**LONGEST INCREASING SUBSEQUENCE**

**package** subsequence;

**public** **class** longest\_increasing\_subsequence {

**public** **static** **void** main(String[] args) {

**int** arr[] = { 3,5,9,12,13,14,16,22};

**int** arr\_length = arr.length;

System.***out***.println("The length of longest Increasing subsequence is: "+ *incre\_subseq*(arr, arr\_length));

}

**static** **int** incre\_subseq(**int** my\_arr[], **int** arr\_length){

**int** seq\_arr[] = **new** **int**[arr\_length];

**int** i, j, max = 0;

**for** (i = 0; i < arr\_length; i++)

{

seq\_arr[i] = 1;

}

**for** (i = 1; i < arr\_length; i++)

{

**for** (j = 0; j < i; j++)

{

**if** (my\_arr[i] > my\_arr[j] && seq\_arr[i] < seq\_arr[j] + 1)

{

seq\_arr[i] = seq\_arr[j] + 1;

}

}

}

**for** (i = 0; i < arr\_length; i++)

{

**if** (max < seq\_arr[i])

{

max = seq\_arr[i];

}

}

**return** max;

}

}