

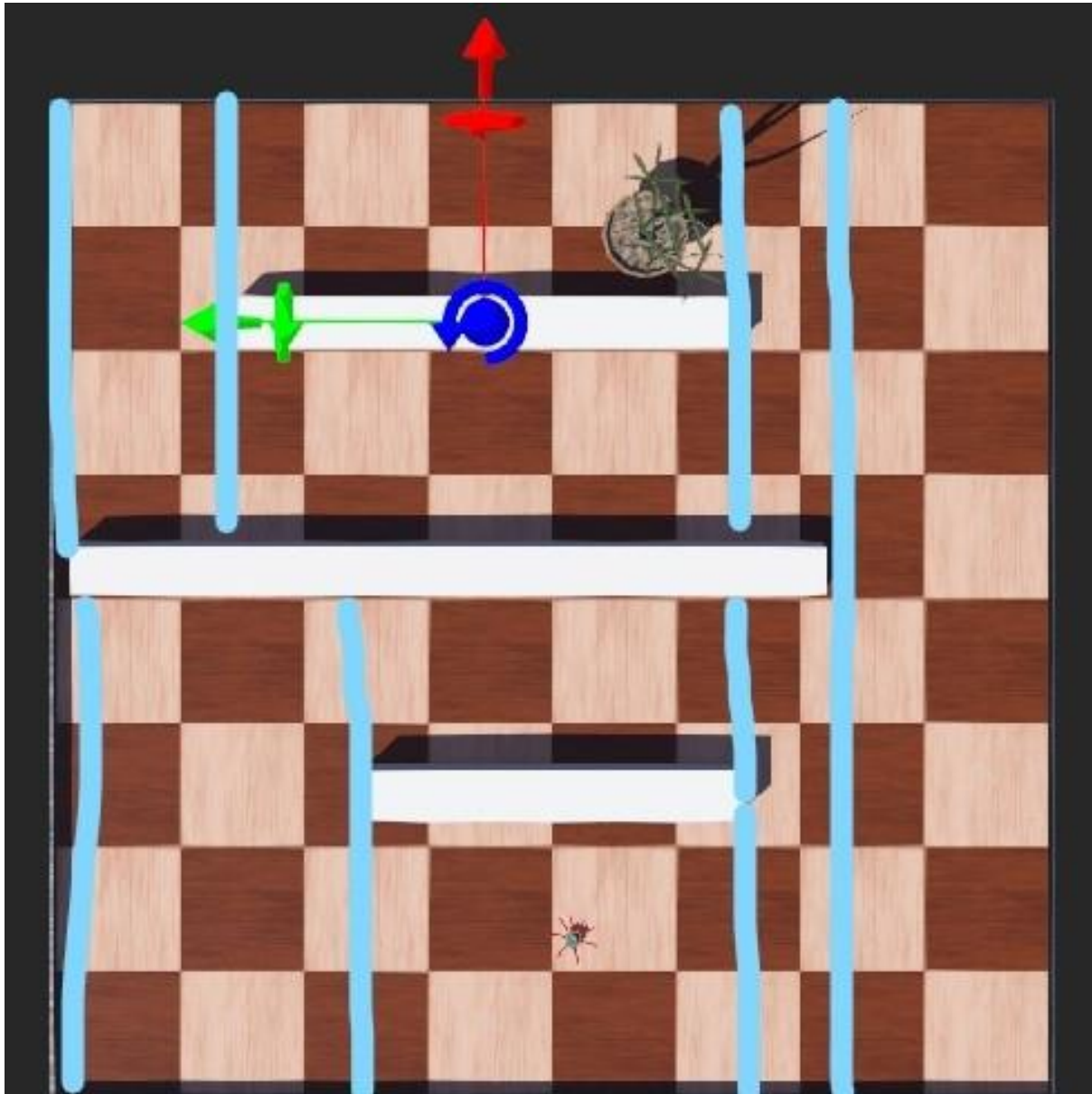
Mid Sem Exam

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19353

Question-1

The trapezoidal decomposition of the cell for Bug_2 environment is below



Here, we can see we have 9 cell, it takes 10 sec to cover all the cell.(taking 1 sec to travel every cell)

