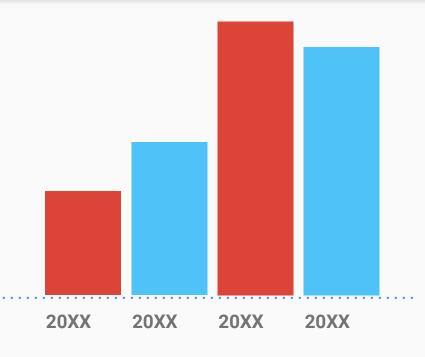
Searching machine

The problem

C language provides a simple bsearch function which uses binary search algorithm, that can only be used to determine whether an element is present in the array or not. It does not tell us at which index the element is actually present.



The solution

Fibonacci Search Algorithm

Step 1

Linear Search is a good algorithm but has high time complexity.

Step 2

Binary Search is a good algorithm but inefficient for large data sets.

Step 3

Fibonacci search algorithm is time efficient as well as efficient for large data sets.



How it works (Architecture Diagram)

We send the array to the function along with the element that we have to search and size of array.



The function finds the nearest greater fibonacci number(F) to the size of array and also finds two preceding fibonacci numbers.(F1 and F2).



comparision of the element to be searched and last element of the range covered by F2.



THE END!



If the element is not found, i.e not present in the given array, we simply return -1.



If the element is found we return the index of array at which the element is present.

Demo

1. Create a Makefile using vim editor.

Write in terminal: vim Makefile

2. After creating the file, to execute the Makefile,

Write in terminal: make

3. After executing the make file, we need to execute the code,

Write in termial : ./file_name

4. You will be able to see the output in your terminal.