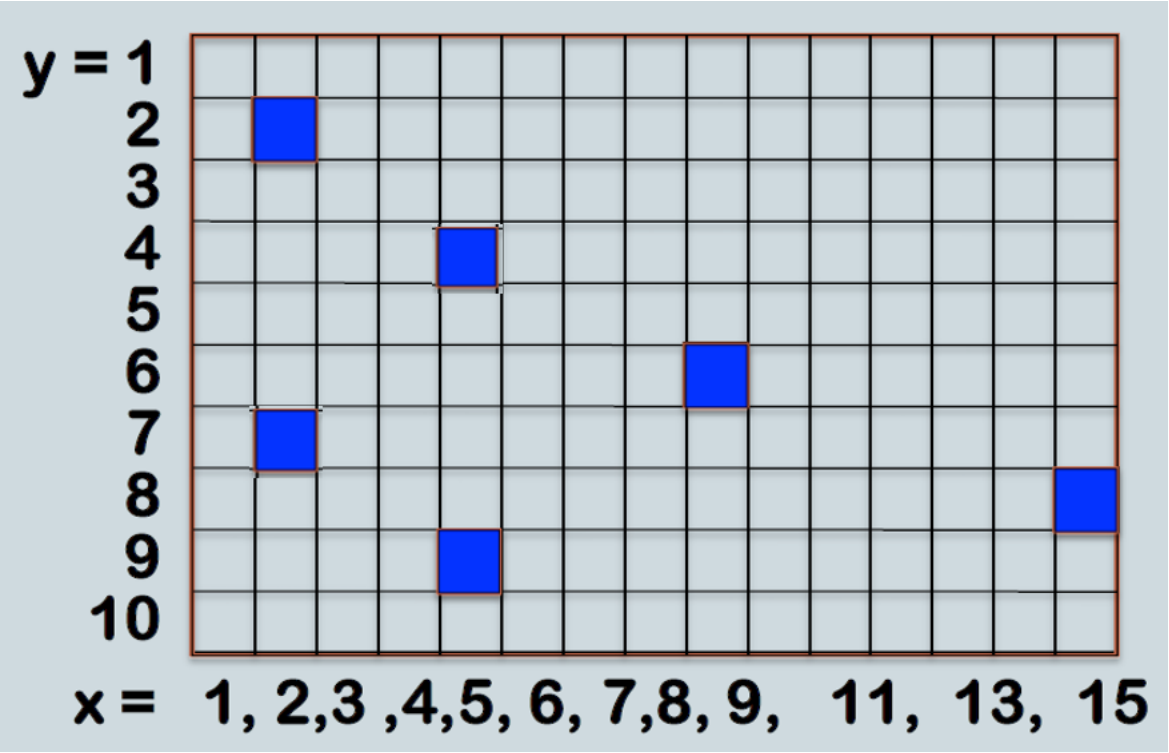
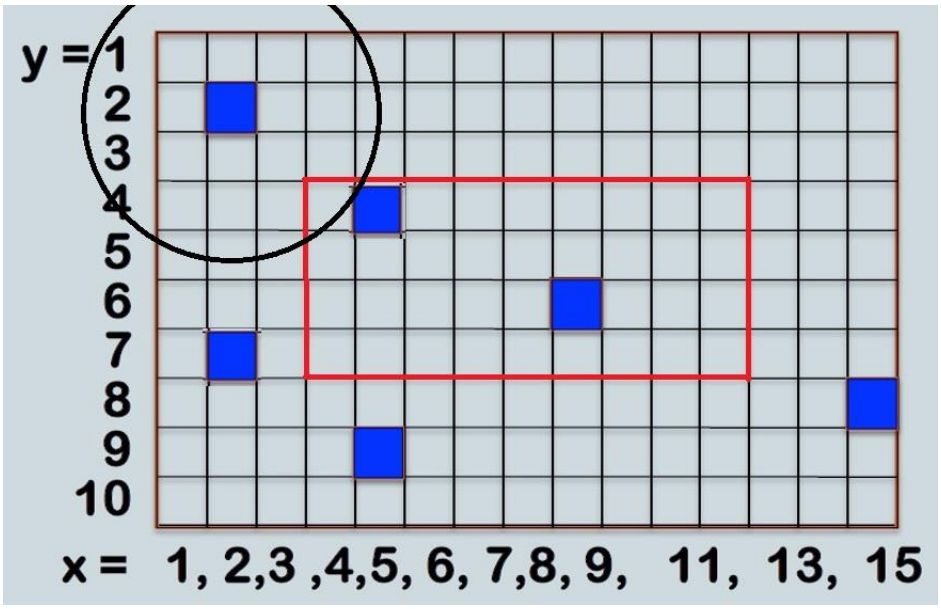
Professor Xin Chen, Biometrics, Fall 2015
Assignment: Iris Segmentation

1. A toy example of edge pixels of an iris image. Please detect the circle boundary with r = 3 pixels using Hough Transform i.e. show the Hough space voting process and plot the fitted circle on the original edge image.

