FTCAndroidLibrary

Generated by Doxygen 1.8.10

Sat Sep 5 2015 18:26:48

Contents

Chapter 1

Hierarchical Index

1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 2

Class Index

2.1 Class List

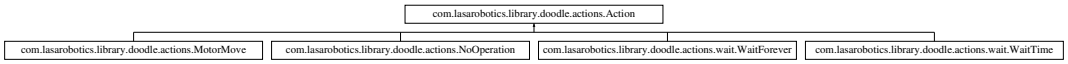
Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 3

Class Documentation

3.1 com.lasarobotics.library.doodle.actions.Action Class Reference

Inheritance diagram for com.lasarobotics.library.doodle.actions.Action:



Public Member Functions

- abstract void **run** (DoodleRunData data)
- abstract String **toString** ()

Protected Member Functions

- **Action** (String name)

3.1.1 Detailed Description

Defines a custom robot action These actions are stored in the same file as the instruction data

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/doodle/actions/Action.java

3.2 com.lasarobotics.library.controller.ButtonState Class Reference

Static Public Attributes

- static final int **NOT_PRESSED** = 0
- static final int **PRESSED** = 1
- static final int **RELEASED** = 2
- static final int **HELD** = 3

3.2.1 Detailed Description

Contains button state variables

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/controller/ButtonState.java

3.3 com.lasarobotics.library.util.Constants Class Reference

Static Public Attributes

- static final long **MONKEYC_STARTING_CONSTANT** = -1000

3.3.1 Detailed Description

Created by Ehsan on 7/12/2015.

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/util/Constants.java

3.4 com.lasarobotics.library.controller.Controller Class Reference

Public Member Functions

- **Controller** (Controller another)
- **Controller** (Gamepad g)
- void **update** (Gamepad g)
- String **toString** ()

Public Attributes

- int **dpad_up**
- int **dpad_down**
- int **dpad_left**
- int **dpad_right**
- int **a**
- int **b**
- int **x**
- int **y**
- int **guide**
- int **start**
- int **back**
- int **left_bumper**
- int **right_bumper**
- float **left_trigger**
- float **right_trigger**
- float **left_stick_x**
- float **left_stick_y**
- float **right_stick_x**
- float **right_stick_y**

3.4.1 Detailed Description

Implements a functional controller with an event API

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/controller/Controller.java

3.5 com.lasarobotics.library.util.DistanceUnit Enum Reference

Public Attributes

- **ENCODER_COUNTS**
- **REVOLUTIONS**
- **INCHES**
- **FEET**
- **CENTIMETERS**
- **METERS**

3.5.1 Detailed Description

OpticalDistance Units for Encoder Counts to OpticalDistance conversion

The documentation for this enum was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/util/DistanceUnit.java

3.6 com.lasarobotics.library.doodle.DoodleDo Class Reference

3.6.1 Detailed Description

Performs actions created by the DoodleWrite library

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/doodle/DoodleDo.java

3.7 com.lasarobotics.library.doodle.DoodleMap Class Reference

Classes

- enum MotorFlags

3.7.1 Detailed Description

Specifies the motors and servos encoded in the Doodle specification These specs will be written into a config text file in human-readable JSON

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/doodle/DoodleMap.java

3.8 com.lasarobotics.library.doodle.maps.DoodleMap Class Reference

Classes

- enum RangeOfMotion

Public Member Functions

- abstract void **move** (float amplitude, float rotation, float translation)
- void **update** (HardwareMap map)
- void **move** (float amplitude)
- void **move** (float amplitude, float rotation)
- void **move** (float amplitude, Float translation)

Protected Member Functions

- **DoodleMap** (HardwareMap map, RangeOfMotion rangeOfMotion)

3.8.1 Detailed Description

Maps robot movement to specific motors

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/doodle/maps/DoodleMap.java

3.9 com.lasarobotics.library.doodle.DoodleRunData Class Reference

Public Member Functions

- **DoodleRunData** (HardwareMap map, OpMode mode)
- HardwareMap **map** ()
- OpMode **mode** ()

3.9.1 Detailed Description

A struct containing the data needed when any Doodle action is called

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/doodle/DoodleRunData.java

3.10 com.lasarobotics.library.doodle.DoodleWrite Class Reference

3.10.1 Detailed Description

Created by arthur on 7/10/15.

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/doodle/DoodleWrite.java

3.11 com.lasarobotics.library.sensor.legacy.hitechnic.Gyroscope Class Reference

Public Member Functions

- **Gyroscope** (GyroSensor g)
- void **update** (GyroSensor g)
- void reset ()
- double getRate ()
- double getHeading ()
- double getRotation ()
- double getTimeDifference ()
- double getOffset ()
- void **setOffset** (double offset)
- String toString ()

Static Public Member Functions

- static double normalize (double heading)

3.11.1 Detailed Description

Implements additional Gyroscopic control methods and events

3.11.2 Member Function Documentation

3.11.2.1 double com.lasarobotics.library.sensor.legacy.hitechnic.Gyroscope.getHeading ( )

Gets the gyroscope heading in degrees, between 0 and 360

Returns

The gyro heading, between 0 and 360s

3.11.2.2 double com.lasarobotics.library.sensor.legacy.hitechnic.Gyroscope.getOffset ( )

Gets the gyroscope offset, in degrees per second.

