Classroom Allotment

In this algorithm we try to see the min number of classrooms that can be allotted for a given set of lectures.

Now we prove this by assuming a concept of depth. The depth is basically the number of classes that conflict with each other at a given time. Now use to say that the depth must have a max value which is the max number of classes being allowed.

Thus this can be proved by assuming that there exists a class which cannot be placed in d-1 classrooms. Hence it is assigned to class d. Now we know from this info that all the d- classes end at a time after d starts. Which also means that they must have started no later than d starts. Implying at sj+epsilon, there exists d classes which have conflict with each other. Hence the depth even in the worst case is lesser than or equal to number of classrooms being allotted.

**Note - This kind of argument is called the Structural. Discover a simple “structural” bound asserting that every possible solution must have a certain value. Then show that your algorithm always achieves this bound**.