Choose the last activity to start that is compatible with all previously selected activities.

a) Show that this method is also a greedy approach.

This is a greedy approach because this method can follow a selection of choosing the latest possible which is the local optimal solution, as it has the least amount of time between activities.

b) Show that this approach results in only one remaining subproblem.

starting with

- ⇨ $S_{0,12}$ No activities chosen
- ⇨ $S_{0.11} + S_{11,12}$ Activity 11
- ⇨ $S_{0,9} + S_{9,11} + S_{11,12}$ Activities 9,11
- ⇨ $S_{0,4} + S_{4,9} + S_{9,11} + S_{11,12}$ Activities 4,9,11
- ⇨ $S_{0,1} + S_{1,4} + S_{4,9} + S_{9,11} + S_{11,12}$ Activities 1,4,9,11

Starting at S0,12

S0,12	No activities chosen
S0,11 + S11,12	Activity 11 chosen
S0,9 + S9,11 + S11,12	Activities 9 and 11 chosen
S0,4 + S4,9 + S9,11 + S11,12	Activities 4, 9 and 11 chosen
S0,1 + S1,4 + S4,9 + S9,11	Activities 1, 4, 9 and 11 chosen

c) Show that the greedy choice yields an optimal result, that is, show that it is safe to make the greedy choice.

This greedy choice yields the optimal result because firstly, for any activity A, A will not be chosen if there is an activity B such that the start time of A is less than the start time of B and the finish time of A is greater than the finish time of B. This creates the optimal result of activities with least amount of time between them.

d) In implementing this algorithm, assuming the list of activities are not sorted, would you sort them first, and if you would, what criteria would you use to sort the list?

Yes, they will be sorted. The list of activities would be sorted by the finish time. Once this is sorted, any overlapping activities on either side of smaller activities can be removed. By doing this we can maximise activities.