Space Complexity = Auxiliary Space + Input values of the variables

Auxiliary space is some extra whitespaces.

Time Complexity

Time Complexity is based on Asymptotic Notations.

1. Big O Notation – Worst Case – Upper Boundary Value
2. Big Theta Notation – Average Case – Combination of Lower and Upper Boundary Value
3. Big Omega Notation – Best Case – Lower Boundary Value

O(n) →

```
for (i=0;i<n;i++)
{
statement;
}
for (i=n;i>=0;i--)
{
statement;
}
for (i=1;i<n;i=i+2)
{
statement;
}
```

$O(n^2)$ →

```
for(i=0;i<n;i++)
        {
        j<i; (or) for(j=0;j<n;j++)
                {
                statements;
                        }
        }
```

```
for(i=0;i<n;i++)
        {
        for(j=0;j<=i;j++)
                {
                statements;
                        }
        }
```

O(root(n)) →

```
for(i=0;i*i<n;i++)
{statement}
```

```
p=0
for(i=0;p<n;i++)
{
p=p+i
}
```

O(log n) →

```
for(i=1;i<n;i=i*2)
        {

        }
for(i=n;i>0;i=i=i/20)
        {

        }
```