INSERTION SORT

INSERTION SORT Define=Insertion sort is the simple method of sorting an array. In this technique, the array is virtually split into the sorted and unsorted part. An element from unsorted part is picked and is placed at correct position in the sorted part.

ADVANTAGES: 1.Simple and easy to understand and implement. 2.it doesn't require extra memory. 3.it maintains the relative order of equal elements in the input array.

DISADVANTAGES: 1.Insertion sort is inefficient against more extensive data sets. 2.Not suitable for parallel processing. 3.Performance on large lists.

INSERTION SORT IN ASCENDING ORDER

```
import array
from array import *
a=array('i',[2,6,5,1,3,4])
b=len(a)
def insertion(x):
  for i in range(b):
    j=i
    while j>0 and x[j-1]>x[j]:
      x[j-1],x[j]=x[j],x[j-1]
      j=j-1
  print(x)
insertion(a)
```

```
array('i', [1, 2, 3, 4, 5, 6])
```

INSERTION SORT IN DESCENDING ORDER

```
import array
from array import *
b=array('i',[2,6,5,1,3,4])
c=len(b)
def insertion(p):
  for i in range(c):
    k=i
    while k>0 and p[k-1]<p[k]:
      p[k-1],p[k]=p[k],p[k-1]
      k=k-1
  print(p)

insertion(b)
```

```
array('i', [6, 5, 4, 3, 2, 1])
```