

Bubble Sort Vs Insertion Sort

Program to sort a list in increasing order Using Bubble Sort

- `d=[14,67,32,12]`
- `n=len(d)`
- `for i in range(n):`
- `for j in range(n-i-1):`
- `if(d[j]>d[j+1]):`
- `d[j],d[j+1]=d[j+1],d[j]`
- `print(d)`

► Flow of execution:

`i=0(0,1,2,3)` `j=0(0,1,2)`

`[14,67,32,12]`

`j=1` `[14,32,67,12]`

`j=2` `[14,32,12,67]`

`i=1` `j=0(0,1)` `[14,32,12,67]`

`j=1` `[14,12,32,67]`

`i=2` `j=0(0)` `[12,14,32,67]`

Program to sort a list in Decreasing order Using Bubble Sort

- `d=[14,67,32,12]`
- `n=len(d)`
- `for i in range(n):`
- `for j in range(n-i-1):`
- `if(d[j]<d[j+1]):`
- `d[j],d[j+1]=d[j+1],d[j]`
- `print(d)`



Program to sort a list in increasing order Using Insertion Sort

- `d=[14,67,32,12]`
- `n=len(d)`
- `for i in range(1,n):`
- `key=d[i]`
- `j=i-1`
- `while (j>=0 and key<d[j]):`
- `d[j+1]=d[j]`
- `j=j-1`
- `d[j+1]=key`
- `print(d)`

► Flow of execution:

`i=1(1,2,3) key=67 j=0`

`j(0) >=0 and key <14`

`14,67,32,12`

`i=2 key=32 j=1`

`j(1)>=0 and key <67`

`14,67,67,12`

`j(0)>=0 and key =14`

`14,32,67,12`

`i=3 key=12 j=2`

`j(2)>=0 and key <67`

`14,32,67,67`

`j(1)>=0 and key <32`

`14,32,32,67`

`j(0) >=0 and key <14`

`14,14,32,67`

`j=-1`

`12,14,32,67`

Program to sort a list in Decreasing order Using Insertion Sort

- `d=[14,67,32,12]`
- `n=len(d)`
- `for i in range(1,n):`
 - `key=d[i]`
 - `j=i-1`
 - `while (j>=0 and key>d[j]):`
 - `d[j+1]=d[j]`
 - `j=j-1`
 - `d[j+1]=key`
- `print(d)`