Linear Search in C

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

```
{
printf("Successful search\n");
f=1;
break;
}
}
if(f==0)
  printf("Unsuccessful search");
end_t = clock();
printf("End of the linear search 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:
4
Enter array elements:
3 6 8 7

Enter key:
3
Starting of the linear search function, start_t = 14151
Successful search
```

End of the linear search function, end_t = 14151

Total time taken by CPU: 0

Exiting of the program...

2.

Enter size:

5

Enter array elements:

2 6 7 3 5

Enter key:

4

Starting of the linear search function, start_t = 11768

Unsuccessful searchEnd of the linear search function, end_t = 11768

Total time taken by CPU: 0

Exiting of the program...