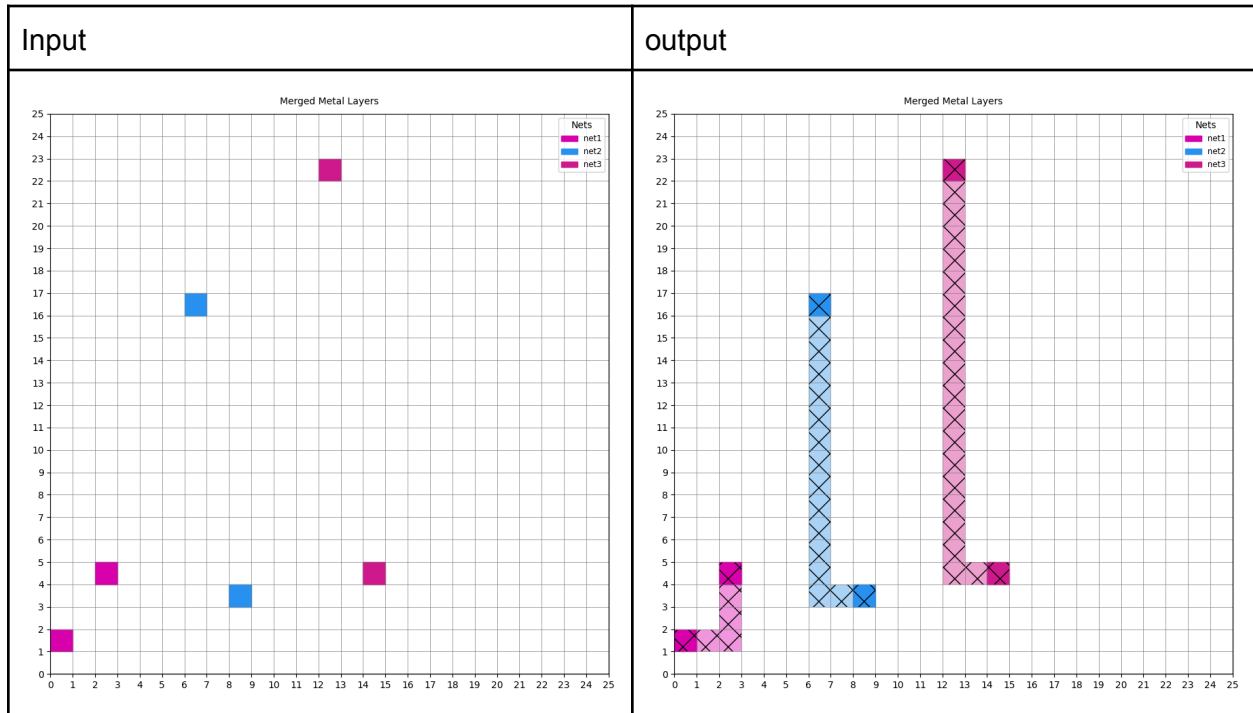


Test Cases

Test Case 1



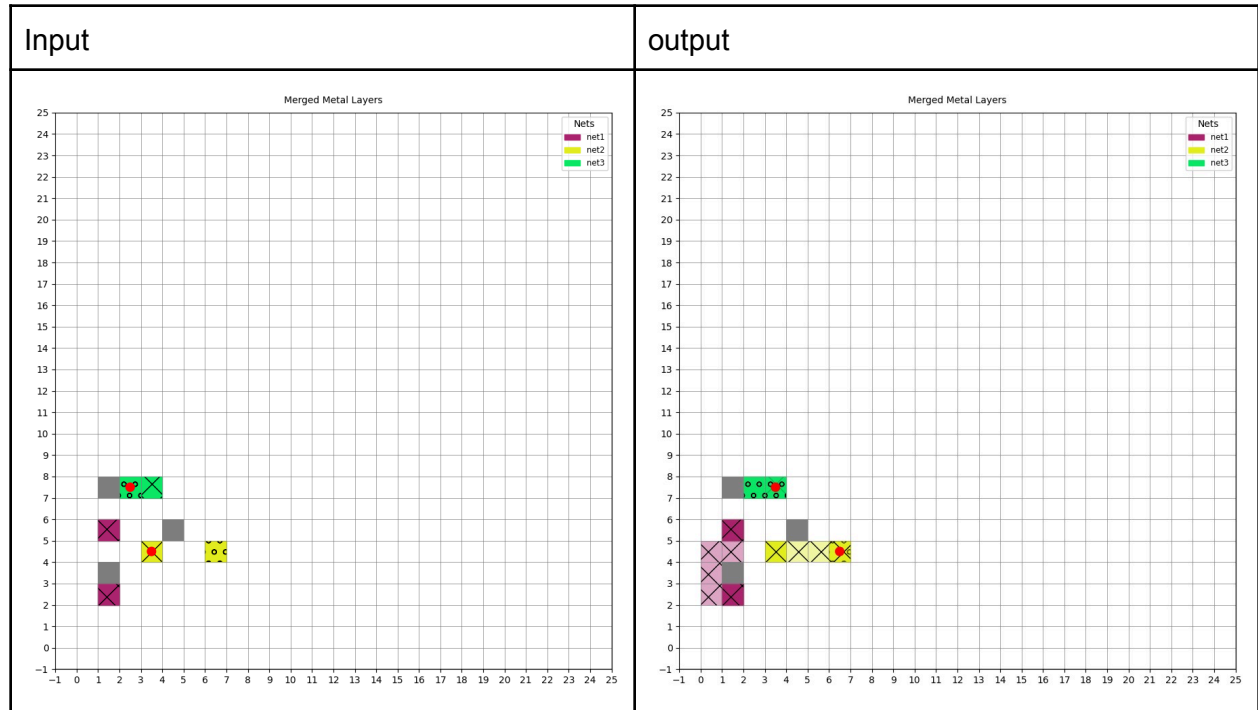
25x25 grid

No additional penalties for using vias or going against the preferred path

