

ASSIGNMENT -3

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

```
import java.util.Scanner;
class Main {
    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 the array elements: ");

        for (int i = 0; i < n; i++) {
            array[i] = sc.nextInt();
        }
        System.out.print("Enter the element to search: ");
        int key = sc.nextInt();

        for (int i = 0; i < n; i++) {
            if (array[i] == key) {
                System.out.println(key + " was found at index " + i);
                return;
            }
        }
        System.out.println(key + " was not found in the array");
    }
}
```

OUTPUT :

```
C:\Users\Padmalya Meher\Desktop\java assignments>javac arra.java
C:\Users\Padmalya Meher\Desktop\java assignments>java arra.java
Enter the size of the array: 5
Enter the array elements: 10 23 45 63 50
Enter the element to search: 23
23 was found at index 1
C:\Users\Padmalya Meher\Desktop\java assignments>|
```

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

```
import java.util.Scanner;
class Main {
    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 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:\Users\Padmalya Meher\Desktop\java assignments>javac ab.java
C:\Users\Padmalya Meher\Desktop\java assignments>java ab.java
Enter the size of the array: 6
Enter the array elements: 19 23 47 37 28 29
The sorted array is: 19 23 28 29 37 47
```

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

```
import java.util.Scanner;
class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the dimensions of the matrix: ");
        int row = sc.nextInt();
        int col = sc.nextInt();
        int[][] matrix1 = createMatrix("first matrix", row, col);
        int[][] matrix2 = createMatrix("second matrix", row, col);
        int[][] res = new int[row][col];

        for (int i = 0; i < row; i++) {
            for (int j = 0; j < col; j++) {
                res[i][j] = matrix1[i][j] + matrix2[i][j];
            }
        }
        System.out.println("The resultant matrix elements are:");

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

    private static int[][] createMatrix(String name, int row, int col) {
        Scanner sc = new Scanner(System.in);
        int[][] matrix = new int[row][col];
        System.out.println("Enter the " + name + " elements:");

        for (int i = 0; i < row; i++) {
            for (int j = 0; j < col; j++) {
                matrix[i][j] = sc.nextInt();
            }
        }
        return matrix;
    }
}
```

```
}  
}
```

Output :

```
C:\Users\Padmalya Meher\Desktop\java assignments>javac main.java  
  
C:\Users\Padmalya Meher\Desktop\java assignments>java main.java  
Enter the dimensions of the matrix: 1 2 3  
Enter the first matrix elements:  
2 3 4  
Enter the second matrix elements:  
3 4 7  
The resultant matrix elements are:  
5 7
```

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:\Users\Padmalya Meher\Desktop\java assignments>javac Addition.java  
  
C:\Users\Padmalya Meher\Desktop\java assignments>java Addition 10 22  
The sum of 10 and 22 is: 32  
  
C:\Users\Padmalya Meher\Desktop\java assignments>
```

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 Main {  
    public static void main(String[] args) {  
        if (args.length != 2) {  
            System.out.println("Provide exactly two command line argument");  
            return;  
        }  
    }  
}
```

```

    }
    int num1 = Integer.parseInt(args[0]);
    int num2 = Integer.parseInt(args[1]);
    int a = num1, b = num2;

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

```

Output :

```

C:\Users\Padmalya Meher\Desktop\java assignments>javac Main.java 18 24
error: invalid flag: 18
Usage: javac <options> <source files>
use --help for a list of possible options

C:\Users\Padmalya Meher\Desktop\java assignments>javac Main.java

C:\Users\Padmalya Meher\Desktop\java assignments>java Main 18 24
The gcd of 18 and 24 is: 6

C:\Users\Padmalya Meher\Desktop\java assignments>

```

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 Main {
    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 :

```

C:\Users\Padmalya Meher\Desktop\java assignments>javac Empolyee.java
C:\Users\Padmalya Meher\Desktop\java assignments>java Empolyee 25bcs148 Yash 28 460
ID: 25bcs148
Name: Yash
Department No.: 28
Salary: 460.0

```

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

```

class Main {
    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:\Users\Padmalya Meher\Desktop\java assignments>javac Student.java
C:\Users\Padmalya Meher\Desktop\java assignments>java Student 25CSE12 Rakhi CSE 95 89 81 98 76 94
SIC: 25CSE12
Name: Rakhi
Branch: CSE
Average Marks: 88.83333333333333

```

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

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

        for (int i = 0; i < row; i++) {
            int col = sc.nextInt();
            jaggedArray[i] = new int[col];
        }
        System.out.println("Enter the elements of jagged array:");

        for (int i = 0; i < row; i++) {
            for (int j = 0; j < jaggedArray[i].length; j++) {
                jaggedArray[i][j] = sc.nextInt();
            }
        }
        System.out.println("Enter the elements in jagged array are:");

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

Output :

```
C:\Users\Padmalya Meher\Desktop\java assignments>javac Jarr.java  
C:\Users\Padmalya Meher\Desktop\java assignments>java Jarr.java  
Enter the number of rows: 4  
Enter jagged column for each row: 1 3 4 2  
Enter the elements of jagged array:  
1  
5 6 3  
8 3 9 4  
7 2  
The elements in jagged array are:  
1  
5 6 3  
8 3 9 4  
7 2
```

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