Solver

- State start, goal
- double error_tolerance

+ PerformIK()
+ SetErrorTolerance()
+ GetErrorTolerance()
+ CheckCollisions()

Robot

- vector<Link> links
- State referenceFrame
+ Link kinematics

+ Initialize()
+ Solver()
+ TrajectoryPlanner()
+ Controller()
+ Simulate()

State

- double x, y, z, theta, phi, alpha

+ TransformAtoB();

Simulator

+ std::string clientId, configuration

+ initialize()
+ SetupCommunication()
+ sendData()
+ receiveData()

TrajectoryPlanner

+ double timeStep
+ double coefficients
+ Eigen::MatrixXd jacobian

+ calculateJacobian()
+ generateTrajectory()
+ checkSingularity()

Link

+ State state
- struct dimension (double length, width,height)
+ Dimension dimension

+ InitializeLink()

IK solver

+ field: type

+ method(type): type

Forward Kinematics

+ field: type

+ method(type): type