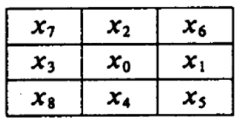
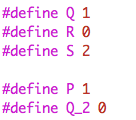
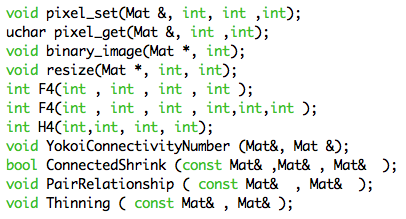
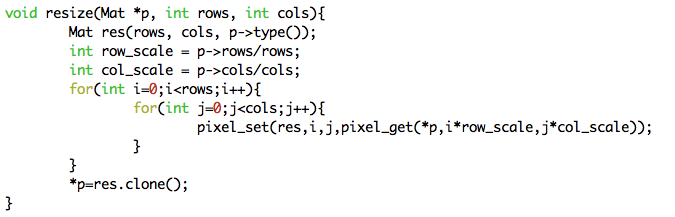
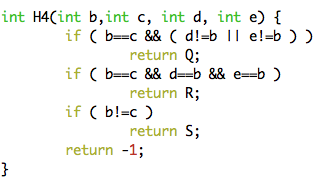
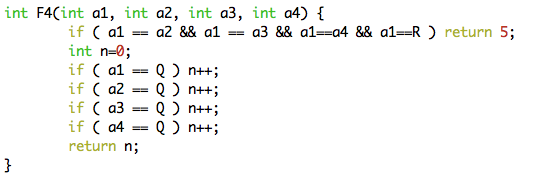
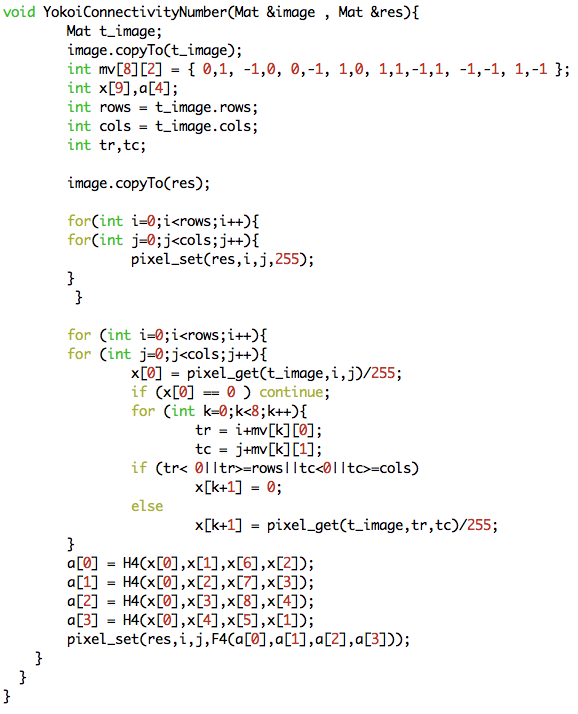
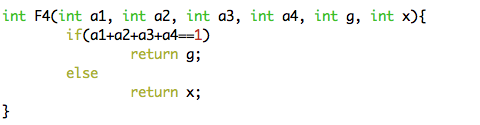
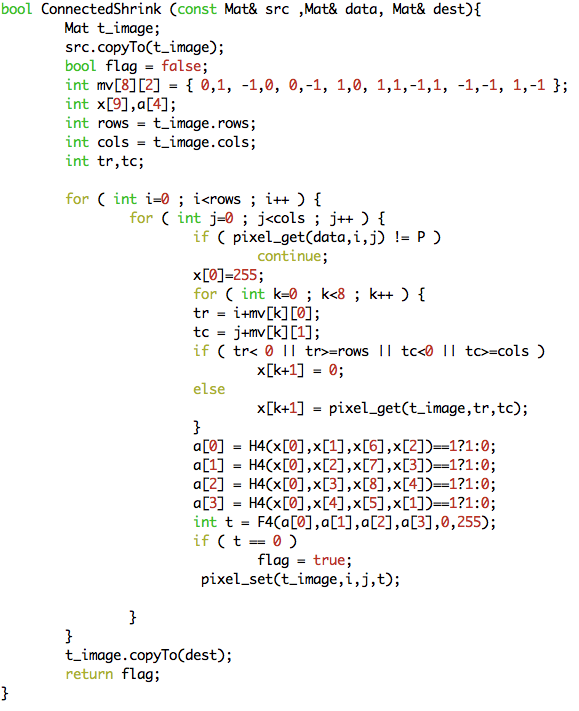
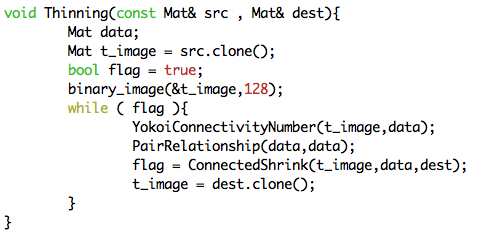
Computer Vision hw\_7

By R01922124 許彥彬

1. Intro of this homework:   
   This assignment is about to do “thining” to “Lena.bmp” with size 64x64. Thining includes three parts of steps, Yokoi connectivity, pair relationship and coneected shrink. I will discuss them in detail respectively. The neighbor is define as the figure shown below.  
     
     
     
     
     
     
     
     
   Last homework I defined three parameters Q, R, and S as 1, 0 and 2. In this homework there are two more parameters, Q\_2, P and they are 0 and 1 respectively.  
     
   This work includes some functions as follows.  
   
2. Resize
   1. Code:  
      
3. Yoikoi connectivity:
   1. Formula:  
      ，，，
   2. Code:  
        
        
      
4. Pair relationship:
   1. Formula:
   2. Code:Note that there is already a Q in Yokoi connectivity, so I define q in here as Q\_2 instead.
5. Connected Shrink
   1. Formula:  
      Note that the h function is very similar to Yokoi connectivity. So I will use the same function and do a little modify. If the return number from H4 is 1 assign 1, else assign 0.
   2. Code:  
        
      
6. Thinning Operator
   1. Idea: Involve the previous three operators.
   2. Code:   
      
7. Result:  
    
8. Appendix
   1. build\_all.sh  
      “sh build\_all.sh” will automatically compile the code in terminal.
   2. R01922124\_HW7.cpp  
      source code
   3. lena.bmp  
      original lena image
   4. binary\_lena.bmp, thinning\_lena.bmp  
      results for this homework
   5. R01922124\_HW7.pdf  
      report