Binary Search in C

```
#include<stdio.h>
#include <time.h>
void binary_search(int,int,int[]);
void main()
{
int i,n,key,a[10];
printf("Enter size:\n");
scanf("%d",&n);
printf("Enter array elements:");
for(i=0;i<n;i++)
  scanf("%d",&a[i]);
printf("\nEnter key:");
scanf("%d",&key);
binary_search(n,key,a);
}
void binary_search(int n,int key, int a[])
{
clock_t start_t, end_t, total_t;
start_t = clock();
printf("Starting of the function, start_t = %ld\n", start_t);
 int t,i,j;
 for(i=1;i<n;i++)
 {
 for(j=0;j<n-i;j++)
```

```
 {
 if(a[j]>a[j+1])
 {
 t=a[j];
 a[j]=a[j+1];
 a[j+1]=t;
 }
 }
}
int h=n-1,l=0,mid,flag=0;
while(h>=l)
{
mid=(h+l)/2;
if(a[mid]==key)
{
flag=1;
printf("Successful search");
break;
}
if(a[mid]<key)
{
 l=mid+1;
}
if(a[mid]>key)
{
```

```
 h=mid-1;
}
}
if(flag==0)
 printf("Unsuccessful search");
end_t = clock();
printf("\nEnd of the function, end_t = %ld\n", end_t);
total_t = (double)(end_t - start_t) / CLOCKS_PER_SEC;
printf("Total time taken by CPU: %d\n", total_t );
printf("Exiting of the program...\n");
}
```

Output:

1.Enter size:

```
  5
  Enter array elements:3 2 5 7 6
  Enter key:5
  Starting of the function, start_t = 12318
  Successful search
  End of the function, end_t = 12318
  Total time taken by CPU: 0
  Exiting of the program...
```

2. Enter size:

   3

   Enter array elements:4 3 5

   Enter key:1

   Starting of the function, start_t = 7810

   Unsuccessful search

   End of the function, end_t = 7810

   Total time taken by CPU: 0

   Exiting of the program...