No obstacles

3 nets, each having 2 pins, and all pins are on layer 0

Test Case 2



25x25 grid

No additional penalties for using vias or going against the preferred path

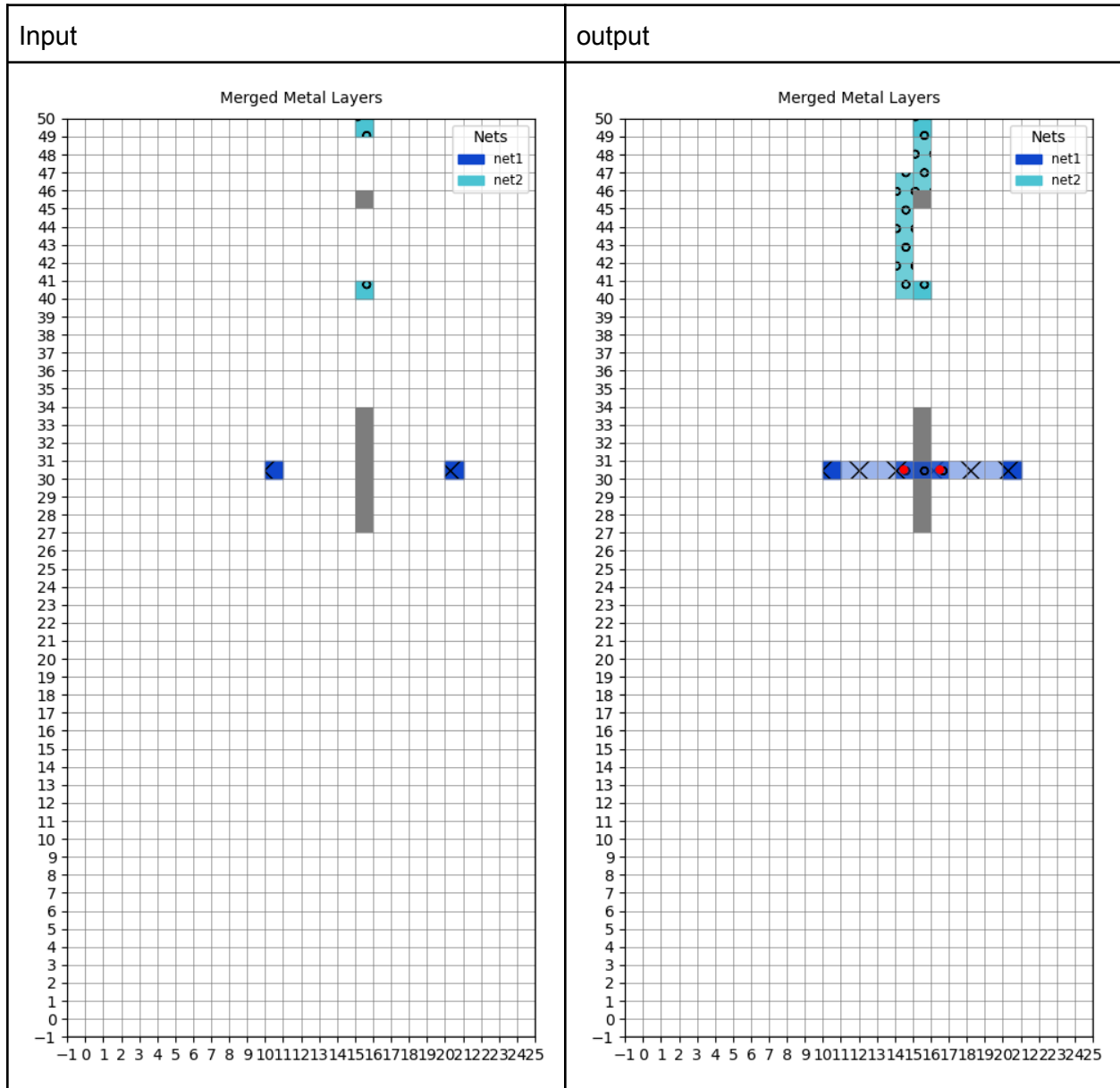
Obstacles are present on the direct path between the pins

3 nets, each having 2 pins, and the 2 pins are either on the same x value or the same y value