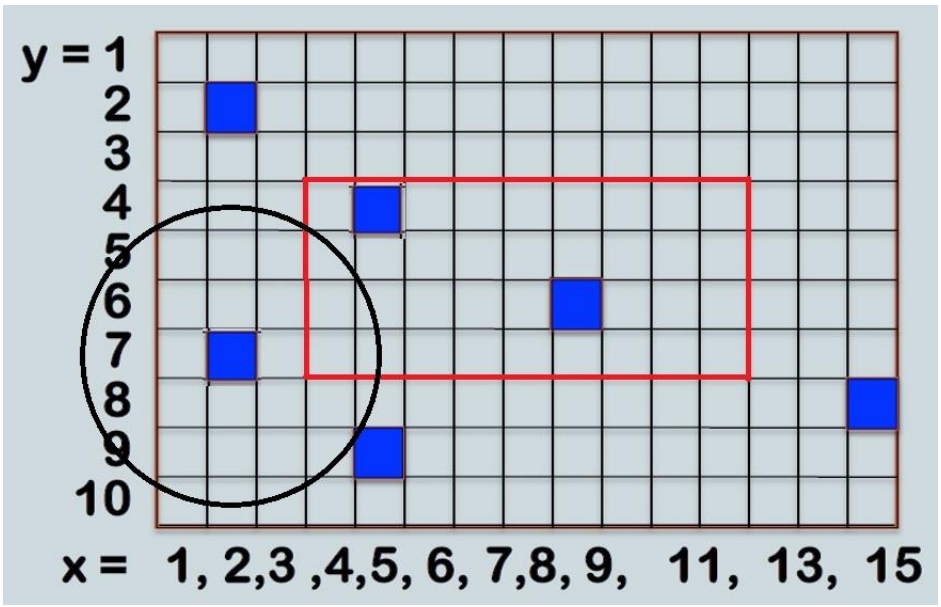


Answer:
Voting steps



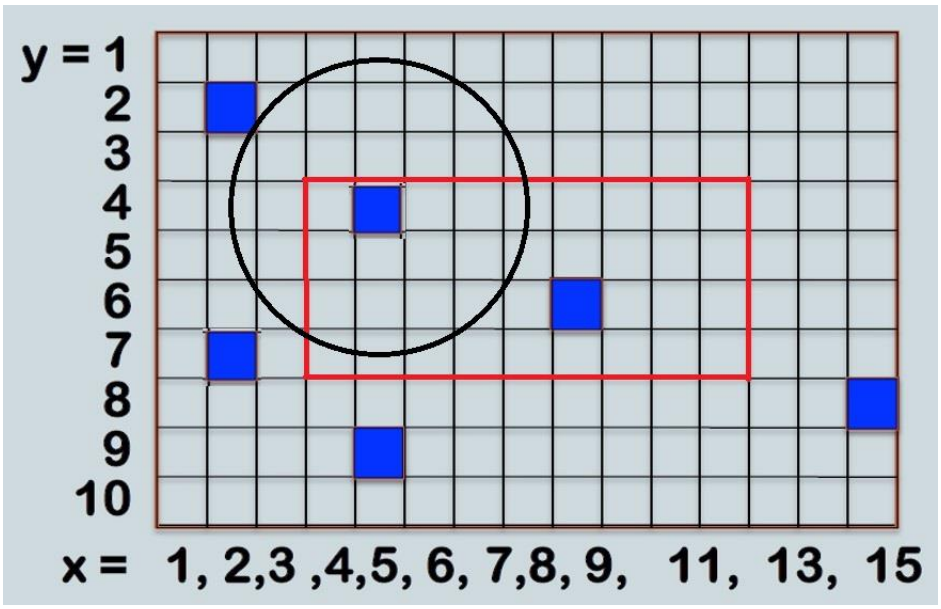
1st vote

4	1								
5									
6									
7									
	4	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**



