Q1. Write a program to search an element present in the array

```
import java.util.Scanner;
class Search{
   public static void main(String[] args)
         {
      Scanner sc = new Scanner(System.in);
      System.out.print("Enter the size of the array: ");
      int n = sc.nextInt();
      int[]array = new int[n];
      System.out.print("Enter elements: ");
      for (int i = 0; i < n; i++)
                  {
         array[i] = sc.nextInt();
      }
      System.out.print("Enter the element to search: ");
      int element = sc.nextInt();
      for (int i = 0; i < n; i++)
                  {
         if (array[i] == element)
                        {
            System.out.println(element + " was found at index " + i);
            return;
         }
      }
      System.out.println(element+ " was not found in the array");
   }
}
```

Output:

```
C:\24BCSA08\assignment3>java Search
Enter the size of the array: 6
Enter elements: 2 3 5 1 7 9
Enter the element to search: 9
9 was found at index 5
```

Q2. Write a program to sort the array of n elements.

```
import java.util.Scanner;
class Sort{
   public static void main(String[] args) {
```

Name:Manojnya Harichandan
SIC No: 24BCSA08
Lab Roll No: 10
Group:B1

```
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the size of the array: ");
        int n = sc.nextInt();
        int[] array = new int[n];
        System.out.print("Enter the array elements: ");

        for (int i = 0; i < n; i++) {
            array[i] = sc.nextInt();
        }

        for (int i = 0; i < n - 1; i++) {
            for (int j = 0; j < n - i - 1; j++) {
                if (array[j] > array[j + 1]) {
                    int temp = array[j + 1];
                    array[j + 1] = array[j];
                    array[j] = temp;
                }
            }
        }
        System.out.print("The sorted array is: ");

        for (int element : array) {
            System.out.print(element + " ");
        }
        System.out.println();
    }
}
```

Output:

```
C:\24BCSA08\assignment3>javaC q2.java

C:\24BCSA08\assignment3>java Sort
Enter the size of the array: 8
Enter the array elements: 2 3 5 1 9 5 7 7
The sorted array is: 1 2 3 5 5 7 7 9
```

Q3. Write a program input two matrices and perform the addition of two matrices.

```
import java.util.Scanner;
class MatrixAdd
{
        public static void main(String args[])
        {
                Scanner sc=new Scanner(System.in);
```

Name:Manojnya Harichandan
SIC No: 24BCSA08
Lab Roll No: 10
Group:B1

```
                int a[][]=new int[3][3];
                int b[][]=new int[3][3];
                int c[][]=new int[3][3];
                System.out.println("enter the elements of 1st matrix");
                for(int i=0;i<3;i++)
                {
                        for(int j=0;j<3;j++)
                        {
                                a[i][j]=sc.nextInt();
                        }
                }
                System.out.println("enter the elements of 2nd matrix");
                for(int i=0;i<3;i++)
                {
                        for(int j=0;j<3;j++)
                        {
                                b[i][j]=sc.nextInt();
                        }
                }
                System.out.println("sum of both matrix is");
                for(int i=0;i<3;i++)
                {
                        for(int j=0;j<3;j++)
                        {
                                 c[i][j]=a[i][j]+b[i][j];
                        }
                }
                for(int i=0;i<3;i++)
                {
                        for(int j=0;j<3;j++)
                        {
                                System.out.print(c[i][j]+" ");
                        }
                        System.out.println();
                }
        }
}
```

Output:

Name:Manojnya Harichandan
SIC No: 24BCSA08
Lab Roll No: 10
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```
C:\24BCSA08\assignment3>javaC q3.java

C:\24BCSA08\assignment3>java MatrixAdd
enter the elements of 1st matrix
1 2 3
3 3 3
3 4 4
enter the elements of 2nd matrix
1 1 1
1 1 1
1 1 1
sum of both matrix is
2 3 4
4 4 4
4 5 5
```

Q4. Write a program that performs the addition of two numbers using command-line arguments.

