System Programming 2 - Assignment 2

ReadMe

Full name: Daniel Kuris

ID: 214539397

In this assignment, we added the operations for the graphs. I will explain the main functionality and checking I did in each.

Firstly, I added a function – validGraph.

So that after each operation I'll be able to check whether my graph is now empty, not squared, or has non-zero diagonal values. Which should take care of certain cases.

- ' + ' - The operator sums each cell of current graph and another graph and puts it in a new cell of the result graph.
- ' – ' – The opposite of ' + '
- ' += ' – Changes the current graph's weights of each edge by the value
- ' -= ' – Opposite of +=
- ' Unary -,+ ' – Multiplies the cell by either 1 or minus 1
- ' ++ / -- ' – Increases the weights of each edge by 1 or decreases by 1
- ' * ' – Multiplies scalar or a matrix. In case of a matrix; after the multiplication has been concluded, the diagonal will be set to 0 so that multiplication will be valid.
- isContainedIn – Is a function I made as an helper to check if a matrix is contained within another matrix. In case the requested matrix is bigger than the matrix that is supposed to contain it, we return false.
- ' < / > ' – In case a matrix isContainedIn another matrix, then it is ' less ' than the matrix that contains it. In case no matrix contains the other – the number of edges are being compared
- ' <= / >= ' – Same logic as bigger/less with equal

- ‘ != ‘ – If not each and every cell is exactly the same
- ‘ == ‘ – If each and every cell is exactly the same
- visualGraph – A function that visualizes a graph by indicating its rows, columns and values in each cell by a presentable view.

Notes:

1. I was unsure as to if I should implement division, because I saw a message in the forum that stated we do not need to implement it. Also, the assignment did not mention such thing in the “ read me “ file, so I did not implement division.
2. I was confused by the request to compare the old algorithms functions to current. The algorithms themselves didn’t change, hence any usage of the current operations and then calling a function on operated graph will result in an expected return value.