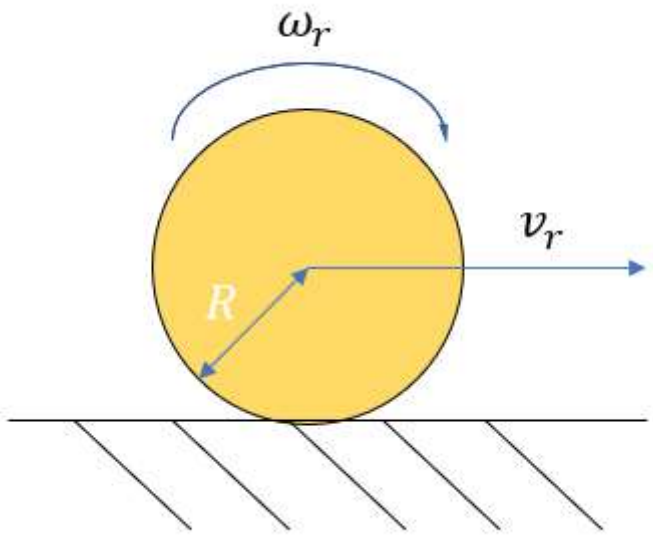
6631 Project Plan

Tasks for now

- design our own robots: may find suitable mesh and surface, using links in "useful_graphics_links.txt"
- design an automated robot to be first player
- design a robot which can be controlled via keyboard as the second player
- there will be a competition between AI and manual control.

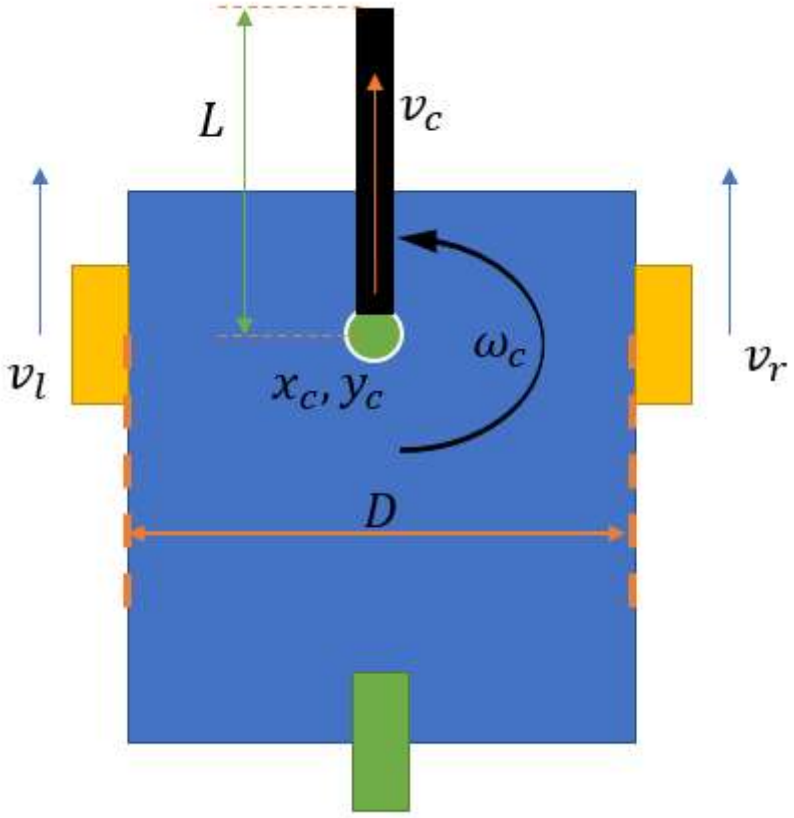
Useful Information

There is no wheel slipping



$$v_r = \omega_r R$$

Where v_r is the linear velocity, R is the radius of wheel, and ω_r is the angular velocity.



x_c and y_c is the coordinate of the vehicle centre. θ is the direction of vehicle. D is the distance bewteen two wheels. The geometry model of this vehicle is shown below:

$$v_c = (v_r + v_l)/2$$

$$\omega_c = (v_r - v_l)/D$$

$$\dot{\theta}_c = \omega_c = (v_r - v_l)/D$$

In order to control the robot, v_r and v_l need to be designed according to the expected trajectory in `robot.cpp`.