EE382V: VLSI Physical Design Automation

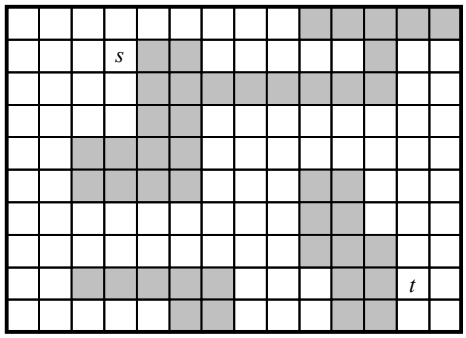
Spring 2015 (Prof. David Pan)

Homework #4: due April 13, 2015

1. ILP based global routing: Formulate an ILP-based routing problem for the following netlist: $\{n_1=B_2-B_4-B_6,\ n_2=B_3-B_4,\ n_3=B_1-B_2-B_5-B_6,\ n_4=B_2-B_5\}$. Assume that the capacity of each boundary is as follows: $\{B_1-B_2$: 3, B_2-B_3: 4, B_4-B_5: 5, B_5-B_6: 4, B_1-B_4: 7, B_2-B_5: 5, B_3-B_6: 3$\}$.

B_1	B_2	B_3
B_4	B_5	B_6

2. Maze & line search algorithm: For each given algorithm that finds a path from s to t on the following grid, (i) fill in the visited cells with proper labels, (ii) give the total number of cells visited, and (iii) give the length of the path found.



a) Lee's maze router with double fan-out
b) Lee's maze router with Akers' 1122 sequence
c) Hadlock's minimum detour router
d) How many lines and exit points will Mikami-Tabuchi and Hightower algorithm generate?