1 of the nets has both pins on the same layer

2 nets have the pins on different layers

Test Case 3



25x50 grid

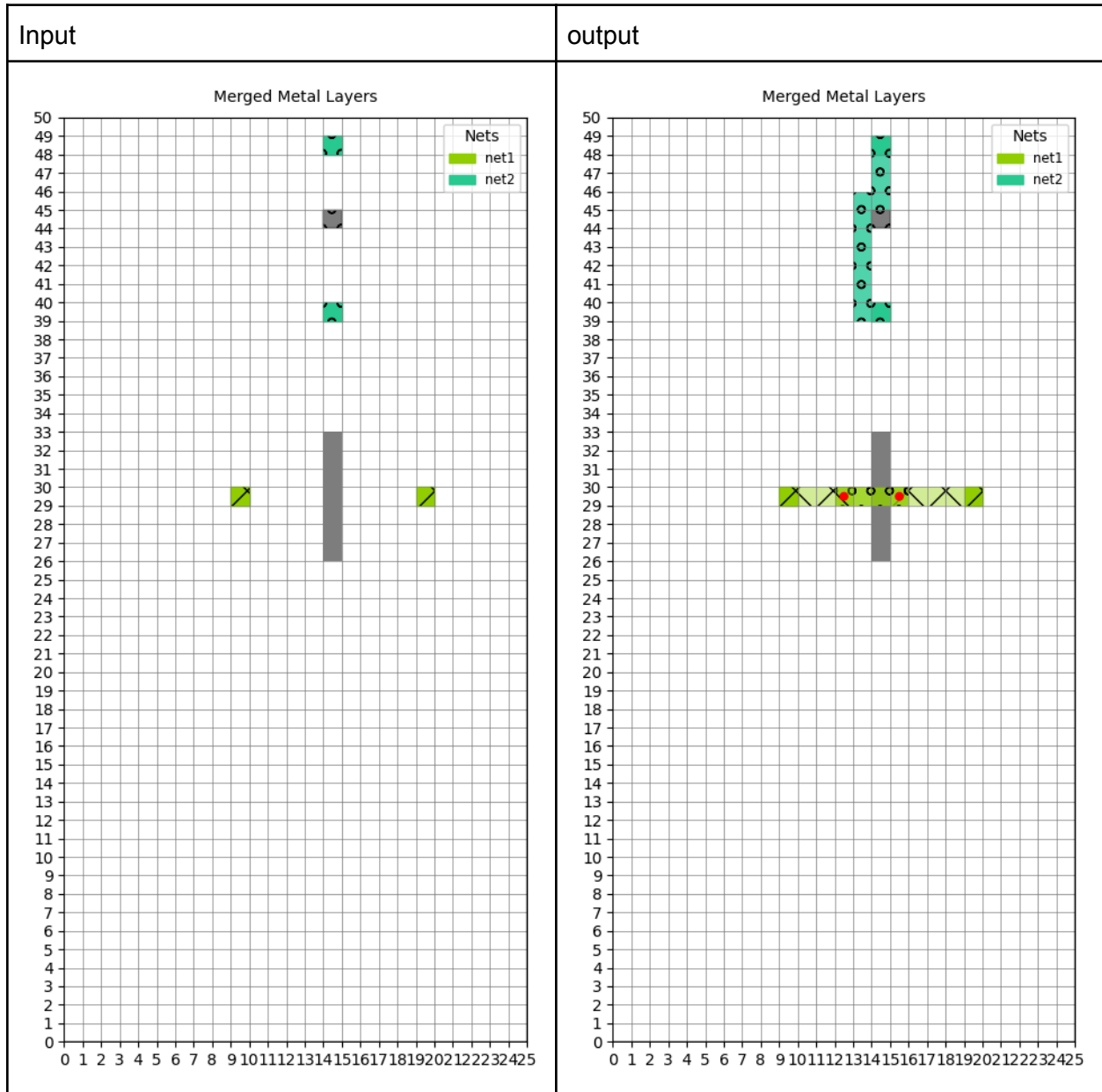
Penalty for using a via is 5

Penalty for going against the preferred path is 3

Obstacles are present. Some are expensive enough to make using a via more effective for one net. Others make the router choose to go against the preferred path for another.

