Programming assignment

Problem description

Implement a 2-layer greedy channel router. You also can implement any routing algorithm to complete the routing of benchmarks.

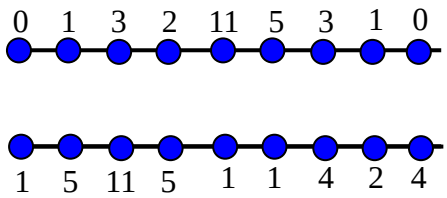
Input/Output Format

Input:

Input Example.

0 1 3 2 11 5 3 1 0

1 5 11 5 1 1 4 2 4



Deutsch difficult is released on E3.

Output:

Text: print out all horizontal and vertical paths of every net in a file "case_name.out".

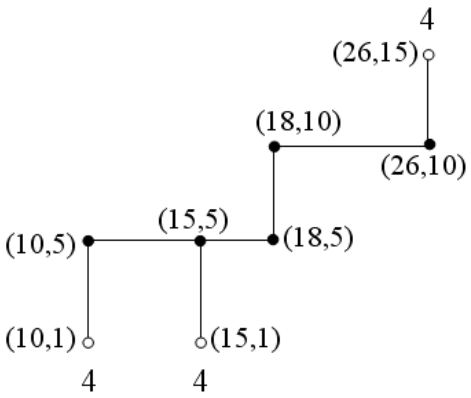
Format:

.begin net_name

.H lef_x lef_y rig_x

.V bot_x bot_ _y top_y

.end



Example. The above figure displays the routing of net 4 (three pins and 5 vias).

.begin 4

.H 10 5 18

.V 10 1 5

.V 15 1 5

.V 18 5 10

.H 18 10 26

.V 26 10 15

.end

Note that. There is no fixed wire segment order. A via is induced by the intersection of one horizontal and one vertical wire segment of the same net. If two wire segments of different nets with the same direction overlap, a short error occurs. The utility to verify the correctness of your routing result will be released soon.

Graphic: draw the routing results on the screen. Since the Deutsch difficult is large, you may partition the routing area into several sub-areas and use key-pressing to print each sub-area's routing result sequentially.

Ranking

A. can run small case but fail in Deutsch difficult (cannot generate routing result) – 60

B. Ranking is mainly based on the correctness of routing results and the required number of tracks to complete the routing. If the routing result is correct, ranking is categorized into following sets: ≥ 24 tracks – 80, 23 tracks – 85, 22 tracks – 89, 21 tracks – 94, 20 tracks – 97, 19 tracks – 100. If the routing results has some violations, you can get at most 79 points.

C. If two routing results demand the same track number, the bonus is determined by the total number of vias and total wirelength. For instance, A and B demands 21 tracks, A's wirelength is 300 while B's wirelength is 310. A can get a score of 96 while B gets a score of 94.

D. Grading policy for delay submission
   - Within one week:
     - **if** score >= 80, score = MAX(score-6, 80);
       else score -= 3;

Due date: 1/12