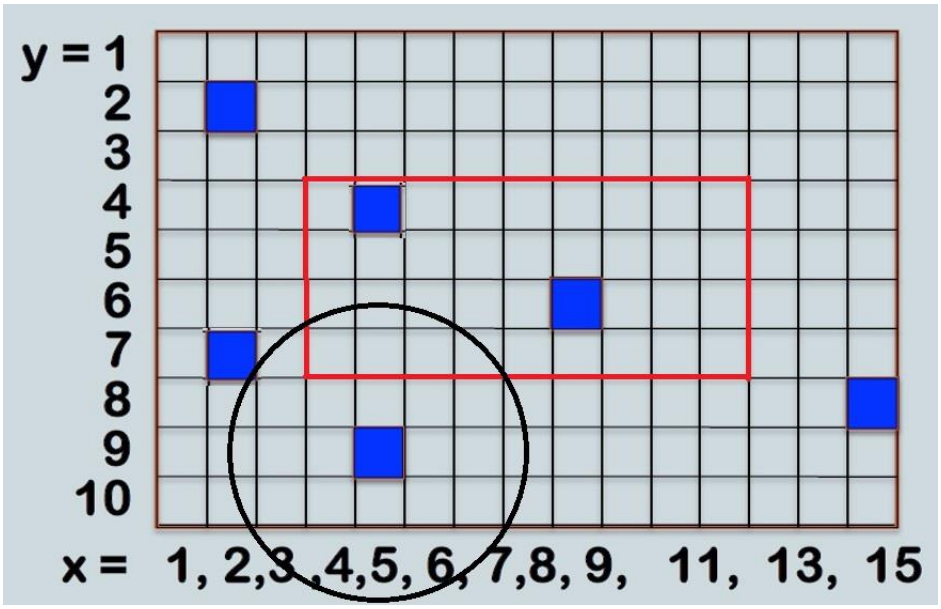
2nd vote

4	1								
5	1								
6		1							
7		1							
	4	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**



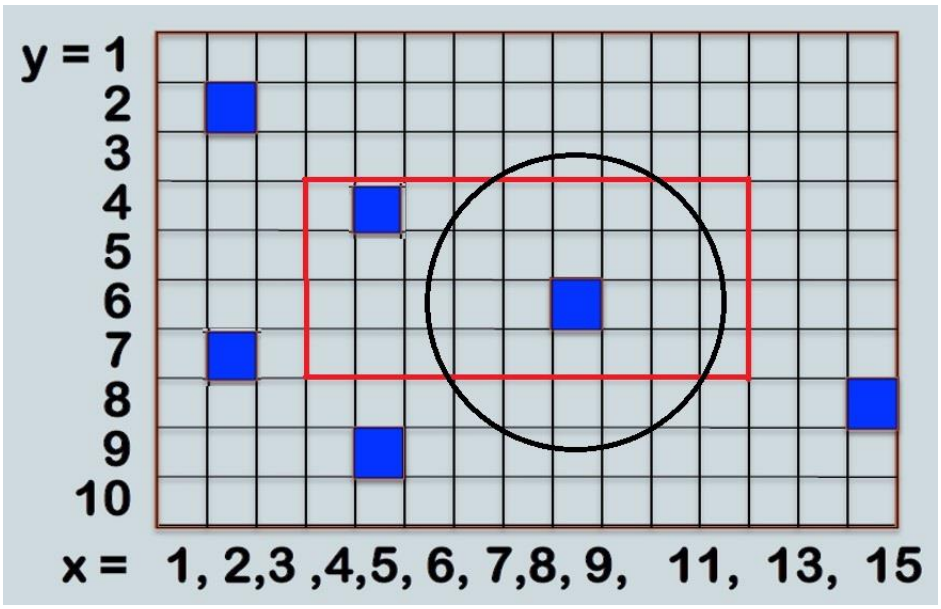
3rd vote

4	1				1				
5	1				1				
6		1		1					
7	1	2	1						
	4	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**