2 nets, each having 2 pins, and the pins of each net are on the same metal layer

Test Case 4



25x50 grid

Penalty for using a via is 3

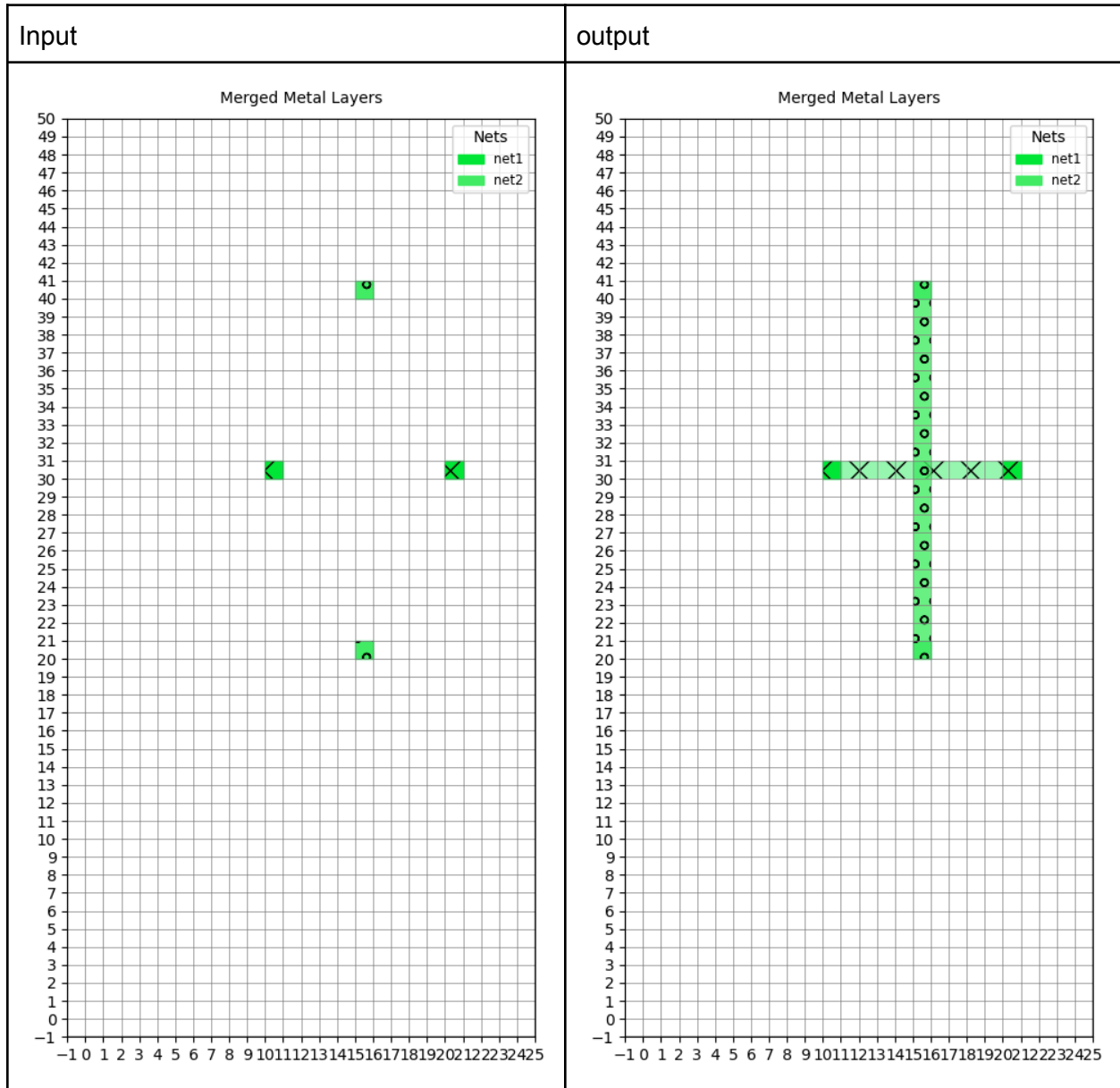
Penalty for going against the preferred path is 5

Obstacles are present. Some are expensive enough to make using a via more effective for one net. Others make the router choose to go against the preferred path for another.

2 nets, each having 2 pins, and the pins of each net are on the same metal layer

(The result should be the opposite of test 3)

Test Case 5



25x50 grid

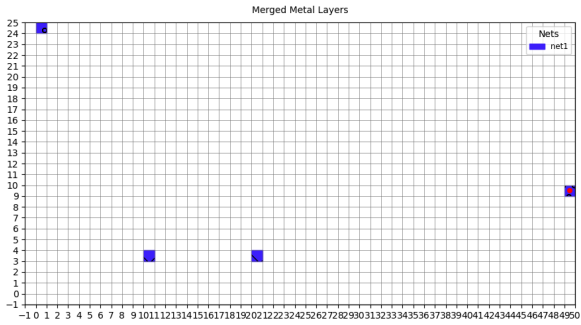
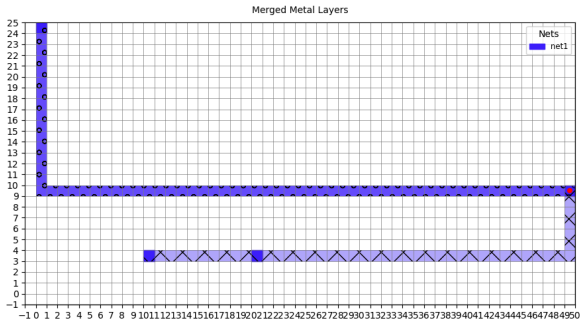
Penalty for using a via is 5

