Bilques Jan

Assignment 1:

1.Falling Glass:

a) Either the glass breaks or doesn’t break:

1) If the glass breaks after dropping from a certain nth floor, then we need to check for floors lower than n with remaining glasses, so we have n-1 floors and x-1 glasses.

2) If the glass doesn’t break after dropping from the nth floor, then we only need to check for floors higher than n, so we end up with k-n floors and x glasses.

b) falling glass=fg fg(2,4)



i=1 i=2 i=3 i=4



 fg (1,0) fg(2,3) fg (1,1) fg(2,2) fg(1,2) fg(2,1) fg(1,3) fg(2,0)



…. fg (1,0) fg(2,2) …. …… ….. ….. ….. ….

…………. (overlapping sub problems) ……………….

d) 8

e) n\*m

f) Bottom-up:

1)start from the smallest sub problem 0 glass and 0 floors and move towards final problem.

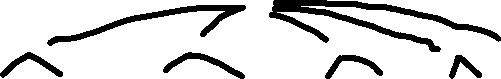
2)Store the result in some temporary storage. Use the temporary result being stored instead of solving the sub problems again and again.

2.Rod cutting:

a) cut rod=cR

cR(5)

cR(4) cR(3) cR(2) cR(1) cR(0)



cR(3) cR(2) cR(2) cR(1) cR(1) cR(0) cR(0) cR(0)



cR(2) cR(1) cR(1) cR(0) cR(1) cR(0) cR(0) cR(0) cR(0) cR(0)



cR(1) cR(0) cR(0) cR(0) cR(0) cR(0) cR(0) cR(0)