```
import java.util.Scanner;
class ArrayDeclaration {
   public static void main(String[] args) {
      int b[];
      b = new int[5];
      int[] c = new int[5];
      for (int element : b) {
         System.out.println(element);
}
      Scanner in = new Scanner(System.in);
      for(int i = 0; i < 5; i++) {
         System.out.println("Enter the Number : ");
         c[i] = in.nextInt();
      }

      for (int element : c) {
         System.out.println(element);
      }
   }
}
```

Matrix Multiplication

```
import java.util.Scanner;

class MatrixMultiplication {

   public static void main(String[] args) {

      Scanner sc = new Scanner(System.in);


      System.out.print("Enter the Rows: ");

      int r = sc.nextInt();

      System.out.print("Enter the Columns: ");

      int c = sc.nextInt();


      int[][] a = new int[r][c];

      int[][] b = new int[r][c];

      int[][] result = new int[r][c];

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

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

            System.out.print("Enter the ["+i+"]["+j+"] a matrix: ");

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

         }

      }

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

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

            System.out.print("Enter the ["+i+"]["+j+"] b matrix: ");

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

         }
```

```
        }
        for(int i = 0; i < r; i++){
            for(int j = 0; j < c; j++){
                for(int k = 0; k < c; k++){
                    result[i][j] += a[i][k] * b[k][j];
                }
                System.out.print(result[i][j] + " ");
            }
            System.out.println();
        }
    }
}
```

Sample Output:

```
Enter the Rows: 2
Enter the Columns: 2
Enter the [0][0] a matrix: 1
Enter the [0][1] a matrix: 2
Enter the [1][0] a matrix: 3
Enter the [1][1] a matrix: 4
Enter the [0][0] b matrix: 1
Enter the [0][1] b matrix: 2
Enter the [1][0] b matrix: 3
Enter the [1][1] b matrix: 4
7 10
15 22
```

Jagged Array (Irregular 2D Array)

```
class JaggedArray {
    public static void main(String[] args) {
        int a[][] = {
                {10, 20, 30, 40},
                {40, 50, 60},
                {70, 80, 90, 50}
        };
        for (int i = 0; i < a.length; i++) {
            for (int j = 0; j < a[i].length; j++) {
                System.out.print(" " + a[i][j]);
            }
            System.out.println("");
        }

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