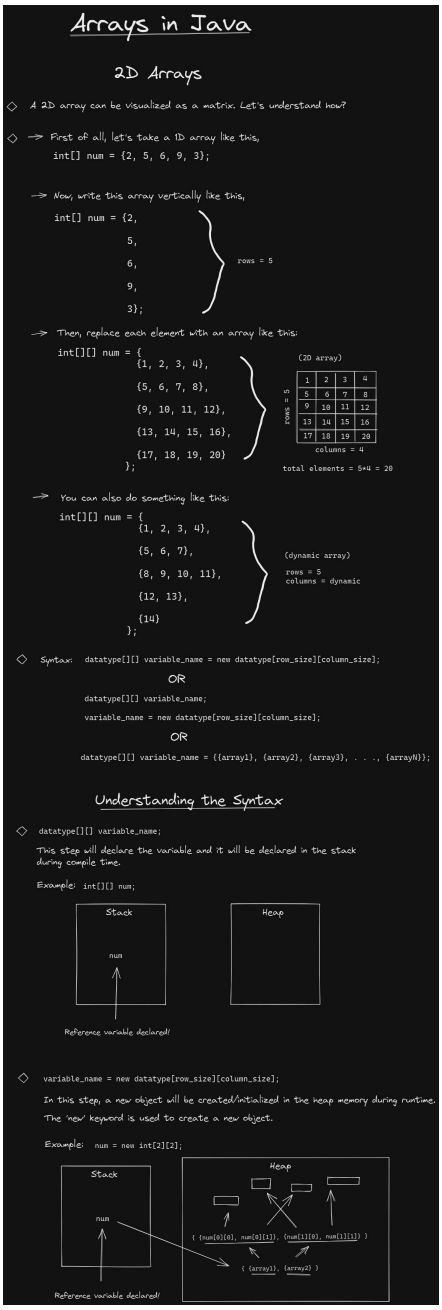
Arrays in Java
2D Arrays
A 2D array can be visualized as a matrix. Let's understand how?
First of all, let's take a 1D array like this,
int[] num = {2, 5, 6, 9, 3};
Now, write this array vertically like this,
int[] num = {2,
5,
6,
9,
3};
rows = 5
Then, replace each element with an array like this:
int[][] num = {
{1, 2, 3, 4},
{5, 6, 7, 8},
{9, 10, 11, 12},
{13, 14, 15, 16},
{17, 18, 19, 20}
};
(2D array)
rows = 5
columns = 4
total elements = 5*4 = 20
You can also do something like this:
int[][] num = {
{1, 2, 3, 4},
{5, 6, 7},
{8, 9, 10, 11},
{12, 13},
{14}
};
(dynamic array)
rows = 5
columns = dynamic
Syntax: datatype[][] variable_name = new datatype[row_size][column_size];
OR
datatype[][] variable_name;
variable_name = new datatype[row_size][column_size];
OR
datatype[][] variable_name = {{array1}, {array2}, {array3}, . . ., {arrayN}};
Understanding the Syntax
datatype[][] variable_name;
This step will declare the variable and it will be declared in the stack during compile time.
Example: int[][] num;
Stack
num
Heap
Reference variable declared!
variable_name = new datatype[row_size][column_size];
In this step, a new object will be created/initialized in the heap memory during runtime.
The 'new' keyword is used to create a new object.
Example: num = new int[2][2];
Stack
num
Heap
{ num[0][0], num[0][1] }, { num[1][0], num[1][1] }
{ {array1}, {array2} }
Reference variable declared!