Wiki sheet for task 3 19.1.2020 Written by: Ofir bador ID 302639281 && Elnatan Berenson ID 203641774

General orientation: At last project [2] we build many classes in many packages – in dataStructure: 'Node' which realized 'node\_data', 'Edge' which realized 'edge\_data', 'DGraph' which realized 'graph'. In algorithms: 'Graph\_Algo' which realized 'graph\_algorithms' and NodeComperator which sort the nodes. Finally- Graph\_GUI which response to present draw of Graphs. (include their tests)

To build this project we used HashMap structure. The first is for Nodes, second for Edges and the third is for connect between nodes to edges.

In the Node class: there are many nodes constructors (their data – key, weight and location), getter&&setter.

In the Edge class: there are many edges constructors (their data – src, dest and weight), getter&&setter.

In the DGraph class: there are many methods – constructor which beild a graph by 2 Array inputs – node&edge. In addition, methods which add/remove node, remove edge, function which connect between 2 nodes (new edge) and init weight. Collections of nodes and edges.

In the Graph\_Algo class: there are two main function 'isConnected' && 'shortestPathDist' – those realized by BFS && DIJKSTRA algorithms. In addition we build Comperator for sort the edges by their weights.

In the Graph\_GUI class: this is a new class in this project. The role of this class is to draw graph by GUI INTERFACE. The interface init by many parameters like width or height size screen, the colors lines/text etc'

At this project [3] we build a robot maze game. there is 23 cases of game. Each game have 1 of 5 kinds of maps, different number of robots & fruits. the purpose is to get the max points by collect fruits (each fruit equal other different score). the time of the game is 30 or 60 seconds. the robots moves on edges of graph. when one of the robots pass by any fruits, the fruit is lost, and shown on other random edge. each robot has a score of himself. the total game score is the sum up of all robsots score.

There is a option to choose play manually or automatically.

good luck & enjoy playing.

\*At this task we use in the function that we built at tast [2].