Assignment # 2
(CLO2 -> PLO1)
Digital Image Processing
Region Filling
Submission Deadline: 7th Jun 2017

Region filling is a process in which holes in objects present in an image can be filled with the same pixels that the object comprises of.

If all boundary points of an object are labeled 1 and non-boundary points are labeled 0, then the following procedure fills the region:

1. Start from a known point p (which lies inside the boundary) and taking $X_0 = p$
2. Then taking the next values of X_k as:

$$X_k = (X_k \oplus B) \bigcap A^c \qquad k = 1, 2, 3, \cdots$$

   where B is a suitable structuring element.
3. Terminate iterations if $X_{k+1} = X_k$.
4. The set union of X_k and A contains the filled set and its boundaries.

Task:

Write the code for region filling and run it on the image below: