MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

problem solving using computers

CSE 1051

Bubble Sorting

S13_1

Objectives

To learn and appreciate the following concepts

Sorting Technique

- Bubble Sort
- Bubble Sort with strings

Session Outcome

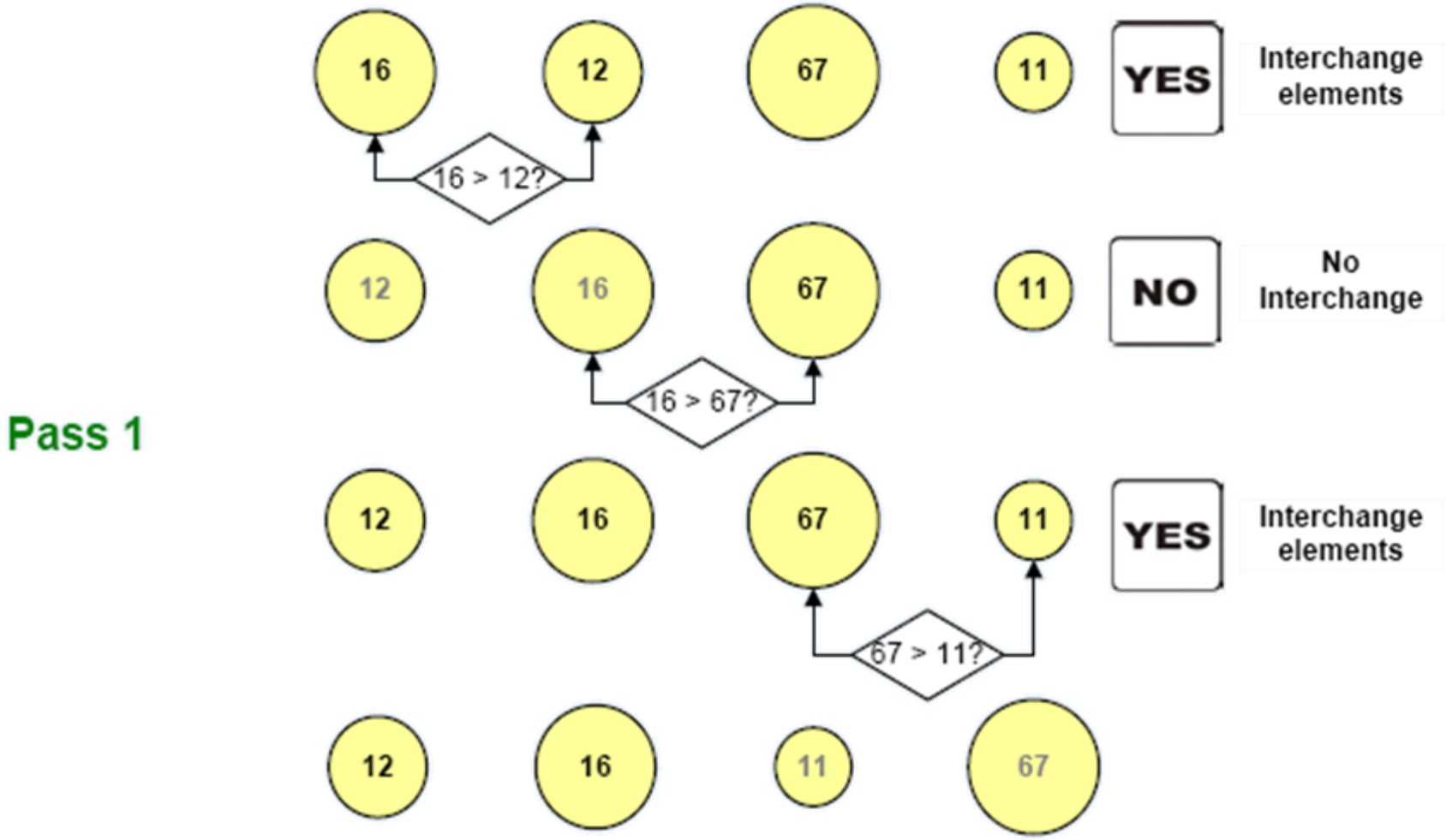
- At the end of the session the student will be able to understand:
  - Importance of bubble sorting on integers and strings

