SC627
Assignment-3

Roll No. - 213234002 Name – Sourav Chatterjee

The aim is to cross three obstacles, two moving and one stationary.

We enlarge the obstacles by the radius of robot and shrink the robot to a point.

We make collision cone for each obstacle, which is the angle between the new radius of the obstacle and the tangent from point robot to the new obstacle circle.

Once this angle is known, we generate set of all possible velocities with the given constraints of maximum speed and maximum angle.

We then generate set of all possible robot velocities for which resultant velocities (resultant of possible robot velocity and the obstacle velocity) which do not fall into collision cone.

In this set of all non-colliding possible robot velocities, we check that which velocity vector has least angle to the robot-goal vector. This is the velocity fed to the robot.

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Result: