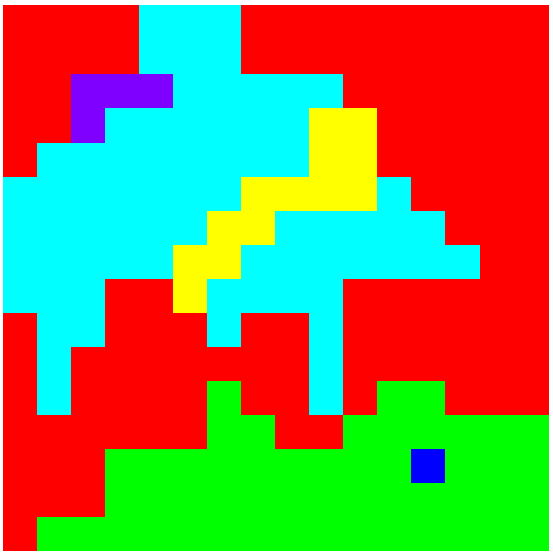
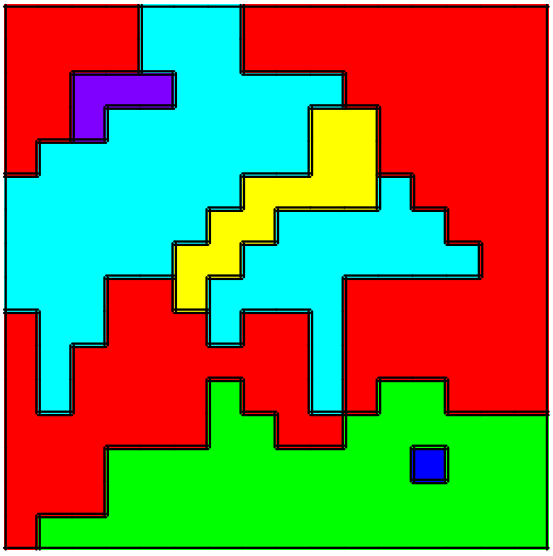
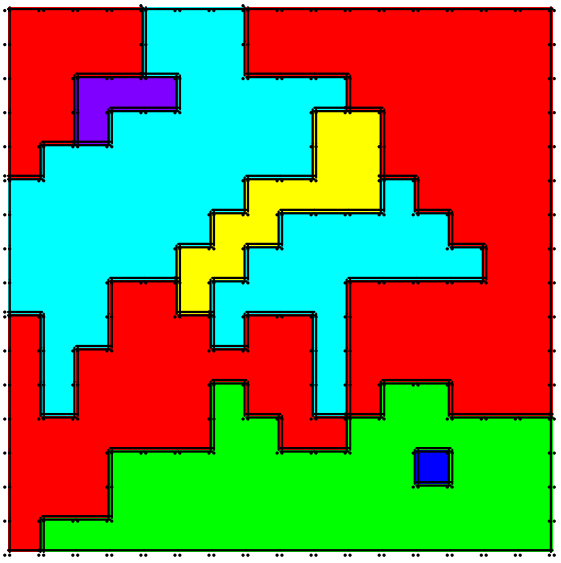
input 16x16 pattern with 6 materials:



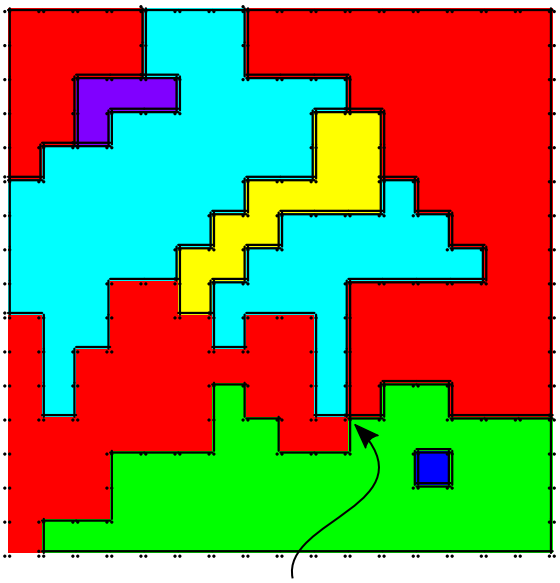
After get_edges we have a vector of shared edges. Each edge is set by two integer local coordinates and two materials it contacts to. Below picture shows pair of edges for each shared edge with a ghost each shifted towards corresponding material. If no material is set then ghost edge is skipped.



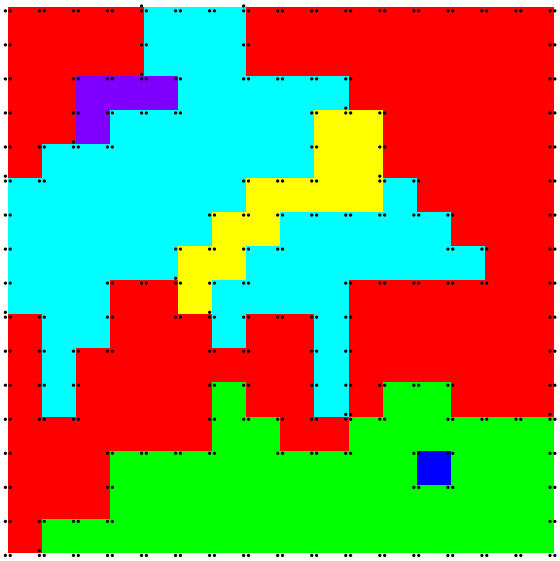
After get_nodes a 16x16 mapping is created to provide relationship between edges. Node points to 4 possible adjacent edges. Since edge knows it's integer coordinates it is easy to get to node from edge and then to next edge in loop.



The routine get_faces takes first edge that still have any material and starts to advance a loop using shared nodes mapping. The direction is chosen to have current material on right hand side.
NOTE: edges are modified on that stage: materials are removed during travel over a loop (see left bottom red face):



In quad node a 90° turn is forced. After all faces are done edges has no adjacent materials anymore:



For each face makeHoles is called. This routune eats faces from periferial pixels up to holes and then makes loops the same way as it was done to create faces.