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1BM19CS150

Recursive Linear and Binary Search.

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#include <stdio.h>
void binary_search(int[],int,int,int);
void bubble_sort (int[], int);
int main()
{
   int key, size, i;
   int list[25];
   printf("Enter size of a list:");
   scanf("%d", &size);
   printf(" Enter elements\n");
   for(i=0; i<size; i++)
   {
     scanf("%d", &list[i]);
   }
   bubble_sort(list, size);
   printf("\n");
   printf(" Enter key to search\n");
   scanf("%d", &key);
   binary_search(list, 0, size, key);
}
void bubble_sort (int list[], int size)
  {
     int temp, i, j;
     for(i=0; i<size; i++)
     {
       for(j=i; j<size; j++)
         { if(list[i] > list[j])
             { temp = list[i];
```

```
                list[i] = list[j];
                list[j] = temp;
            }
        }
    }
}
void binary_search(int list[], int lo, int hi, int key)
{
    int mid;
    if (lo>hi)
    {
        printf("key not found\n");
        return;
    }
    mid = (lo+hi)/2;
    if (list[mid] == key)
    {
        printf("Key not found\n");
    }
    else if (list[mid] > key)
    {
        binary_search(list, lo, mid-1, key);
    }
    else if (list[mid] < key)
    {
        binary_search(list, mid+1, hi, key);
    }
}
```