

Assignment 2 Experiments

Scheduling

(a) Looking for students who can have largest consecutive numbers which will match remaining steps. (substructure will be find all students that can have least switch or largest consecutive numbers can fit in every steps)

(b)

consider a series of experiment steps as a set. i go over all students and looking for the largest consecutive numbers which can match remaining steps. as long as number of students not equals to all the them, and number of step not equal to n , i keep going until cover all of them.

(d) $O(n^2)$

(e) use $\langle 1, 2, 3, 4, 5, 6 \rangle$ steps

Student 1 $\langle 1, 2, 3, 5 \rangle$

Student2 $\langle 2, 3, 4 \rangle$

Student 3 $\langle 1, 4, 5, 6 \rangle$ as a counter example

start from student 1 signUptable [1][1] =1,
signUptable[1][2]=1, signUptable [1][3] = 1 largest
numconsecutive =3 , signUptable[1][4]= 0 breaks. then student 2
[2][1]=0 , breaks. student3 [3][1]=1, student 3[3][2]=0 breaks.
numconsecutive=1. I record index of student 1 because of the
largest numconsecutive. remain steps= num of steps n. i keep
reducing remain steps until =0. then num of steps increasing.
return to first student again. start from steps 4. from student 1 to
student 3, largest numconsecutive will be 3. I record index of
student 3. so final output will be student 1 $\langle 1, 2, 3 \rangle$, Student
3 $\langle 4, 5, 6 \rangle$ only one switch.

