# **Class Dependencies**

### Visualization

- targetVelocity: doubletargetHeading: double
- + setTargetVelocity(double): bool
- + setTargetHeading(double): bool
- + printOutputs(,double, double): bool
- + plotVelocities(vector<double, double>): bool
- + plotHeadings(vector<double, double>): bool

## TwoWDRobot

- targetHeading: doubletargetVelocity: doubl
- innerWheelAngle: doubleouterWheelAngle: double
- + setTargetHeading(double): bool
- + setTargetVelocity(double): bool
- + computeOutput(double, double, bool): bool
- + visualize(): bool

### PID

- kp: doublekd: doubleki: double
- prevError: double
- cumulativeError: double
- targetVelocity: double
- + setKp(double): bool + setKi(double): bool
- + setKd(double): bool
- + setDt(double): bool + setTargetVelocity(double): bool
- + computePID(double, double): double



## Ackermann

- tread: double
- wheelBase: double
- radiusOfCurvature: double
- arcLength: double
- maxSteerAngle: double
- targetHeading: double
- currentHeading: double
- + setRobotProps(double, double, double, double): bool
- + setTargetHeading(double): bool
- + computeROC(): bool
- + computeArc(): bool
- + calculateAngles(double, double): bool
- + computeModelOutputs(double, double, double): double