UML Class Diagram

Robot

- maxWheelAngle: const double
- maxVelocity:const double
- wheelbase: const double
- trackWidth: const double
- headingCurrent: double
- velocityCurrent: double
- + Steering: std: shared_ptr<AckermannModel>
- + moveRobot(double, double): std::vector<std::array<double, 2>>



AckermannModel

- curvatureRadius: double
- wheelbase: const double
- trackWidth: const double
- + wheelAngles: std::array<double, 2>
- + wheelVelocity: std::array<double, 2>
- + leftWheelController: const PIDController
- + rightWheelController: const PIDController
- + VelocityController: std::shared ptr<PidController>
- + computeVelocity(double): std::array<double, 2>
- + computeSteerAngle(double, double): std::array<double,2>



PidController

- kp: const double
- kd: const double
- dt: const double
- error: double
- error previous: double
- + output: double
- + compute(double, double): double
- + getError(): double