

DATA STRUCTURES IN C++

Data Structure Decision Diagram

- The following diagram gives you the direction to which data structure to use in C++ according to the problem you are trying to solve



Note: I don't have the source of this diagram. If you know it, please drop me a msg so I can add it here.

Arrays

- Fixed-size collection of elements of the same type
- Stored in **contiguous memory**
- Declared with syntax: **type arrayName[size]**

Example:

```
int numbers[5]
```

- Can also be initialized at declaration:

```
int arr[3] = {1 ,2, 3}
```

- Cannot resize after declaration
- Size can be calculated by **sizeof(arr) / sizeof(arr[0])**
- `stdlib` provides **std::array<type, size>**

▪ **Example:**

```
std::array<int, 3> a = {1, 2, 3};
```

Arrays (vectors)

- `std::vector` is a sequence container that encapsulates dynamic sized arrays*

Linked List

- desc

- desc

Queue

- desc

Heap

- desc

Hash Table

- desc

Tree

- desc