

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");
    }
}
```

Out put : Enter the size of the array : 5

Enter the array elements : 65 34 21 87 54

Enter the element to search : 34

34 was found at index 1

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();
```

```
}  
}
```

Out put : Enter the size of the array: 5

Enter the array elements: 8 3 5 2 7

The sorted array is: 2 3 5 7 8

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;
}
}

```

Out put : Enter the dimensions of the matrix: 2 3

Enter the first matrix elements:

1 2 3

4 5 6

Enter the second matrix elements:

6 5 4

3 2 1

The resultant matrix elements are:

7 7 7

7 7 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);

    }
}

```

Out put : The sum of 5 and 7 is: 12

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);

    }

}

```

Out put : Provide exactly two command line argument 10 20

The gcd of 10 and 20 is: 10

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);  
  
    }  
}
```

Out put: java Main 101 Ram 10 50000

ID: 101

Name: Ram

Department No.: 10

Salary: 50000.0

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);

    }

}

```

Out put : java Main 101 Ramesh CSE 80 75 90 85 70 95

SIC: 101

Name: Ramesh

Branch: CSE

Average Marks: 82.5

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();

}

}

```

Out put :Enter the number of rows: 3

Enter jagged column for each row: 3 2 4

Enter the elements of jagged array:

1 2 3

4 5

6 7 8 9