Question-2



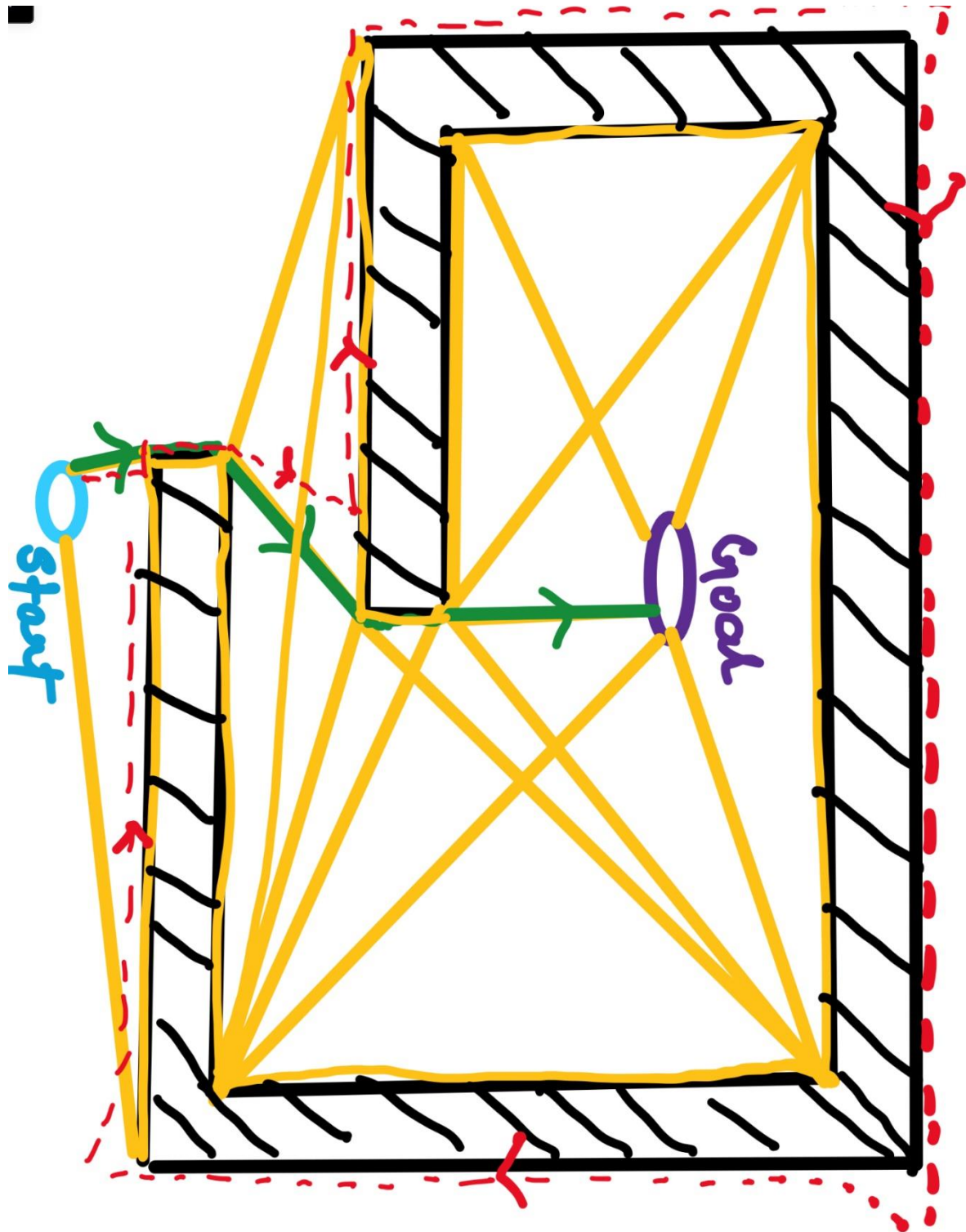
Here, in case-A (when the robot from cell A), it has to cover all the cells and take time T

