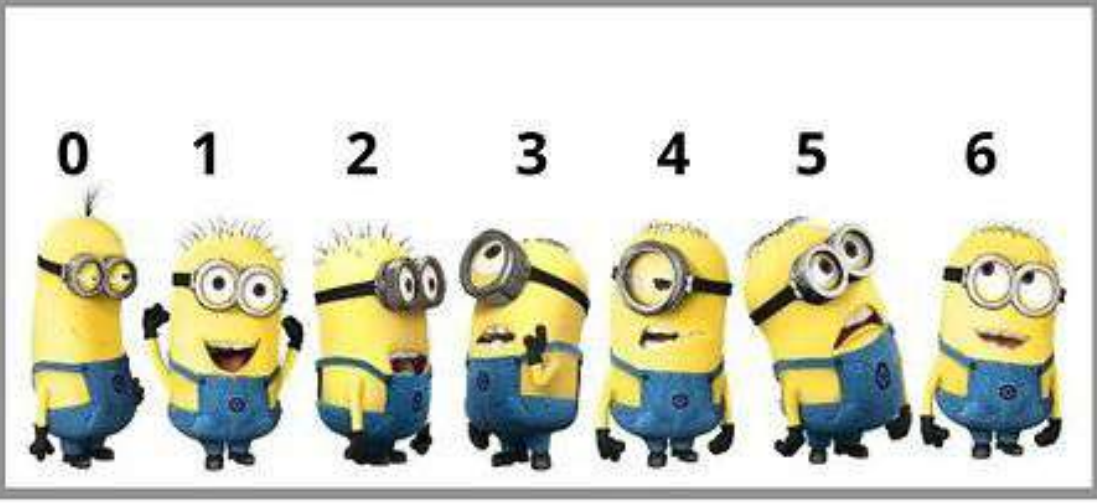
ARRAY

An array is a collection of homogeneous (same type) data items stored in contiguous memory locations.

Arrays are convenient to declare and provide the easy syntax to access any element by it's index number (starts from 0). Once the array is set up, access to any element is convenient and fast.



ADVANTAGES OF ARRAY

- In an array, accessing an element is very easy by using the index number.
- The search process can be applied to an array easily.
- 2D Array is used to represent matrices.

DISADVANTAGES OF ARRAY

- The size of the array is fixed.
- Inserting new elements at the front is potentially expensive because existing elements need to be shifted over to make room.
- Deleting an element from an array is not possible.

Memory allocation of an array

- All the data elements of an array are stored at contiguous locations in the main memory.
- The name of the array represents the base address or the address of the first element in the main memory.
- Each element of the array is represented by proper indexing.
- [redacted]

Basic operations

- Traversal - This operation is used to print the elements of the array.
- Insertion - It is used to add an element at a particular index.
- Deletion - It is used to delete an element from a particular index.
- Search - It is used to search an element using the given index or by the value.
- Update - It updates an element at a particular index.