Returns

The offset, in degrees per second.

3.11.2.3 double com.lasarobotics.library.sensor.legacy.hitechnic.Gyroscope.getRate ( )

Gets the gyroscope rotation rate in degrees per second

Returns

The offset gyroscope rotation in degrees per second

3.11.2.4 double com.lasarobotics.library.sensor.legacy.hitechnic.Gyroscope.getRotation ( )

Gets the gyroscope rotation in degrees

Returns

The gyroscope rotation in degrees

3.11.2.5 double com.lasarobotics.library.sensor.legacy.hitechnic.Gyroscope.getTimeDifference ( )

Gets the time difference between the last readings.

Returns

The current time delay in seconds.

3.11.2.6 static double com.lasarobotics.library.sensor.legacy.hitechnic.Gyroscope.normalize (double *heading*) [static]

Normalize Gyroscope bounds to within 0 and 360

Parameters

heading	The current Gyroscope value

Returns

The normalized Gyroscope value, between 0 and 360.

3.11.2.7 void com.lasarobotics.library.sensor.legacy.hitechnic.Gyroscope.reset ( )

Resets the gyroscope to a value of zero.

3.11.2.8 String com.lasarobotics.library.sensor.legacy.hitechnic.Gyroscope.toString ( )

Gets the status of the gyroscope

Returns

The gyroscope status as a string

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/sensor/legacy/hitechnic/Gyroscope.java

3.12 com.lasarobotics.library.sensor.generic.IR Class Reference

Public Member Functions

- **IR** (IrSeekerSensor s)
- void **update** (IrSeekerSensor s)
- double **getStrength** ()
- double **getAngle** ()
- Boolean **hasSignal** ()
- IrSeekerSensor.IrSeekerIndividualSensor[ ] **getSensors** ()

3.12.1 Detailed Description

Implements an IR sensor with additional advanced methods

TODO ungenericify to HT and ModernRobotics when testing equipment available

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/sensor/generic/IR.java

3.13 com.lasarobotics.library.skynet.Kalman Class Reference

3.13.1 Detailed Description

Kalman filter implementation Takes in multiple sensors' data to produce highly-accurate position and velocity vector fields

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/skynet/Kalman.java

3.14 com.lasarobotics.library.sensor.generic.LiDAR Class Reference

3.14.1 Detailed Description

We should really do this

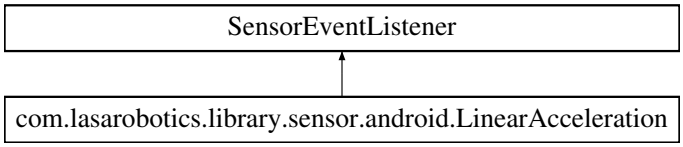
Be sure to use a Class ONE laser - past that, we get into additional FCC restrictions :)

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/sensor/generic/LiDAR.java

3.15 com.lasarobotics.library.sensor.android.LinearAcceleration Class Reference

Inheritance diagram for com.lasarobotics.library.sensor.android.LinearAcceleration:



Public Member Functions

- void **onAccuracyChanged** (Sensor sensor, int i)
- void **onSensorChanged** (SensorEvent event)
- Vector3< Float > **getAcceleration** ()

3.15.1 Detailed Description

Gets the forces placed upon the object in the x, y, and z directions excluding gravity in m/s^2

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/sensor/android/LinearAcceleration.java

3.16 com.lasarobotics.library.util.LookupTable< T > Class Template Reference

Public Member Functions

- LookupTable ()
- LookupTable (Hashtable< String, T > other)
- LookupTable (LookupTable< T > other)
- void setValue (String id, T value)
- T getValue (String id)
- void deleteValue (String id)
- int count ()

Protected Member Functions

- Hashtable< String, T > getTable ()

3.16.1 Detailed Description

Implements a variable LUT.

3.16.2 Constructor & Destructor Documentation

3.16.2.1 com.lasarobotics.library.util.LookupTable< T >.LookupTable ( )

Instantiate a lookup table for variables.

3.16.2.2 com.lasarobotics.library.util.LookupTable< T >.LookupTable (Hashtable< String, T > *other*)

Create a clone from another Hashtable.

Parameters

other	Another Hashtable.

3.16.2.3 com.lasarobotics.library.util.LookupTable< T >.LookupTable (LookupTable< T > *other*)

Create a clone based on another LookupTable.

