# REPORT

DSE418: Intelligent Robotics

End Sem

## Group:


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## Problem Statement:

1. Move your robot from the source location to the goal location:
    a. Start position: (-0.7,-1.2)
    b. Goal position: (0.7, -1.23)
2. Your robot should not collide with any robot, boundary, or static obstacle.
3. Whenever the distance between turtlebot3 and create is less than 0.1, we assume the collision has happened. That is from the robot body to another robot body and not the center of the body.

## Approach:

1. We decided on 6 waypoints between the start and goal position.
2. We used three distance sensors, left, right, and front, to detect the obstacles.
3. We set an epsilon greater than 0.5 to avoid obstacles.
4. We changed motor speeds according to the obstacle location.
5. The obstacle moves from one waypoint to another till it reaches the goal.

## Ideal/Theoretical Approach:

1. We planned to randomly generate waypoints keeping the wall in view, which means at least one waypoint will lie in the vicinity of the door (RRT, PRM).
2. Then using path-following behavior, we can move between the waypoint.
3. To avoid dynamic obstacles, we design a proportional controller for the robot.