// Aim: Implementation of Linear & Binary Search

#include <stdio.h>

int main() {

int n, val, choice;

printf("Enter total no. of elements:\n");

scanf("%d", &n);

int arr[n];

printf("Enter %d elements:\n", n);

for (int i = 0; i < n; i++) {

scanf("%d", &arr[i]);

}

printf("Enter element you want to search:\n");

scanf("%d", &val);

printf("Enter choice:\n");

scanf("%d", &choice);

if (choice == 1) {

printf("It is linear search\n");

for (int i = 0; i < n; i++) {

if (arr[i] == val) {

printf("Element is present at index: %d\n", i);

return 0;

}

}

printf("Element not found\n");

return -1;

}

if (choice == 2) {

printf("It is binary search\n");

int start = 0, end = n - 1, mid;

while (start <= end) {

mid = (start + end) / 2;

if (val > arr[mid]) {

start = mid + 1;

} else if (val < arr[mid]) {

end = mid - 1;

} else if (val == arr[mid]) {

printf("Element is present at index: %d\n", mid);

return 0;

}

}

printf("Element is not found.\n");

return -1;

}

return 0;

}