STL Containalus Containurs en 892)

containers au of 4 types

11 <u>Sequence containors</u> - Stores data in a sequential manner C'Amplement data structure which can be accused in a sequential manner)

ay vector

by list (Doubly linked dist) ex deque (Doubly ended queue) (Insultion from both de avvay

er forward list (Singly Linked list)

24 container iddeptons :- These contrainers although home a underlined data stoucture that is sequential but you cannot access all the elements of a sequence.

Eg Stock > Stock is build using an arroug but the stack only gives the access to

the top-nost element. (Ynovide et différent interface for sequential containers)

as queue

by spriority queue (heap (uses array)) cy utack

desocietive containers: That stores the data a southed manners. Implement souled data stroughence what can be quick searched (o (log n)) composity) as set by Multiget (Parall grand) 1221 yd mort goilers map mus what while it impro to de nultinap where order down classe unordered Associative Containers matter when searching Camplement un ordered data structures that can whe quickly securched). mordered set by unoudered multiset

er un ordered map

dt unavdered multimap

(hour o river) tought in more beginning to

Algorithm (Anbuild Headerfile and function) Itt for securling an alement in an average 1/ # include < algorithms # include 1 iostroams using names pace std: int main () ? int wull] = ? 1,10,11,9,100} int n = sizeofcauco/sizeofcint); // Hossewich if an element is present on not in an array. cinst key auto it = find (au, aut in, key); cont << it << endl: // veture the endlowers of the key int index = it - ever : // Key address - avery's base add hue we can also white int* it in -> cout << 9 nder: //vetures the position place of auto it If ky is not present the index relispley the size of array. it Cindex = = n cout << key << ''s not foresent is

| Ste for seauching an clonent from sorted during |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Similar to San |
| # include < algorithm' |
| # include & iostruenas |
| using uguespace stoi |
| int main () |
| 15 0 1 0 5 7 1 2 1 1 2 1 1 2 1 |
| int $n = 9$; int K ; which is the second of the second o |
| 8 cin >> 15 |
| To check bool foresent = binary seauch (a, a+n, k); if the if (upresent) Low K'present"; else cout K'Absent"; or not. I More function. |
| To check children () |
| if the 1 b (present). |
| is hussent less con |
| or not. & 1/5 more functions |
| on not. Il. lo more function. (1) L. lo workound. (1) L. lo workound. (2) At 1. K.D. (2) Out of the down-bound Ca, a+n, KD. |
| auto it = down-bound Ca, a+n, KD: |
| way and weaking the Krist address of the Line |
| 11 alies function with action with action with the first work that is >= Key. |
| 11 this function will verticen the first address of the first 11 element that is >= Key. 11 eg a=21,2,2,2,2,3,43 if the key is 2 Lowerbourd |
| 11 will outwen the address of the fixel 2. |
| |
| cout K"In" K" Lower bound of Key " KCit-and |
| auto it = upper_bound (a, a+n, k). |
| I this function verticus strictly the no. which is whichly |
| 1/ Huis function verteurs strictly the no. which is ostrictly 1/ greater > thom key. |

11 1 a= 21,2,2,2,2,33, K=2, Ub=4(index) 1/ Lb = 16+inded). Vb-Lb = No. of occurrence of the draw cout (5" uppour bound of key is *(it-a); cout K" occavance of key = "K(Ub-16); String Class (C++ STL) Ly Que mejou advantage is it provides an alternative for character Darrays # include Tiostrocams # include 4 stringy using namespace strd; int main () 1 1 ((B) mb (mb . 13) - Joseph 1/ Ani Halising A String, Bliving 80; pempty straing It string &10"Hellow"); 110/P > Hello 3/ string 826 = "Hollow World!": //-Hello co world! 44 string 33 (32); // Hellow would! 5/ String 34=33; 11 Hellow would! char at1 = { 'a', 'b', 'c', < 10'} showing 35(a); 11 abc 11 Empty function if (so. empty()) } cout-4180 is empty string";

```
1 Append functo
1/ So. append ("I love C++");
   cout 55 80 Kendl; 1/ & wire C++
24 SO+ = "and Python"
   cout 55 80 55" in": 11 & love c++ and Python
  I length functh and clear functh
     Cout 15 80. lingth () (5" In") // 22
       30. cleare ); // Enaise the cohole string.
      cout KSO. dength()K"In"; 1/0
   11 string compare function
      So = Mango "Apple";
                             pp sood will a bull
      131 = " Mango"
       Cout K S1. compare (82) €"17" 11-12
       cout << 32. compare (SI) <<"\n" 1/ 12
       Cout ( SI. compare (81) ( "\n": 110
   1/ composer la funct vertuins an unteger ==0 if
    both the strings are requal
   1) if 18th string is denological smaller ethan the
    Other string then Metwen some (-re) value
   If 1st string is larger than verturen (tre) value
         Operator overloading
          1/ (31 > 80)
           coul << "Mango is greater";
```

Coll An Apple is greature.

```
Macessing the ith character of a strong
    cout << 300 5 << "In" // A
 11 Find substrung
    String S = 11 & want to have apple juice";
     intida = 8. find ("apple")
    coult ( idex ( "In" / // 0/P -> 15 (vertuins shorting inden of the substraing in the main whing.
11 Remove a wood from the string
                          indudi storbuch
  string would = "apple"
   int den = word dength ()
    8. exame (id x, vienger); ble mon prist
   1/ 1 want to have juice
1/ 4 houate over all the character in the istaing
for (i=0; ixrosis $1. length (); (++)
 3 cont « 317:7 <<":"; 3 1001/2 pain /2
  // 0/p -> M:a:n:g:0;
1/ frevere with the itratox. in min
     7 bhing: iterator it // autocan be veeplaced as.
for (auto Et = SI- begin (); it! = SI- end (); it++)
 cout ((* it) ((")") 3
                       as it prints the address thus
                         it is pounts the value in that
1/0/P -> M,a,n,g,o,
                          adolress
```

ATTOM TO THE THE PURPOSE 1/ for Each loop // auto itself detect the derbaty per of the rawable 11 char, whing, it, float etc. for Caulo c: 91) 2 cout << C << " : 3 // M.a.n.g.o 1/ Ilvis will strate Mough doop and j'st like for lop. String Souting # include siostreams my # include & valgorethmy tinclude toshungy using namespace std: (the total units) #include toshwing> wind of land fill int main () 3, Ent ny is released who le novo storoth cin >>nj cin. get () troots grinds for Lint i=0; in 3 i++) 1111 0:14 John C. John Stills & for Cint 8=0; ixn; c++) ¿ cout << stil exendlig 3000C(3,8+n); all a when the to when in the