**//LIS**

**/\***

**Parameter: the sequence vector**

**Return: LIS of the sequence**

**Complexity: O(nlogn)**

**\*/**

int LIS(vector<int>Sequence)

{

int n=Sequence.size();

int L[n+5],I[n+5],LisLength = 0;

I[0] = -1e9;

for(int i = 1; i <= n; i++ )

I[i] = 1e9;

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

{

int low, high, mid;

low = 0;

high = LisLength;

while( low <= high )

{

mid = ( low + high )>> 1;

if( I[mid] < Sequence[i] )

low = mid + 1;

else

high = mid - 1;

}

I[low] = Sequence[i];

if( LisLength < low )

LisLength = low;

}

return LisLength;

}