```
class Main {
   public static void main(String[] args) {
      int num1 = Integer.parseInt(args[0]);
      int num2 = Integer.parseInt(args[1]);
      int res = num1 + num2;
      System.out.println("The sum of " + num1 + " and " + num2 + " is: " + res);
   }
}
```

Output:

```
C:\24BCSA08\assignment3>javaC q4.java

C:\24BCSA08\assignment3>java CLA 2 50
The sum of 2 and 50 is: 52
```

Q5. Write a program that will take two integer numbers from the command prompt and find their GCD. If the user does not provide exactly two numbers of arguments then the program should display error message

```
class Gcd
{
   public static void main(String[] args) {
      if (args.length != 2) {
         System.out.println("enter only  two command line argument");
         return;
      }
      int num1 = Integer.parseInt(args[0]);
      int num2 = Integer.parseInt(args[1]);
      int a = num1, b = num2;
```

Name:Manojnya Harichandan
SIC No: 24BCSA08
Lab Roll No: 10
Group:B1

```
        while (b != 0) {
            int temp = b;
            b = a % b;
            a = temp;
        }
        System.out.println("The gcd of " + num1 + " and " + num2 + " is: " + a);
    }
}
```

Output:

```
C:\24BCSA08\assignment3>javaC q5.java

C:\24BCSA08\assignment3>java Gcd 5 15
The gcd of 5 and 15 is: 5
```

Q6. Write a program that will take employee id, employee name, department number, salary from the command prompt. If the user does not provide exactly two numbers of arguments then the program should display error message. Use methods display() to display the record of employee.

```
class Employee {
    public static void main(String[] args) {
        if (args.length != 4) {
            System.out.println("Provide exactly four command line argument");
            return;
        }
        String id = args[0], name = args[1];
        int departmentNo = Integer.parseInt(args[2]);
        double salary = Double.parseDouble(args[3]);
        display(id, name, departmentNo, salary);
    }

    private static void display(String id, String name, int departmentNo, double salary) {
        System.out.println("ID: " + id);
        System.out.println("Name: " + name);
        System.out.println("Department No.: " + departmentNo);
        System.out.println("Salary: " + salary);
    }
}
```

Output:

Name:Manojnya Harichandan
SIC No: 24BCSA08
Lab Roll No: 10
Group:B1

```
C:\24BCSA08\assignment3>javaC q6.java

C:\24BCSA08\assignment3>java Employee
Provide exactly four command line argument

C:\24BCSA08\assignment3>java Employee 24bcsa08 manojnya 10 70899
ID: 24bcsa08
Name: manojnya
Department No.: 10
Salary: 70899.0
```

Q7. Write a program to accept the SIC, name, branch and marks of six subjects using command line argument. Calculate the average marks.

```
Class Average {
   public static void main(String[] args) {
      String sic = args[0], name = args[1], branch = args[2];
      double sum = 0;

      for (int i = 3; i < 9; i++) {
         sum += Double.parseDouble(args[i]);
      }
      double avg = sum / 6;

      System.out.println("SIC: " + sic);
      System.out.println("Name: " + name);
      System.out.println("Branch: " + branch);
      System.out.println("Average Marks: " + avg);
   }
}
```

Output:

```
C:\24BCSA08\assignment3>java Average 24bcsa08 manojnya cse 90 90 70 70 87 76
SIC: 24bcsa08
Name: manojnya
Branch: cse
Average Marks: 80.5
```

Q8. Write a program to input a ragged array and display it.

```
import java.util.Scanner;
class Ragged {
   public static void main(String[] args) {
      Scanner sc = new Scanner(System.in);
      System.out.print("Enter the number of rows: ");
      int row = sc.nextInt();
```

Name:Manojnya Harichandan
SIC No: 24BCSA08
Lab Roll No: 10
Group:B1

```
        int[][] raggedArray = new int[row][];
        System.out.print("Enter ragged column for each row: ");
        for (int i = 0; i < row; i++) {
            int col = sc.nextInt();
            raggedArray[i] = new int[col];
        }
        System.out.println("Enter the elements of ragged array:");
        for (int i = 0; i < row; i++) {
            for (int j = 0; j < raggedArray[i].length; j++) {
                raggedArray[i][j] = sc.nextInt();
            }
        }
        System.out.println("Enter the elements in ragged array :");
        for (int[] array : raggedArray) {
            for (int element : array) {
                System.out.print(element + " ");
            }
            System.out.println();
        }
    }
}
```

Output:

```
C:\24BCSA08\assignment3>java Ragged
Enter the number of rows: 4
Enter ragged column for each row: 2 3 1 4
Enter the elements of ragged array:
1 1 1 2 2 3 4 4 4 4
Enter the elements in ragged array :
1 1
1 2 2
3
4 4 4 4
```

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