Exercise programs Based on Array

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19BCE0758

1. Write a java Program to display the sum of rows in a matrix

   Ans:

   Code:

```java
import java.util.Scanner;

public class Rowm {
    public static void main(String[] args) {
        int r, c, sumRow = 0;
        Scanner s = new Scanner(System.in);
        System.out.println("Enter the rows and columns:");
        r = s.nextInt();
        c = s.nextInt();
        int a[][] = new int[r][c];
        System.out.println("Enter the matrix");
        for (int i = 0; i < r; i++) {
            for (int j = 0; j < c; j++) {
                a[i][j] = s.nextInt();
            }
        }
        for (int i = 0; i < r; i++) {
            sumRow = 0;
            for (int j = 0; j < c; j++) {
                sumRow = sumRow + a[i][j];
            }
            System.out.println("Sum of " + (i + 1) + " row: " + sumRow);
        }
    }
}
```

   Output:

```
Command Prompt

C:\Users\Narayan\Desktop\JAVA LAB\Day2>java Rowm
Enter the rows and columns:
3
3
Enter the matrix
1
2
3
4
5
6
7
8
9
Sum of 1 row: 6
Sum of 2 row: 15
Sum of 3 row: 24

C:\Users\Narayan\Desktop\JAVA LAB\Day2>
```

2. Write a java Program to display the addition of two matrix

Ans:

Code:

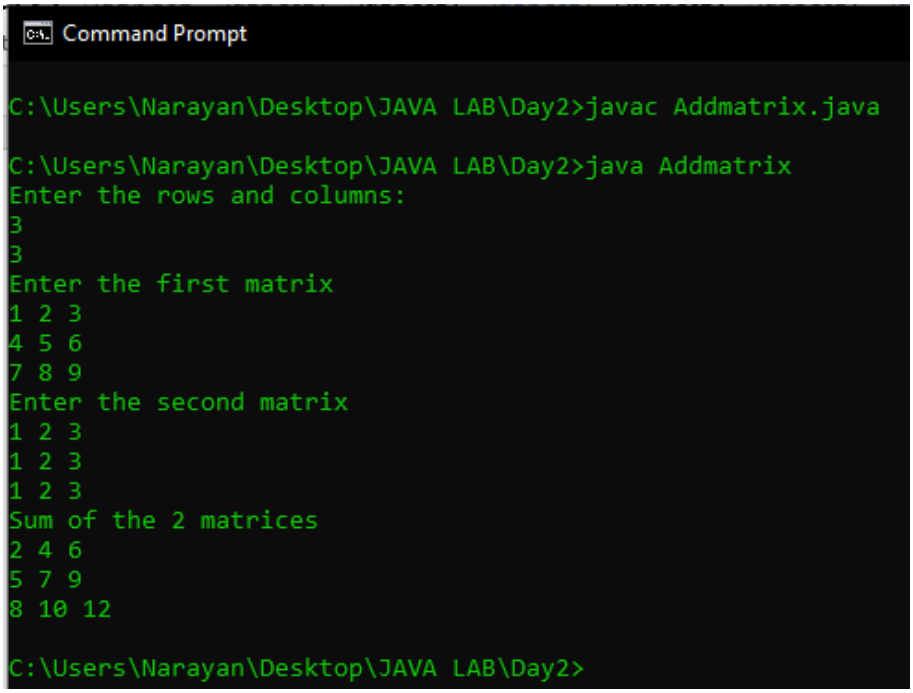
```java
import java.util.Scanner;

public class Addmatrix {
    public static void main(String[] args) {
        int r, c;
        Scanner s = new Scanner(System.in);
        System.out.println("Enter the rows and columns:");
        r = s.nextInt();
        c = s.nextInt();
        int a[][] = new int[r][c];
        int b[][] = new int[r][c];
        int sum[][] = new int[r][c];
        System.out.println("Enter the first matrix");
        for (int i = 0; i < r; i++) {
            for (int j = 0; j < c; j++) {
                a[i][j] = s.nextInt();
            }
        }
        System.out.println("Enter the second matrix");

        for (int i = 0; i < r; i++) {
            for (int j = 0; j < c; j++) {
                b[i][j] = s.nextInt();
            }
        }
        for (int i = 0; i < r; i++) {
            for (int j = 0; j < c; j++) {
                sum[i][j] = b[i][j] + a[i][j];
            }
        }
        System.out.println("Sum of the 2 matrices");
        for (int i = 0; i < r; i++) {
            for (int j = 0; j < c; j++) {
                System.out.print(sum[i][j] + " ");
            }
            System.out.print("\n");
        }

    }
}
```

Output:



3. Write a java Program to display the transpose of a matrix

   Ans:

