**1.BINARY SEARCH**

#include <stdio.h>

void binary\_search(int [], int, int, int);

void bubble\_sort(int [], int);

int main()

{

int element, 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 element to search\n");

scanf("%d", &element);

binary\_search(list, 0, size, element);

}

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 element)

{

int mid;

if (lo > hi)

{

printf("element not found\n");

return;

}

mid = (lo + hi) / 2;

if (list[mid] == element)

{

printf("element found\n");

}

else if (list[mid] > element)

{

binary\_search(list, lo, mid - 1, element);

}

else if (list[mid] < element)

{

binary\_search(list, mid + 1, hi, element);

}

}