ECE368 Project5 Report Yinuo Li

I used Adjacency-list to store the weight from vertex to vertex. And the vertices in my data structure are the '1's in the same column which are linked together.
An adjacency-list representation is as follows:
- A linked list of all vertices of the graph
- Each node has a list of emanating edges
- Each edge links to its graph vetex
- The weight field in each edge stores the distance of the two vertices

I used a two dimensional array to store the vertices. Suppose c is the column difference between two vertices,r is the row difference between two vertices, and d is the difference between c and r.
If d == 0; w = 2r;
if d = c – r > 0; w = 2r + 2d – 1;
if d = c – r < 0; w = 2c – 1 + 2d;

I used BellmanFord Algorithm to calculate the turns.

Time complexity of construction of the data structure: O(v^2)
Time complexity of computation of the turns: O(v^3)