Algorithms

First, filter the stamps of equal area，then reserve those which has the most "1" in the same area. Assuming that there are T stamps whose areas are different. Firstly sort the stamps by the area (N*M) from large to small, then compute a weight by using the stamps according to coordinates X: (1...n), Y (1...m). Computation rule is that if stamp can repair a point, weight will be added 1 to it; if stamp damages the picture which needs repairing, weight should be subtracted 1 from it. Then find a maximum weight, use the current stamp Ti to cover and to mark the repaired area which cannot be covered by the stamp Ti twice. Repeat this operation on Ti stamp for K times until all the stamps have been executed. After that, if there is any point which has not been repaired, we use 1x1 stamp to repair it until the image is fully restored.

Note:

N and M refers to the length and width of an image, N * M refers to the image area which needs to be repaired.

Ti is the No. i stamp (i less than T) after filter.

K is the image area which needs to be repaired.

Programming Language:

Algorithms are implemented by using C++ and deployed in Windows platform.