Linear search algorithm with array

1. #include<iostream>
2. #include<stdlib.h>
3. using namespace std;
4. int main(){
5. int a[10];
6. int n,x,p;
7. cout<<"enter the number of elements you want";
8. cin>>n;
9. cout<<"enter the elements";
10. for(int i=0;i<n;i++)
11. {
12. cin>>a[i];
13. }
14. cout<<"enter the element you want to search";
15. cin>>x;
16. for(int i=0;i<n;i++)
17. {
18. if(a[i]==x)
19. {
20. x=i+1;
21. p=1;
22. break;
23. }
24. else{
25. p=0;
27. }
28. }
29. if(p==1)
30. {
31. cout<<"found at position "<<x;
32. }
33. else{
34. cout<<"not found";
36. }
37. return 0;
38. }

Time Complexity – worst case is O(n)

Best case is O(1)

We rarely use it as there are much more faster and efficient methods for searching with less time complexity such as binary search and hash tables.