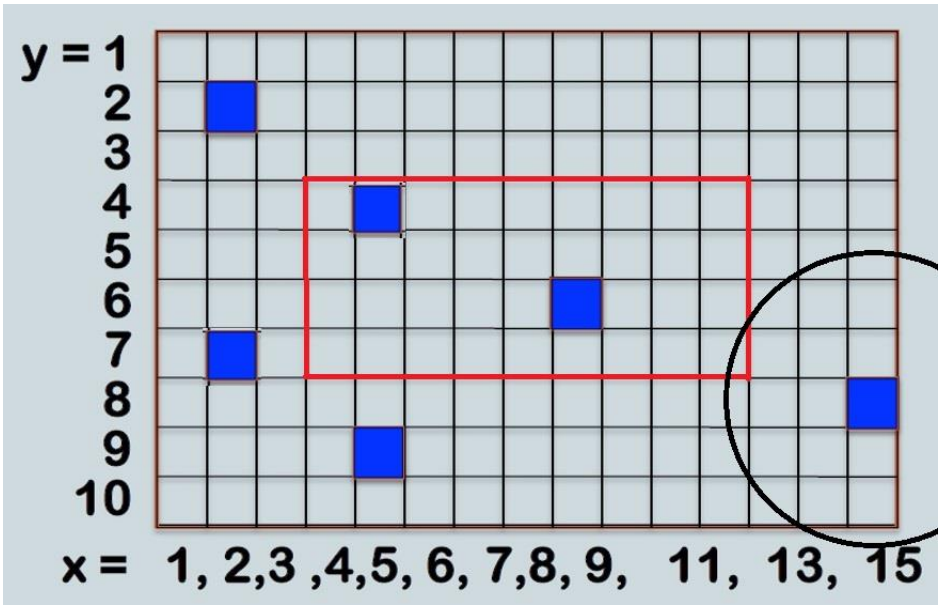
4th vote

4	1				1				
5	1				1				
6	1	2	1	1					
7	1	2	1	1					
	4	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**



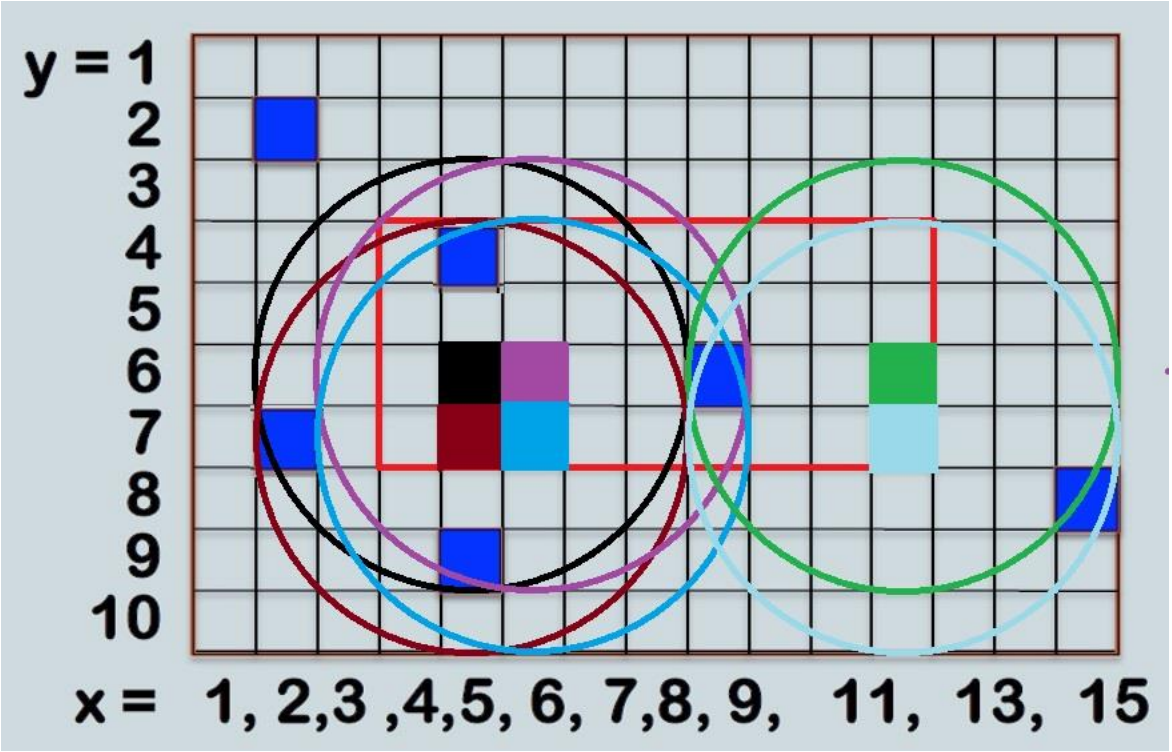
5th vote

4	1			1	1			1	
5	1		1		1				1
6	1	2	2	1					1
7	1	2	2	1					1
	4	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**



6th vote

4	1			1	1			1	
5	1		1		1				1
6	1	2	2	1					1
7	1	2	2	1					2
	4	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**



final result

2. Write a program to automatically extract iris from all the images attached using either hough transform or integro-differential operator. Please submit an executable and your result images showing the circular boundaries.