**(i) Arrays**

Arrays are a fundamental data structure used to store a collection of elements of the same type.

We define the array with a specific type and size.

int[] numbers = new int[5];

then we assign values to the array elements.

numbers[0] = 10;

numbers[1] = 20;

// and so on...

Then we modify elements using their index.

int firstNumber = numbers[0];

numbers[2] = 30;

Iteration: Loop through the array to process each element.

for (int i = 0; i < numbers.length; i++) {

System.out.println(numbers[i]);

}

**(ii) Multi-dimensional Arrays**

Multi-dimensional arrays are arrays of arrays, allowing for more complex data structures like matrices.

We define the multi-dimensional array with specific dimensions.

int[][] matrix = new int[3][3];

then we assign values to the elements.

matrix[0][0] = 1;

matrix[0][1] = 2;

// and so on...

Then we modify elements using row and column indices.

int value = matrix[1][2];

matrix[2][2] = 5;

Iteration: Loop through the array using nested loops.

for (int i = 0; i < matrix.length; i++) {

for (int j = 0; j < matrix[i].length; j++) {

System.out.println(matrix[i][j]);

}

}