**EXPERIMENT NO : 4**

**Aim:-** To implement Binary Search for ‘n’ number and perform analysis using DAC

technique.

**Program:-**

#include <stdio.h>

int binarySearch(int a[], int beg, int end, int val) {

int mid;

if(end >= beg)

{ mid = (beg + end)/2;

if(a[mid] == val) {

return mid+1;}

else if(a[mid] < val) {

return binarySearch(a, mid+1, end, val); }

else{

return binarySearch(a, beg, mid-1, val);

} }

return -1;

}

int main() {

int a[] = {11, 14, 25, 30, 40, 41, 52, 57, 70};

int val = 40;

int n = sizeof(a) / sizeof(a[0]);

int res = binarySearch(a, 0, n-1, val);

printf("The elements of the array are - ");

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

printf("%d ", a[i]);

printf("\nElement to be searched is - %d", val);

if (res == -1)

printf("\nElement is not present in the array");

else

printf("\nElement is present at %d position of array", res);

return 0;

}

**Output:**

