PRACTICAL 5:

AIM: Write a Java program to multiply two matrices.

CODE:

public class MatrixMultiplication {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

// Input dimensions

System.out.print("Enter rows of first matrix: ");

int r1 = sc.nextInt();

System.out.print("Enter columns of first matrix (and rows of second): ");

int c1 = sc.nextInt();

System.out.print("Enter columns of second matrix: ");

int c2 = sc.nextInt();

int[][] A = new int[r1][c1];

int[][] B = new int[c1][c2];

int[][] C = new int[r1][c2];

// Input first matrix

System.out.println("Enter elements of first matrix:");

for (int i = 0; i < r1; i++)

for (int j = 0; j < c1; j++)

A[i][j] = sc.nextInt();

// Input second matrix

System.out.println("Enter elements of second matrix:");

for (int i = 0; i < c1; i++)

for (int j = 0; j < c2; j++)

B[i][j] = sc.nextInt();

// Matrix multiplication

for (int i = 0; i < r1; i++) {

for (int j = 0; j < c2; j++) {

C[i][j] = 0;

for (int k = 0; k < c1; k++) {

C[i][j] += A[i][k] \* B[k][j];

}

}

}

// Output result

System.out.println("Resultant matrix:");

for (int i = 0; i < r1; i++) {

for (int j = 0; j < c2; j++) {

System.out.print(C[i][j] + " ");

}

System.out.println();

}

}

}

OUTPUT:

