

Project Name :

Structure (library consisting of all **Data Structure**)

Personal Details:

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Country of Residence : India
Language : English

Why selected Organisation

Boost provides free peer-reviewed portable C++ source libraries.

Boost C++ Libraries emphasize libraries that work well with the C++ Standard Library. Boost libraries are intended to be widely useful, and usable across a broad spectrum of applications. The Boost license encourages the use of Boost libraries for all users with minimal restrictions.

Boost C++ Libraries aim to establish "existing practice" and provide reference implementations so that Boost libraries are suitable for eventual standardization. Beginning with the ten Boost Libraries included in the Library Technical Report (TR1) and continuing with every release of the ISO standard for C++ since 2011, the C++ Standards Committee has continued to rely on Boost as a valuable source for additions to the Standard C++ Library.

Why selected Project ?

C++ Data structures are vast and inevitable part of programming. Just like we human beings are dependent on cells, the smallest unit of life for various types of cellular activities. The entire C++ program is dependent on the basic unit of programming called “data”. The data operations we perform include data representation, storage, organization and many more in a meaningful manner is performed by the implementation of data structures. In this article, our aim is to inculcate the core concepts of data structures to beginners passionate about C++.

The basic operations that we can perform on data Structures are

- Insertion
- Deletion
- Searching
- Sorting
- Traversal

Project Proposal

Project title :

Structure (library consisting of all **Data Structure**)

Overview :

Data Structure is back bone of every programming language and used everywhere so building library and directly using its functions will make our programming faster and easier which help us to being more productive

Work Done Till Now

<https://github.com/pratik-a/math/commit/19d86ffa8986b1b865bae7c5c59b169d9fdef046>

https://github.com/boostorg/safe_numerics/pull/107

Proposed Milestones and Schedule

May 17, 2021 - June 7, 2021

Communit bonding

- Discussion
- Suggestion
- Overview
- Understanding organisation

June 7, 2021 - June 10, 2021

Array

- Insert in array
- Delete in array
- Sort array
- Traverse in array
- Search in array

June 11 2021 - June 25, 2021

Linked List

- Singly linked list insertion
- Singly linked list deletion
- Singly linked list traversing
- Singly linked list searching
- Doubly linked list insertion
- Doubly linked list deletion

- Doubly linked list traversing
- Doubly linked list searching
- Circular linked list insertion
- Circular linked list deletion
- Circular linked list traversing
- Circular linked list searching

June 25, 2021 - June 28, 2021

Stack

- Insert in stack
- Delete in stack
- Search in stack
- Traversing in stack

June 29, 2021 - July 4, 2021

Queue

- Insert in queue
- Delete in queue
- Search in queue
- Traversing in queue

July 5, 2021- July 15, 2021

Tree

- Pre-order traversal in binary tree
- In-order traversal in binary tree
- Post-order traversal in binary tree
- Searching in Binary tree
- Insertion in Binary tree
- Deletion in Binary tree

July 15, 2021- July 25, 2021

Graph

- BFS Algorithm
- DFS Algorithm
- Prim's Algorithm
- Kruskal's Algorithm

July 25, 2021- July 27, 2021

Searching

- Linear Search
- Binary Search

July 27, 2021- August 3, 2021

Sorting

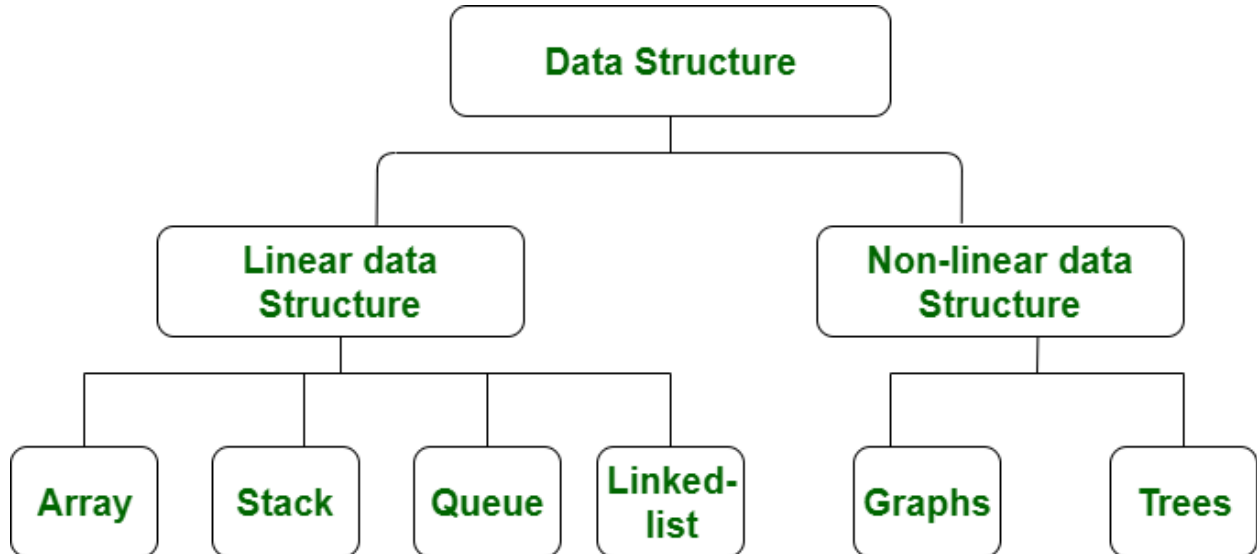
- Bubble sort
- Heap sort
- Insertion sort
- Merge sort
- Quick sort

August 4, 2021 - August 16, 2021

Final Submission

- Documentation
- Summary

Flowchart



Open Source Development Experience

Intern at Ekarshi open source foundation where we build open source C++ libraries of AI-ML , DSP , Forensic for organisations we started building it from basic programming and then we learned about concepts and Started building it .

Background Information

Currently i am pursuing my masters degree in gujarat University of Master of Computer Application(MCA) where i learned different programming languages like C,C++,Java,JavaScript

In college we have done many small projects which helps to do develop many skills according to programmer

C++ is one of my favourite language which i want to code and comfortable in coding

As Boost C++ Libraries is one of my favourite organisations i want to work with them beyond Google Summer of Code 2021

Rate, from 0 to 5 (0 being no experience, 5 being expert), knowledge of the following languages, technologies, or tools:

- C++ 98/03 (traditional C++) : 3
- C++ 11/14 (modern C++) : 4
- C++ Standard Library : 4
- Boost C++ Libraries : 3
- Git : 4

Environment

I am familiar with Visual Studio and Eclipse software development environments

Documentation tool

I am familiar with Doxygen software documentation tool

Why me ?

I am great C++ programmer which will help to build great c++ libraries and i love problem solving which will help me to solve problems easily . i am a great and quick learner which will help me to contribute and learn new things and i also want to contribute ti long time which help me and organisation