Lab 05: Recursive Algorithms

- TASK 03

Procedure

1) A 20x20 maze is generated.
2) The maze is populated (Write 1) in random number of cells and random positions in the maze.
   a) The random number of cells <= 400
   b) The random positions is: 0<=x<=20 & 0<=y<=20
3) Then find whether there exists a path between (0, 0) and (19, 19), If so count them.
4) Then go to step 1 and repeat again for several number of times (in my case 10^{10} simulations).

This procedure is followed for 5000, 10^4, 10^5, 10^6, 10^7, 10^9, 10^{10} and average probability reached is 0.113.This probability suggests us that in 2^{400} all possible mazes there can be around $2^{390.2}$ mazes where there can exists a path between (0, 0) and (19, 19).

$$\frac{2^{390.2}}{2^{400}} \text{x100= 0.113}$$