Arrays -

Array is defined as an ordered set of similar data items. All the data items of an array are stored in consecutive memory locations in RAM. The elements of an array are of the same data type and each item can be accessed using the same name.

Reference - https://www.scaler.com/topics/data-structures/array-data-structure/

Why do arrays have O(1) access time?

An array starts at a specific memory address. Each element occupies the same amount of bytes element\_size. The array elements are located one after another in the memory from the start address on. So you can calculate the memory address of the element i with start + i \* element\_size. This computation is independent of the array size and is therefore O(1).

Ref - https://stackoverflow.com/a/23103837

Dynamic Arrays in different languages -

c++ (Vectors): https://www.scaler.com/topics/cpp/vector-in-cpp/

Java (ArrayList): https://www.interviewbit.com/problems/arraylist/

Concept of Autoboxing and Unboxing in Java - https://slides.com/tarunluthra/autoboxing-java

Python (List): https://www.scaler.com/topics/python/list-in-python/

Javascript (Array): https://www.scaler.com/topics/array-methods-in-javascript/