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19-07-2024
                  the war with the wife of
LINEAR SEARCH :-
or searching searching an element wing iteration
> # include < etdia, h >
 int main ().
  int i, n, ac 20], key, has !
   wantf ("enter n");
    scant (" 1.d", 4 m);
    printf (" enter elements ");
scanf (" i. d", 4 aci));
     prints ("enter search element");
     scant (" 7. d", f key );
     pos = limar - search (a, m, key);
     if (has > = out to having that it is
     printly ("element is found at place ". O", pos +1);
     pant t'un successful search ")
  int linear search ( ind ac), ind m, int key)
      for ( i = 0; 1 < m; i++)
        if (a(i) == key)
          return 1
 & return -1;
```

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Searthing on element very rocaurion
  main ()
                   and the state of the
     int i, m, accol, bey, has;
     printf (" onter in ");
      Scanf (" 1. d", dm),
      printf ("enter elements");
     for (1=0,112 m)1++)
       Scanf ("'(.d", .da[i]);
      pants (" enter element search ");
      s cant ("1.d", 4 key);
      fus = linear - search (a, on, key)
      If ( has > = 0.)
       pointly 1" element is found at place ".d", pos+1].
       want ( " Not found ")
    int linear search (int ac), int on, int bey 9, inti)
        -4 (i== m)
          Inturn
         else if (aci) == key)
         ruturn 1;
         else:
         linear-search (4, 1+1, m, key);
```

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The elements must be in sorted surray only
BINARY SEARCH :-
                        dring iteration
7 main ()
 Let i, m, u(20), key, has;
   points 1 "enter in");
    scanf 1" 7.d", 4 m);
    printly (" enter elements in sorted array: ");
     Scanfler, dr, kacir);
    private (" enter search element")
     scanf ("1.0", 1 bey);
     has = binary - search (a, m, key);
     if ( has 21=10) in the state of the state of the
     printf (" element is found at place 1. 0" par +1);
     else print 1 " wot found ");
 int binary search ( unt a C), unt m, int key?
     int low=0, high=m=1, mid;
  in while ( low K = high)
       mid = Clow + righ ) /2
       if (a (mid ) == key)
   retwin mid;
       else if ( key ( as mid ] )
```

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high = mid - 1;
   lour = mid + 1)
                                     ( n 7 % 1, 10 7).
  rution -1;
BINARY STARCH Using recursion: -
~ muin ()
     int a [20], i, m, bey, hos;
     frunty (" enter m");
      scanf (" 1.d", 4 m);
     fruit (" enter elements in sorted order ");
      for (i=0) i < m; i++)
      Scanf ("7.0", Lacis);
      punts ("enter search semant")
       Scanf ("7.d", 4 key);
       has = binary - search ( u , o, m, key);
       it ( has > = 0 )
        points (" element is found at place 7.0", pas+1);
        fourth (" Not found ")
   int birary - search (int ac), int low, int high, int key)
        int mil;
```

if (low > high) ruturn -1; Acade A Call elle 2 mil = (down + high)/2. if (a [mid] = = key) return med mill; else if (key < a c mil)) binary-search (a, low, mid-1, key); binary - search (a, mil + 1, high, key); J. M. William Co. L. C. Co. March. 位地位地位 Differences Laturers Cinias d Binary Search:

LINEAR STARCH

-> Elements was searched in Seawatial way

> Elements may not be in sorted order

> Best care O(1)

-> Worst case O(n)

→ It is also called Search

BINARY SEARCH

-> Elements are searched in ly dividing into 2 parts

-> Elements must be in Sorted order

-> Best case O(i)

-) worst case o (logen).

-> It is also called Logarithmic search