Sorting

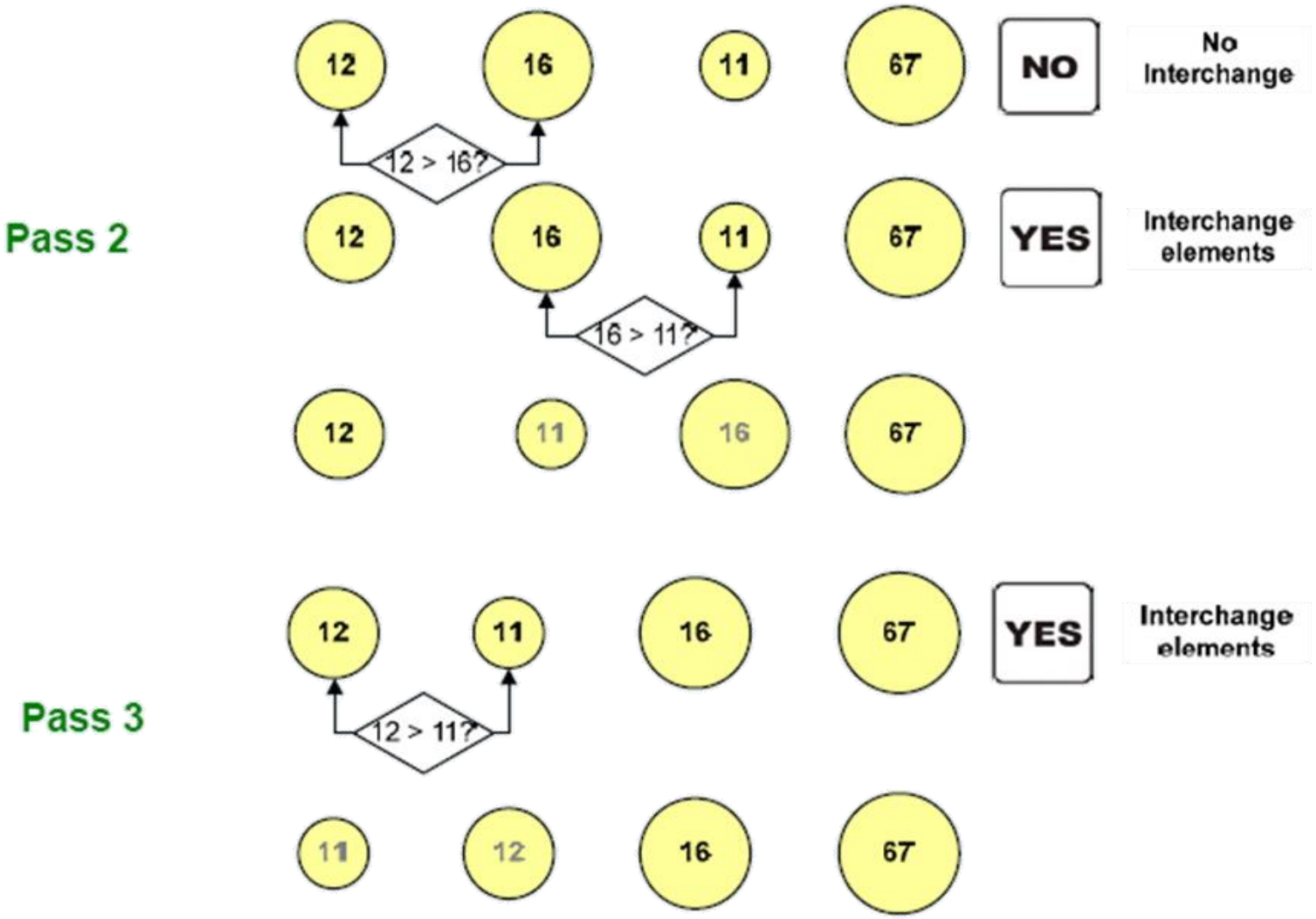
Arrangement of data elements in a particular order

→ Bubble sorting

Bubble Sort- Illustration



Bubble Sort- Illustration



Pseudo code for Bubble Sort procedure

```
for(i=0;i<n;i++)
Input a[i]; // entered elements
  for(i=0;i<n-1;i++) //pass
  {      for(j=0;j<n-i-1;j++)
     {          if(a[j]>a[j+1]) // comparison
          { // interchange
           temp=a[j];
           a[j]=a[j+1];
           a[j+1]=temp;
          }    }  }
```

Example :
a[ ]={16, 12, 11, 67}

Array after sorting (ascending):
a[ ]={11, 12, 16, 67}

Go to posts/chat box for the link to the question **PQn. S13.1**

submit your solution in next 2 minutes

The session will resume in 3 minutes

Strings Bubble Sort

```
int main()
{
char string[30][30],temp[30];
int no, i, j;
printf("\nEnter the no of strings:");
scanf("%d",&no);
printf("\nEnter the strings:");
for(i=0;i<no; i++)
    gets(string[i]);
for(i=0;i<no-1;i++)
  for(j=i+1;j<no;j++)
  {
    if(strcmp(string[i],string[j])>0)
        {
        strcpy(temp,string[i]);
        strcpy(string[i],string[j]);
        strcpy(string[j],temp);
        }
    }
 printf("\n The sorted array is:");
for(i=0;i<no;i++)
    puts(string[i]);
return 0;
}
```

String Bubble Sort input/output

D	E	L	H	I	\0		
A	G	R	A	\0			
B	A	R	E	L	I	\0	

A	G	R	A	\0			
B	A	R	E	L	I	\0	
D	E	L	H	I	\0		

Summary

- Bubble Sort
- Bubble sort with strings