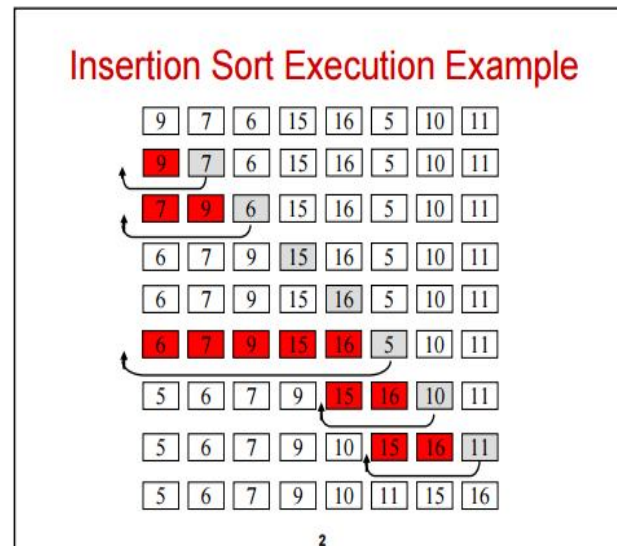# SNS College of Engineering
Department of Information Technology
Insertion Sort

Presented By

M.Malarmathi

AP/IT

What is insertion sort?

- Insertion sort is a simple sorting algorithm that works the way we sort playing cards in our hands.

Insertion Sort Execution Example

Algorithm

Step 1: Start

Step 2: Read the value of n, i,j,temp

Step 3: for i=1 to n-1

Step 4: for j=i

        while(a[j]<a[j-1]) then

           temp=a[j]

           a[j]=a[j-1]

           a[j-1]=temp

         j=j-1

        Endwhile

      Endfor

Step 4: Print the sorted list

Step 5: Stop

Flow chart

Start

Read n, i,j,temp,lst[]

For i=1 to n-1

False

Print the
sorted list

Stop

True

For j=i

False

True

If(lst[j]<lst[j-1])

False

True

Temp=lst[j]

lst[j]=lst[j-1]

lst[j-1]=temp

J-=1

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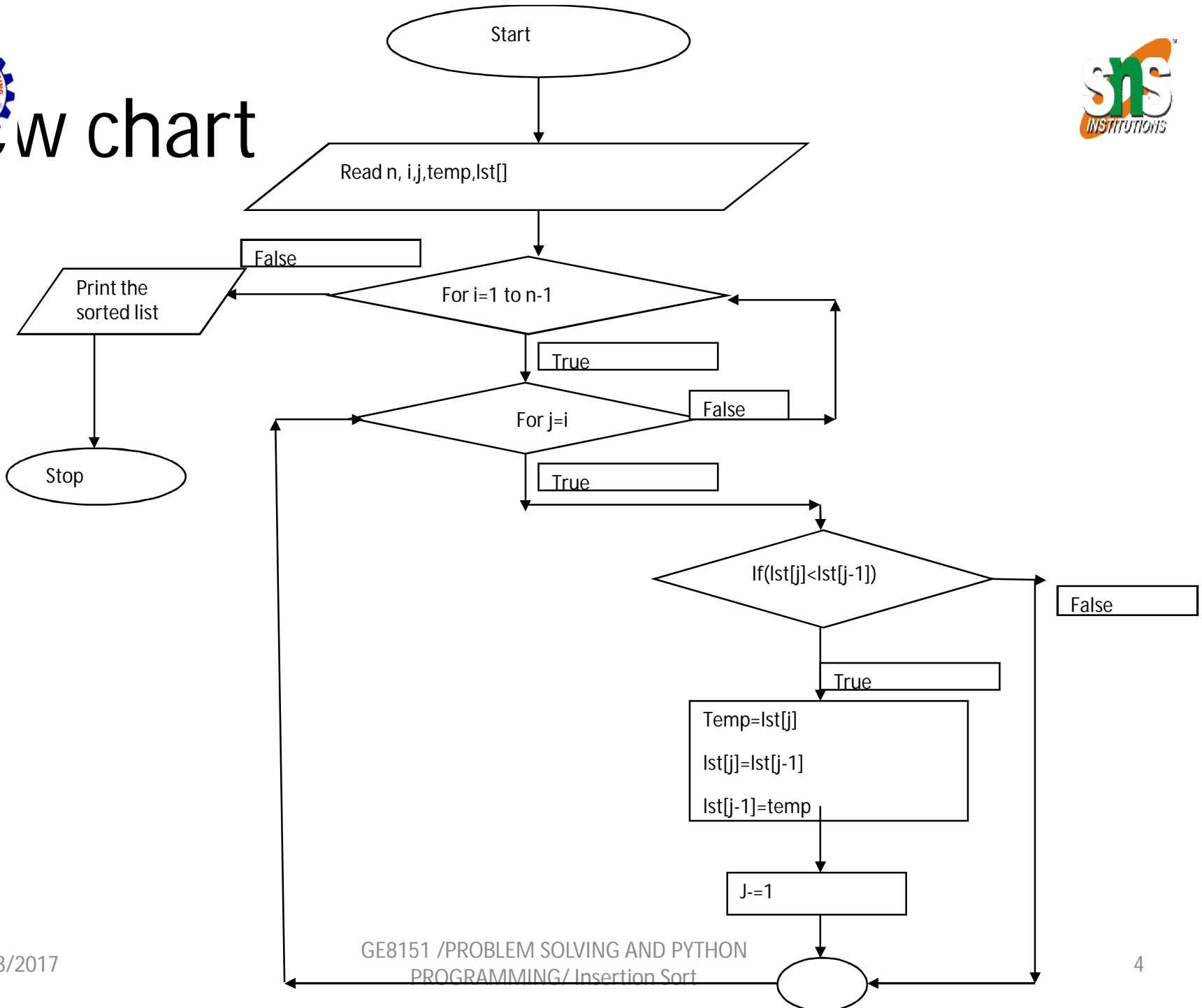
Program

```
size=int(input("enter  the number ofelements:"))
lst=[]
print("Enter the elements:")
for i in range (0, size):
    lst.append(int(input()))
print("Entered list are:",lst)
for  i  in range (1, len(lst)):
    j=i
    while j>0 and lst[j-1]>lst[j]:
        temp=lst[j]
        lst[j]=lst[j-1]
        lst[j-1]=temp
        j-=1
print("sorted List:", lst)
```

- https://www.youtube.com/watch?v=DFG-XuyPYUQ

Output

enter the number ofelements:3

Enter the elements:

3

4

1

Entered list are: [3, 4, 1]

sorted List: [1, 3, 4]

Insert a card in sorted list of cards

```
size=int(input("enter nuber of cards to insert:"))
lst=["king","jocker","queen"]
print("Enter name of cards:")
for i in range (0, size):
    lst.append(str(input()))
print("Entered list are:",lst)
for  i  in range (1, len(lst)):
    j=i
    while j>0 and lst[j-1]>lst[j]:
        temp=lst[j]
        lst[j]=lst[j-1]
        lst[j-1]=temp
        j-=1
print("sorted List:", lst)
```

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Thank you