Homework
Simple Object Tracker

Given two frames of images I(x,y,t) and I(x,y,t+dt) with 7x7 resolution. Write a short python program to perform the base-line object tracking algorithm discussed in the lecture:

(1) make sure your code can read txt file with 7 rows and 7 columns for the first image, and print the input txt file on the terminal.

(2) prompt the user for the input of the threshold T, and then based on the T value to binarize the test image, and then print the binarized image on the terminal;

(3) compute centroid (x_bar, y_bar) for each binarized image and print the result to the terminal;

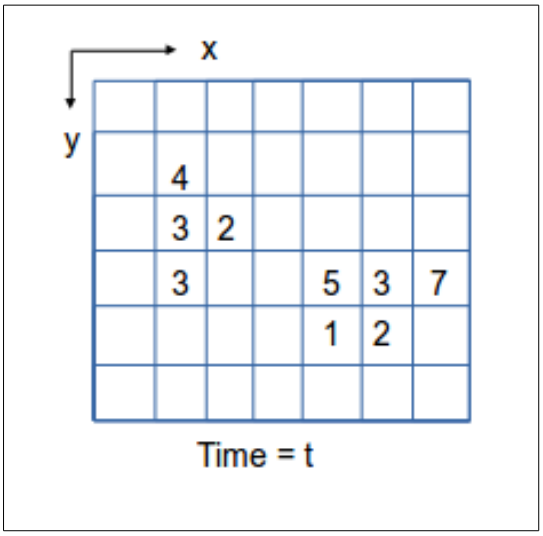
(4) create registration table, and print the registration table with time index, say, time = n;

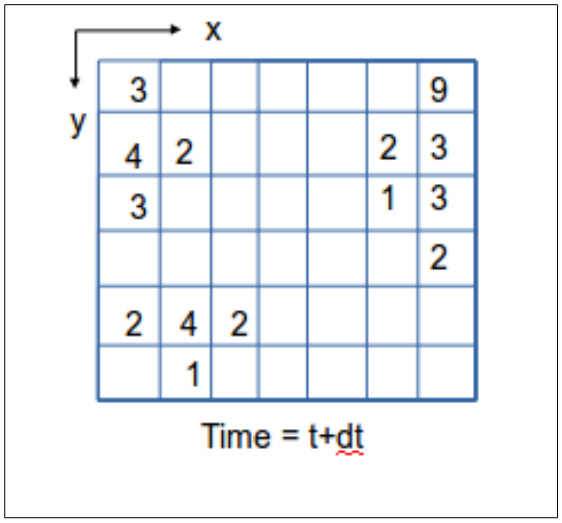
(5) Read the second txt file image, and repeat (1) to (4);

(6) compute distance for each object on image at time t (or n) to each of every objects on image at time t+1 (or n+1);

(7) Find matching object from image at time t (or n) to the object on image at time t+1 (n+1) based on the minimum distance criteria;

(8) update the registration table once the matching is established (e.g., tracking is established), then print the registration table.




x
y
3 9
4 2 2 3
3 1 3
2
2 4 2
1
Time = t+dt