**Arrays**

A **single\_dimensional array** is a linear list in which its elements are accessible by index and are of one data type. (Everything is fundamentally a single dimensional array.) This is like saying one list about one data type. The length of a single measuring ruler is a single dimensional array.

A **multi\_dimensional array** is a list with depth.

This building for example is a multi-dimensional array because it has **1-21(numbers)** floors and each floor has the apartment units **A-K(Letters)**. It has depth meaning **columns** and **rows.**

So when we have a two dimensional array we have. A list of a list. The more layers this shit has the more it is. A list of a list, of a list. A cube is a three dimensional array. 1.width , 2.height, 3.length.

Limitations of Arrays:

1. **Space complexity O(N):** Initializing a new array to add or remove a single data element would waste a lot of memory when we need just one extra block.
2. **Time complexity O(N):** Our algorithm is relatively slow since we try to traverse the entire array and copy the elements to the new array whenever we want to add or remove an item.