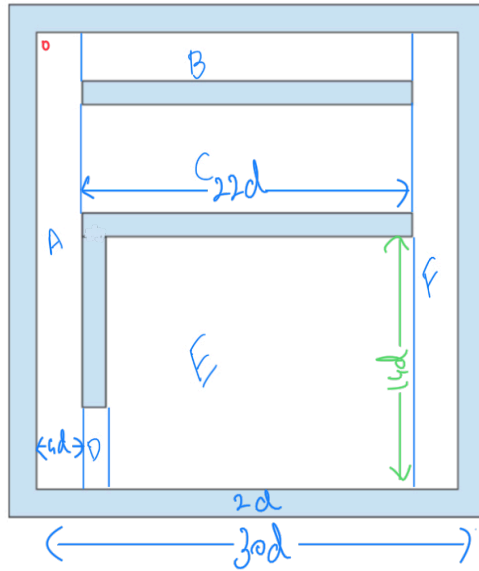


Q1.



Size of robot : $d \Rightarrow$ diameter
 L_{square}

$$A = (4 \times 30) d^2$$

$$B = (4 \times 22) d^2$$

$$C = (8 \times 22) d^2$$

$$D = (2 \times 6) d^2$$

$$E = (4 \times 20) d^2$$

$$F = (4 \times 30) d^2$$

Suppose Robot Covers.
 d^2 area per second

T. cover

Time

A

120 s

B

88 s

C

176 s

D

12 s

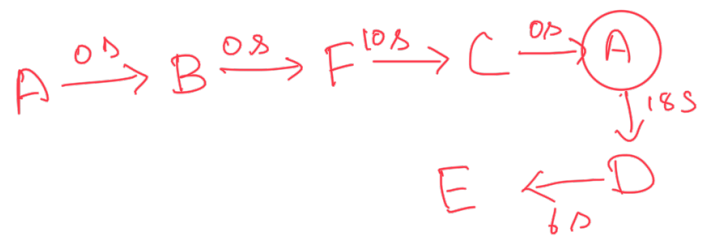
E

280 s

F

120 s

If start is the to left corner
of A. Path would be



Total time $(120 + 88 + 120 + 10 + 176 + 18 + 12 + 120)$

$$T = 664 \text{ s}$$

Q2. Suppose we start from Bottom Left corner of A
 Path taken would be

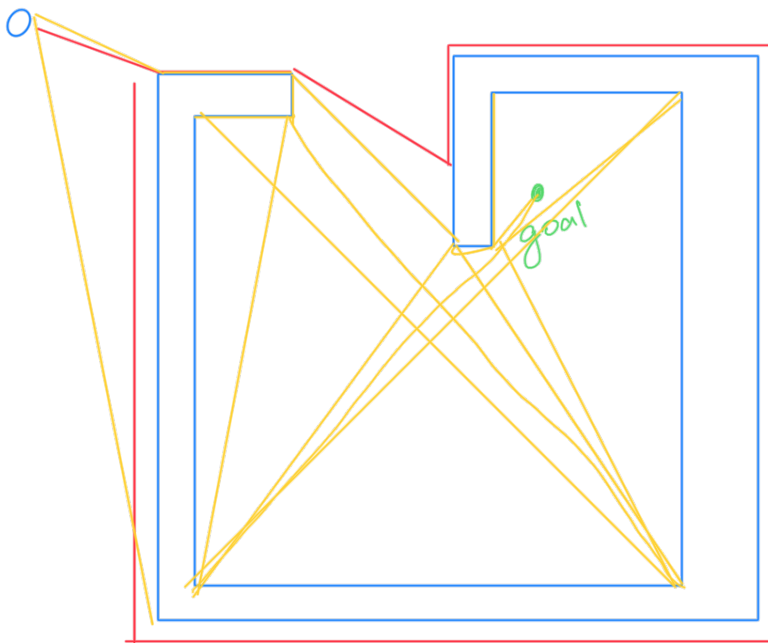
$A \rightarrow D \rightarrow E \rightarrow F \xrightarrow{20s} C \rightarrow \textcircled{A} \xrightarrow{10s} B$

$$\Rightarrow T - T' = 4s$$

$$T' = 660s$$

$$T' < T.$$

Q3



- Bug 0
- visibility graph.

← shortest path.

Q6) We can avoid collision B/w pursuers by following ways.

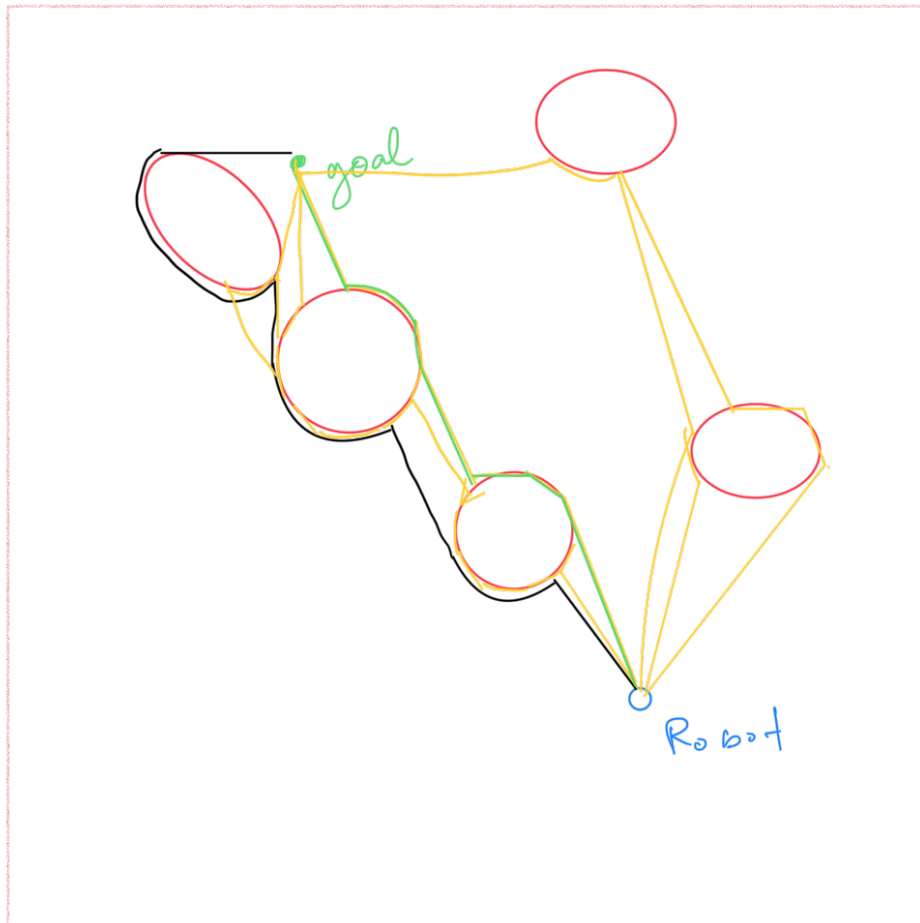
→ By constraining the Distance B/w the

Pursuers

→ By sharing the details of next cell a pursuers would go to and preventing the collision.

→ we can also use potential field. path planning with pursuer as obstacle and evader as the goal.

Q4



- Bug 0

- Shortest path

- visibility graph.

