**Lecture notes on Unit - 6**

**Non-Deterministic Algorithms for Searching and Sorting:**

The design of ND Algorithms is based on three major functions:

1. Select ()
2. Success ()
3. Failure ()

To declare the success or failure, verification process should be designed.

Algorithm **nd\_search(a,n,x)**

{

// “a” = array of size “n” and “x” is element to be searched

for i = **1 to n** do

{

j = select(a,n) //select a location “j” from given array

if (a[j] = x) 🡺 Verification process

**success();**

}

**failure();**

}

//Try above algorithm using repeat until and comment upon the time complexity//

Algorithm **nd\_sort(a,b,n)**

{

//”a” is array to be sorted and “b” is array for auxiliary storage

for i = 1 to n do

{

j = select(a,n)

b[i] = a[j] //create the array “b” by selecting “n” elements

}

for j = 1 to n do

{

if(b[i] > b[i+1])

failure();

}

success();

}