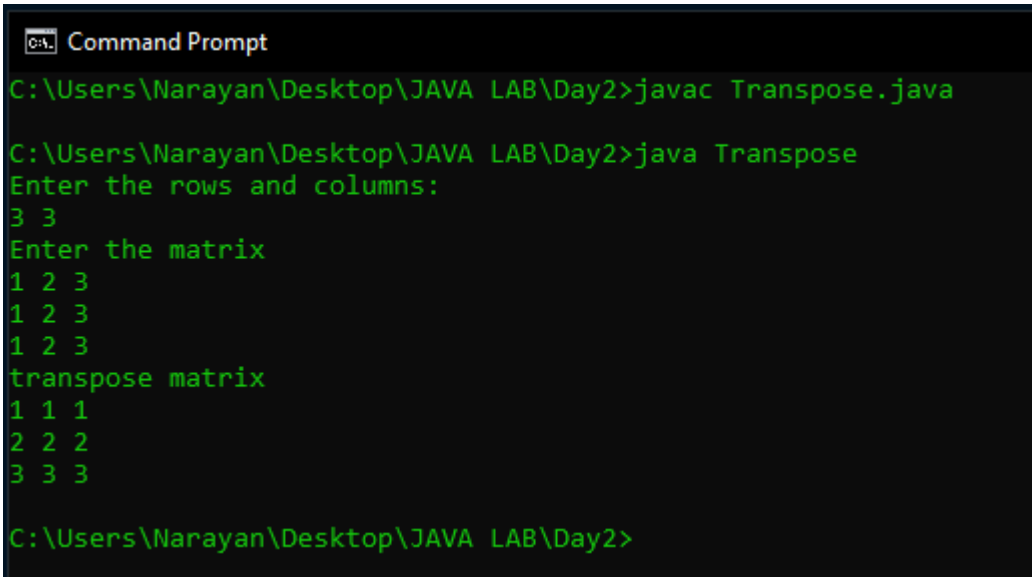
   Code:

```java
import java.util.Scanner;

public class Transpose {
    public static void main(String[] args) {
        int r, c;
        Scanner s = new Scanner(System.in);
        System.out.println("Enter the rows and columns:");
        r = s.nextInt();
        c = s.nextInt();
        int a[][] = new int[r][c];
        System.out.println("Enter the matrix");
        for (int i = 0; i < r; i++) {
            for (int j = 0; j < c; j++) {
                a[i][j] = s.nextInt();
            }
        }
        System.out.println("transpose matrix");
        for (int i = 0; i < r; i++) {
            for (int j = 0; j < c; j++) {
                System.out.print(a[j][i] + " ");
            }
        }

    }
}
```

   Output:



4. Write a Java program to separate even and odd numbers of an given array of integers. Put all even numbers first, and then odd numbers.

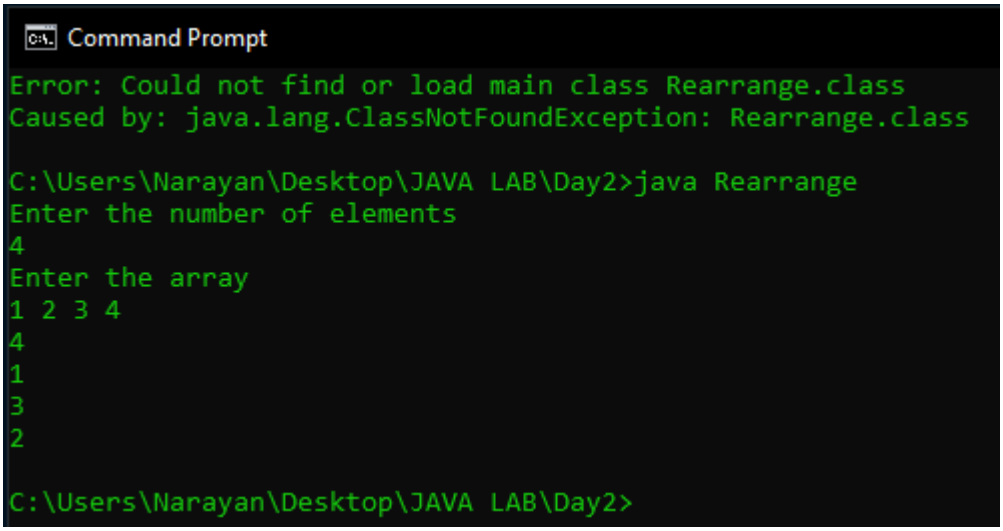
   Ans:

   Code:

```java
import java.util.Scanner;

class Rearrange {
    public static void main(String[] args) {
        Scanner s = new Scanner(System.in);
        System.out.println("Enter the number of elements");
        int n = s.nextInt();
        int l = 0, r = n - 1;
        int arr[] = new int[n];
        int temp[] = new int[n];
        System.out.println("Enter the array");
        for (int i = 0; i < n; i++) {
            arr[i] = s.nextInt();
        }
        for (int i = 0; i < n; i++) {
            if (arr[i] % 2 == 0) {
                temp[l] = arr[i];
                l = l + 1;
            } else {
                temp[r] = arr[i];
                r = r - 1;
            }
        }
        for (int i = 0; i < r; i++) {
            System.out.print(temp[i] + " ");
        }
    }
}
```

Output:


Command Prompt
Error: Could not find or load main class Rearrange.class
Caused by: java.lang.ClassNotFoundException: Rearrange.class
C:\Users\Narayan\Desktop\JAVA LAB\Day2>java Rearrange
Enter the number of elements
4
Enter the array
1 2 3 4
4
1
3
2
C:\Users\Narayan\Desktop\JAVA LAB\Day2>