PROGRAM 6

AIM:-To perform binary search.

ALGORITHM

Consider a linear array having N elements and certain ITEM needs to be searched. And we have Big as beginning and END as End of array then we have MID as the middle of the array. DATA is our array

**Step 1:**-INITIALISE Set k=1 then DATA[k]

**Step 2:-** INSERT the item to be searched.

**Step 3:-**Repeat step 4

**Step 4:-** IF(ITEM<A[MID]) then

END=A[MID-1];

ELSE IF(ITEM>A[MID])

END=A[MID+1];

ELSE

PRINT search successful

**Step 5:-**k=k+1

**Step 6:-**EXIT

SOURCE CODE

#include<stdio.h>

void main()

{

int a[100],n,i,item,big,end,mid,x=0;

printf("enter the size of the array=");

scanf("%d",&n);

printf("\nenter the array\n");

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

{

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

}

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

{

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

}

printf("\nenter the item to be searching item=");

scanf("%d",&item);

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

{

big=0;

end=n-1;

mid=(big+end)/2;

if(item<a[mid])

{ end=a[mid-1]; }

else if(item>a[mid])

{ end=a[mid+1; }

else

{

printf("\nsearch successful\nand position=%d\n",mid+1);

exit(1);

}

x++;

}

if(x==n)

{

printf("\nsearch unsuccessful"); } }