Penalty for going against the preferred path is 3

No obstacles. The wires of one net will become the obstacles for another

2 nets, each having 2 pins, and the pins are on the same metal layer

Test Case 6

| Input | output |
|---|--|
|  |  |

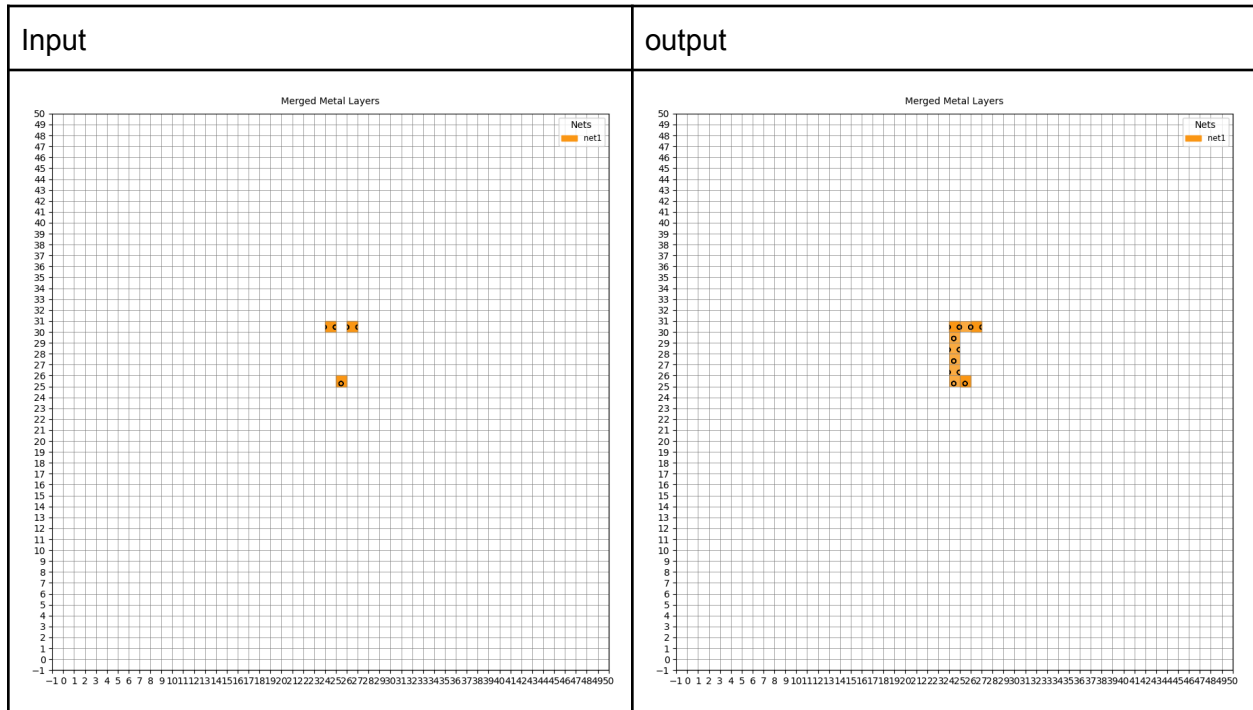
50x25 grid

No additional penalties for using vias or going against the preferred path

No obstacles

1 net with 4 pins, 2 of the pins are on one layer and the other 2 are on the other

