

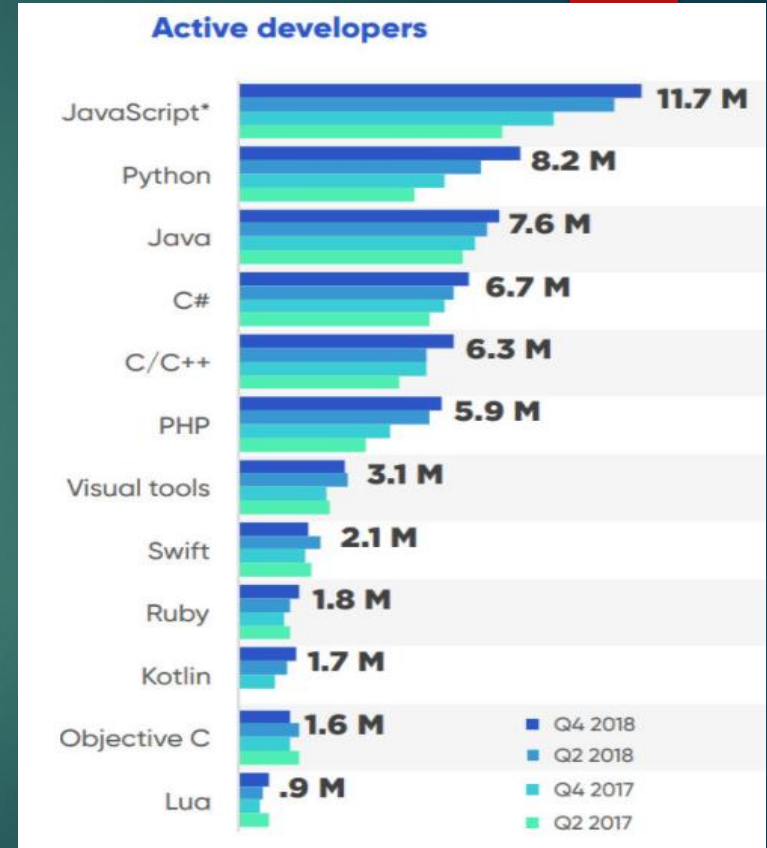
Collection Framework in C



Problem Statement

As we all know, why is it difficult to work with Data Structures in C. Because there is no concept of objects and **no predefined classes** of **data structures** that the user can easily use to ease their work.

That is why, as we can see in graph, rise of object oriented programming languages is on peak as they provides predefined libraries which eases the user's work.



Solution :

There are still a lot of users who loves C Language as

- ✓ C provides the feature of pointers.
- ✓ We can directly interact with the memory by using the pointers.
- ✓ Nothing is hidden from the user and every small task have to be done by user themselves like even allocating a single byte have to be done by the user.

So, I tried to implement the several header files just like the different classes of Collection Framework in Java.

One of the main feature of these header files is that these are

- ❑ generic just like in java i.e user can use these header files for any type of data whether it is array, struct, or even a normal variable etc.

Header files implemented in this Project are :

- | | | |
|--------------|-------------|-----------------|
| ➤ LinkedList | ➤ Deque | ➤ PriorityQueue |
| | ➤ ArrayList | |
| ➤ Stack | ➤ HashMap | ➤ HashSet |



Steps followed to achieve the Solution :

Step 1

Thought about the internal structure and hierarchy of the library and signatures of the methods to be implemented.

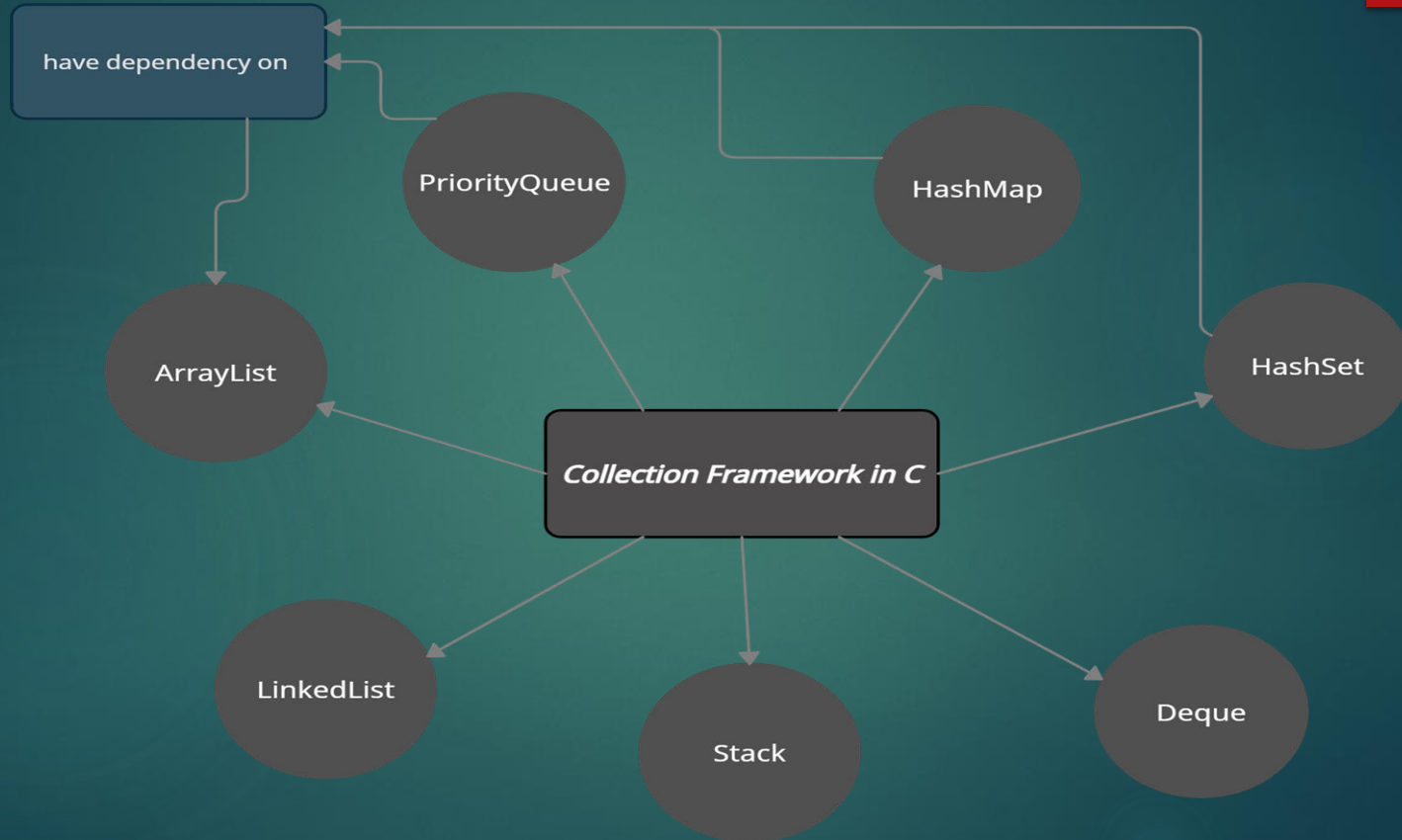
Step 2

Thought about the structure of the structs to be used and correlated the dependencies of some header files on the other header files.

Step 3

Implemented the header files with the proper working functionalities.

Collection Framework Hierarchy



GitHub Repository Link :

<https://github.com/aakash-2626/Collection-Framework-Project-in-C>

Thanks !