PRACTICE-PROJECT4

MULTIPLY TWO MATRICES –

**package** practice;

**import** java.util.Scanner;

**public** **class** Matrices {

**public** **static** **void** printMatrice(**int** arr[][], **int** rows, **int** columns) {

**for**(**int** i=0; i<rows; i++) {

**for**(**int** j=0; j<columns; j++) {

System.***out***.print(arr[i][j]+"\t");

}

System.***out***.println();

}

}

**public** **static** **int**[][] multiplyMatrice(**int** A[][], **int** r1, **int** c1, **int** B[][], **int** r2, **int** c2) {

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

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

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

**for**(**int** k=0; k<r2; k++) {

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

}

}

}

**return** C;

}

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

**int** r1,c1,r2,c2;

**try** {

System.***out***.println("Enter the number of rows in Matrix A: ");

r1 = sc.nextInt();

System.***out***.println("Enter the number of columns in Matrix A: ");

c1 = sc.nextInt();

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

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

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

System.***out***.println("Enter the value for A["+i+"]["+j+"]: ");

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

}

}

System.***out***.println("\nEnter the number of rows in Matrix B: ");

r2 = sc.nextInt();

System.***out***.println("Enter the number of columns in Matrix B: ");

c2 = sc.nextInt();

**int** B[][] = **new** **int**[r2][c2];

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

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

System.***out***.println("Enter the value for B["+i+"]["+j+"]: ");

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

}

}

System.***out***.println("\nMatrice A: ");

*printMatrice*(A, r1, c1);

System.***out***.println("\nMatrice B: ");

*printMatrice*(B, r2, c2);

**if**(c1 != r2) {

System.***out***.println("\nMultiplication not possible.");

}

**else** {

**int** C[][] = *multiplyMatrice*(A, r1, c1, B, r2, c2);

System.***out***.println("\nResultant Matrice C: ");

*printMatrice*(C, r1, c2);

}

} **catch** (Exception e) {

System.***out***.println(e.getMessage());

}

sc.close();

}

}