Test Case 8



50x50 grid

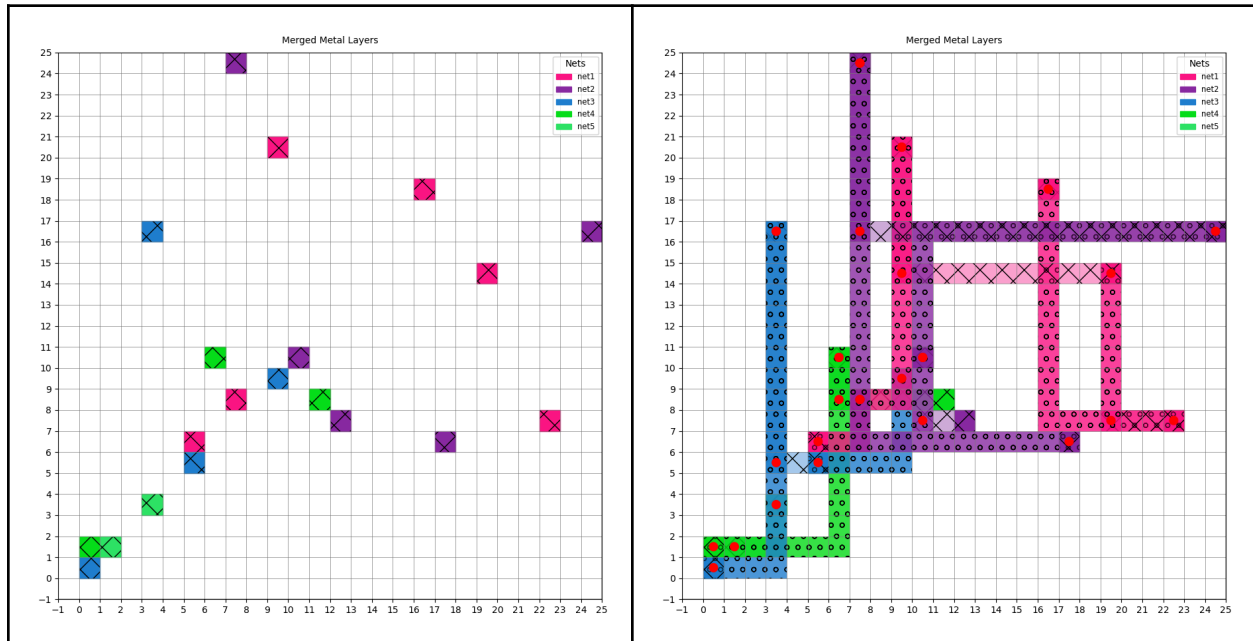
Penalty for using a via is 20

Penalty for going against the preferred path is 10

No obstacles

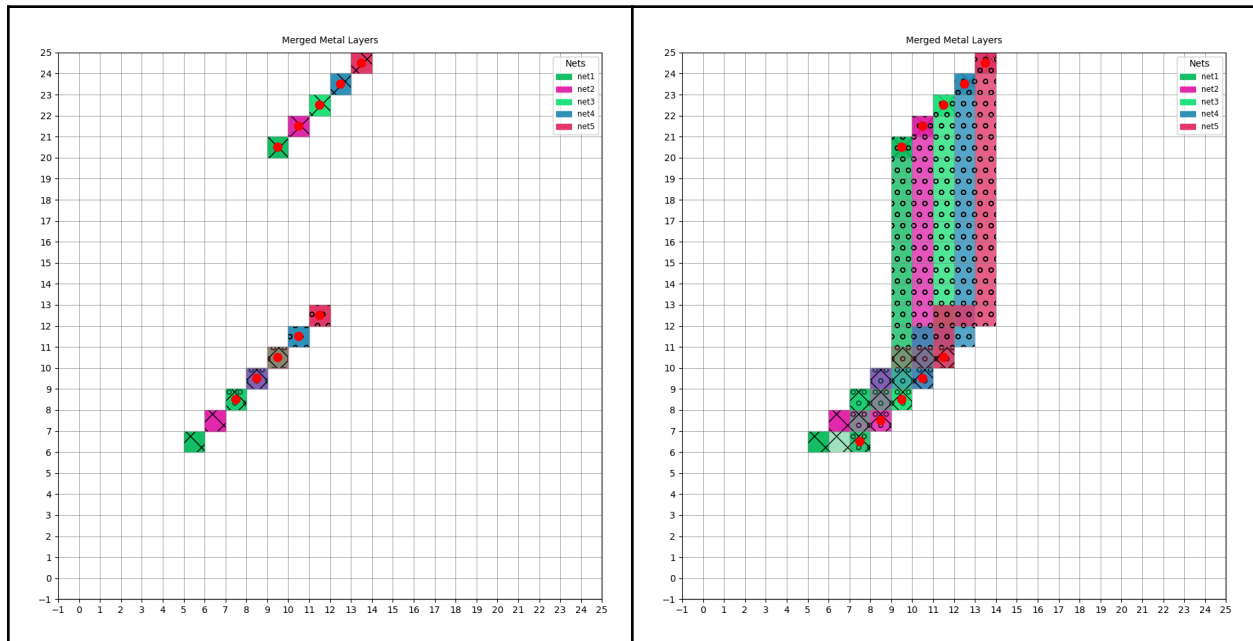
1 net having 3 pins, and the pins are on the same layer with a fork in the road

