# H-Problem 1 [The Matrix]

Neo has accepted Morpheus orders to guard the Matrix from Agent Smith. Since Neo is "THE ONE" he has acquired Smiths power of making clones inside the Matrix. As a part of the assignment Neo has to upload his clones into the matrix. Now the clones that can be uploaded into the matrix have been affected in a way that if they see each other they all will be destroyed simultaneously, so obviously we do not want that to happen. **Formulate and model above problem as an ILP. You can assume that The Matrix is a 3D world of N \* N \* 1 dimension. Use the fact that a clone can look only in the line of sight of its eight neighborhood and at a coordinate only one clone can be placed. Maximize the number of clones that Neo can send into the Matrix and print one of those valid configurations. (By configuration we mean that print The Matrix with 1 being the place where a clone can be placed rest are 0s).** Solve the problem for N = 5 and 6.