**Longest Increasing Subsequence**

#include<bits/stdc++.h>

int longestIncreasingSubsequence(int arr[], int n)

{

vector<int> piles;

for (int i = 0; i < n; i++) {

auto it = lower\_bound(piles.begin(), piles.end(), arr[i]);

if (it == piles.end()) {

piles.push\_back(arr[i]);

} else {

\*it = arr[i];

}

}

return piles.size();

}