

Type of arrays:

Static

Size is fixed
at the time of
declaration

Dynamic

Size can change according to
new element added.

When array element is full in dynamic
array basically in C++ it copy the
existing array and make another
storage location with double the size OR
original one and copy old array onto
new one.

Ex:

~~vector<int> v{1, 2, 3, 4}~~

vector<int> v{1, 2, 3, 4} ~~Capacity: 4~~

If we add 5,

vector<int> v{1, 2, 3, 4} = Capacity: 8

Time Complexity of dynamic array

Insert $O(1)$

Append* $O(1)$

Insert $O(n)$

Delete $O(n)$

* can be $O(n)$

because when new array will create after capacity
is full, it needs to iterate over array to copy.

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