**81. One-dimensional Array.**

1. **Array:** It is the collection of elements of similar datatypes.

2. How array is created in java?

-> **int A[] = new int[5];**

a. A is a reference.

b. int[5] is an object

c We don’t give size of an array with A(\* Reference variable).

3. In java every array is an object.

4. Every array in java is created in heap.

5. Array starts from **index 0.**

6. All storage locations are side by side that is contiguous.

7. Every array in java has length as a property. Which is integral type. Length is not a method it’s a property.

9. Example:

int A[] = new int[5];

System.out.println(A.length);

10. Another way to declare an array.

int A[] = {1,2,3,5,2};

Here array will automatically creates array of size of 5.

11. For loops are most frequently used for arrays.

12. **For each loop** is for arrays.

**Syntax:** for(int i : A)

{

System.out.println(x);

}

Every value of in A array is presented.

\*We can acces in only forward direction.

13. In for loop we operate using index but in for each loop we operate using direct values.

**82. Practicing 1D Array.**

1. When we directly print array we gets code.

**83. Student Challenge: Rotation of Array.**

1. Rotating an array:

a. Left Rotation

b. Right Rotation

**84. Student Challenge: Rotation of Array.**

**85. Student Challenge: Increasing size of Array.**

1. We can increase and decrease size of array using array list.

2. Other wise create bigger and move reference to that array.

**86. Two-dimensional Array.**

1. Syntax to create two dimensional array in java:

int a[][] = new int[3][4];

array of references| | array of elements

2. We can call it as array of array.

3. Initializing array:

a. int a[][] = new int[3][4];

b. int a[][] = {{1,2,3,4},{1,2,3,4},{1,2,3,4}}

4. int a[][];

a = new int[3][4];

5. **Jagged array/ Ragged array:** 2D array having irregular size.

6. Syntax:

int[][] a = new int[3][];

a[0] = new int[2];

a[1] = new int[4];

a[2] = new int[6];

**87. Practicing 2D Array.**

1. Something interesting

int[] a, b[];

a is a 1D array.

b is a 2D array.

**88. Student Challenge: Matrix Multiplication.**

1. Rules for matrix multiplication is columns of first matrix and rows of second matrix should be same.

2.