Test Case 9 (Bonus)



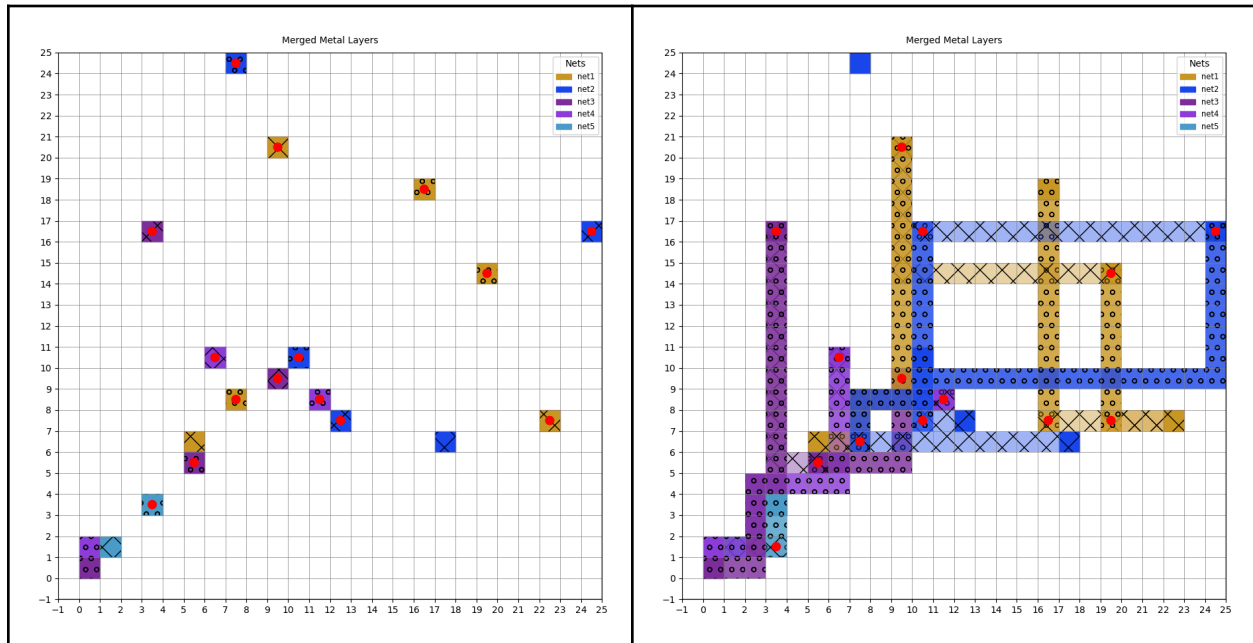
- 25x25 grid
- Penalty for using a via is 10
- Penalty for going against the preferred path is 4
- No obstacles.
- Have net1 have 6 pins, net2 have 5 pins, net3 have 4 pins, net4 have 3 pins, net5 have 2 pins to test ordering (all pins on the same layer)

Test Case 10 (Bonus)



- 25x25 grid
- Penalty for using a via is 10
- Penalty for going against the preferred path is 4
- No obstacles.
- 5 nets with 3 pins each to test ordering on equal pin counts

Test Case 11 (Bonus)



- 25x25 grid
- Penalty for using a via is 10
- Penalty for going against the preferred path is 4
- No obstacles.
- Have net1 have 6 pins, net2 have 5 pins, net3 have 4 pins, net4 have 3 pins, net5 have 2 pins to test ordering (have pins on different layers)

Test Case 12