In second case, case-B (when robot starts from cell B), it doesn't have to cover cell A, hence take T' time. Time taken (T') = 9 sec

So, $T' < T$

Question-3

Visibility curve for bug_0 algorithm

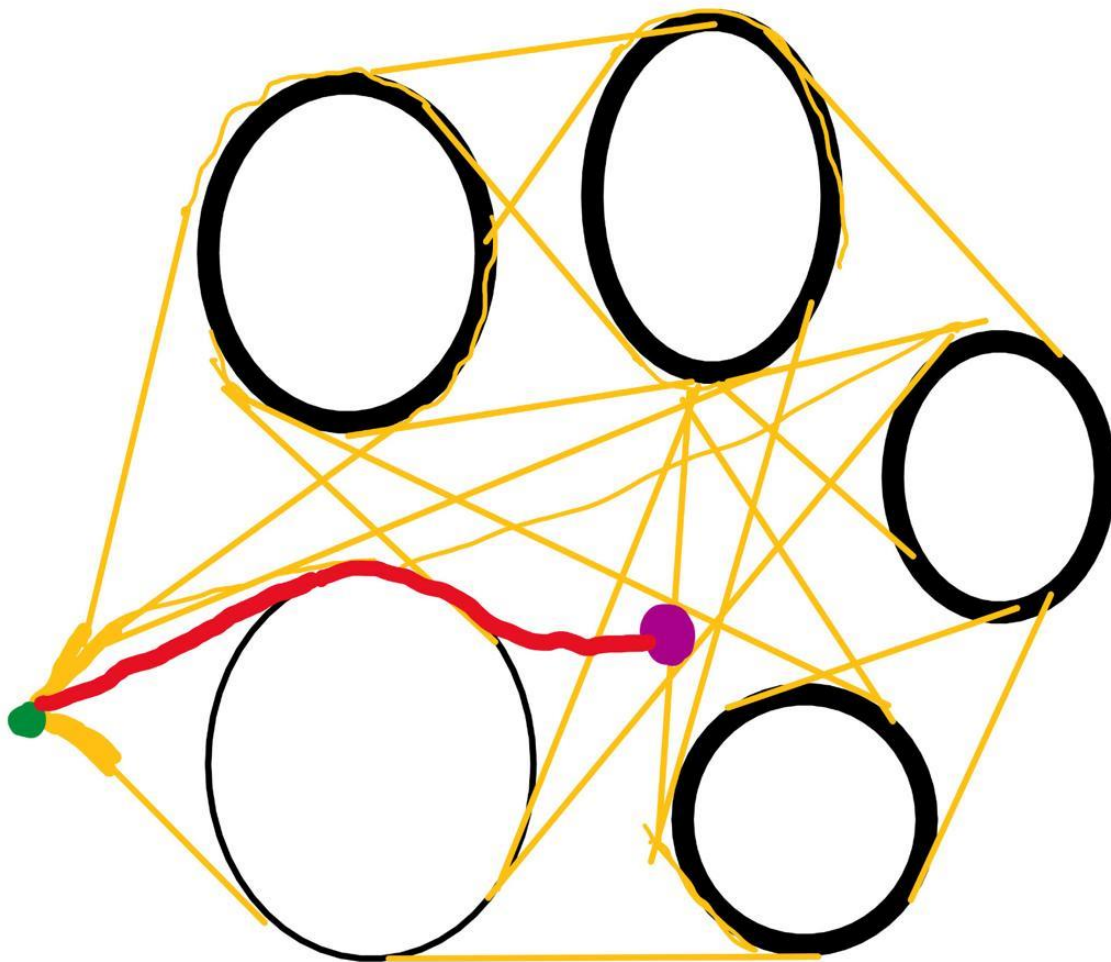


Here, Green line=Shortest path

Red line= Bug_0 path

As we can see, the path produced by visibility graph is shorter than the bug_0 path.

Question -4



Here, we have drawn the visibility curve when rectangle object are converted into circular object for Bug_0 environment.