CSE 462 (Offline 2)Weighted Set Cover Problem

**LP Approximation Approach:**

Complexity:

Average case: The simplex algorithm has been proved to solve "random" problems efficiently, i.e. in a cubic number of steps O(N3), which is similar to its behavior on practical problems.

Worst case:  The simplex method takes a number of steps exponential in the problem size.

 In fact, for some time it was not known whether the linear programming problem was solvable in polynomial time or not.  The simplex method is still an open research question.

**Bitmask DP Approach:**

Complexity:

For recursive calls, the complexity of this approach is O(2n) as in every call whether bit value is changing or not and the call continues till every bit is 1. So for “n” elements “n” bit of an integer changes.

In every call, the complexity is constant O(1) .

Thus, complexity of this approach is O(2n).