Parameters

other	Another LookupTable of the same type.

3.16.3 Member Function Documentation

3.16.3.1 int com.lasarobotics.library.util.LookupTable< T >.count ( )

The count of items in the table.

Returns

The count of items in the table.

3.16.3.2 void com.lasarobotics.library.util.LookupTable< T >.deleteValue (String *id*)

Remove a value from the table at a specific ID.

Parameters

id	The ID of an item in the table.

3.16.3.3 Hashtable<String, T> com.lasarobotics.library.util.LookupTable< T >.getTable ( ) [protected]

Gets the underlying Hashtable instance.

Returns

The underlying Hashtable.

3.16.3.4 T com.lasarobotics.library.util.LookupTable< T >.getValue (String *id*)

Get the value of an id in the LUT.

Parameters

id	The ID of the item to retrieve.

Returns

The value of the item at the id.

3.16.3.5 void com.lasarobotics.library.util.LookupTable< T >.setValue (String *id*, T *value*)

Set the value of an item in the table, or create if new.

Parameters

id	The ID of the item in the LUT.
value	The value to set the id to.

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/util/LookupTable.java

3.17 com.lasarobotics.library.util.MathUtil Class Reference

Static Public Member Functions

- static double deadband (double deadband, double value)
- static Boolean equal (double a, double b)
- static Boolean equal (double a, double b, double distance)
- static double filter (double value, double lastvalue, double fail)
- static double coerce (double min, double max, double value)
- static boolean inBounds (double min, double max, double value)

3.17.1 Detailed Description

Mathematical and Precision Utilities

3.17.2 Member Function Documentation

3.17.2.1 static double com.lasarobotics.library.util.MathUtil.coerce (double *min,* double *max,* double *value*) [static]

Forces a numerical value to be between a min and a max

Parameters

min	If less than min, returns min
max	If greater than max, returns max
value	Value to test

Returns

Coerced value

3.17.2.2 static double com.lasarobotics.library.util.MathUtil.deadband (double *deadband,* double *value*) [static]

Gives a "deadzone" where any value less than this would return zero.

Parameters

deadband	Maximum value that returns zero
value	Value to test

Returns

Deadbanded value

3.17.2.3 static Boolean com.lasarobotics.library.util.MathUtil.equal (double *a,* double *b*) [static]

Returns if two double values are equal to within epsilon.

Parameters

a	First value
b	Second value

Returns

True if the values are equal, false otherwise

3.17.2.4 static Boolean com.lasarobotics.library.util.MathUtil.equal (double *a,* double *b,* double *distance*) [static]

Returns if two double values are equal to within a distance.

Parameters

a	First value
b	Second value
distance	Maximum distance between a and b

Returns

True if the values are equal ot within distance, false otherwise

3.17.2.5 static double com.lasarobotics.library.util.MathUtil.filter (double *value,* double *lastvalue,* double *fail*) [static]

Ignores values equal to the fail value (normally zero).

Parameters

value	Current value
lastvalue	Previous value
fail	Filter this value, normally zero

Returns

Filtered value

3.17.2.6 static boolean com.lasarobotics.library.util.MathUtil.inBounds (double *min,* double *max,* double *value*) [static]

Tests if a number is between the bounds, inclusive.

Parameters

min	If less than min, returns false
max	If greater than max, returns false
value	Value to test

Returns

Returns true if value is between (inclusive) min and max, false otherwise.

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/util/MathUtil.java

3.18 com.lasarobotics.library.drive.Mecanum Class Reference

Static Public Member Functions

- static void Arcade (double y, double x, double c, DcMotor leftFront, DcMotor rightFront, DcMotor leftBack, DcMotor rightBack)
- static void Arcade_FieldOriented (double y, double x, double c, double gyroheading, DcMotor leftFront, Dc↩ Motor rightFront, DcMotor leftBack, DcMotor rightBack)

3.18.1 Detailed Description

Methods for the Mecanum multi-directional drive train

3.18.2 Member Function Documentation

3.18.2.1 static void com.lasarobotics.library.drive.Mecanum.Arcade (double *y,* double *x,* double *c,* DcMotor *leftFront,* DcMotor *rightFront,* DcMotor *leftBack,* DcMotor *rightBack*) [static]

Implements the Arcade drive train with three axis and four motors.

Parameters

y	The y-axis of the controller, forward/rev
x	The x-axis of the controller, strafe
c	The spin axis of the controller
leftFront	The motor on the front left
rightFront	The motor on the front right
leftBack	The motor on the back left
rightBack	The motor on the back right

3.18.2.2 static void com.lasarobotics.library.drive.Mecanum.Arcade_FieldOriented (double *y*, double *x*, double *c*, double *gyroheading*, DcMotor *leftFront*, DcMotor *rightFront*, DcMotor *leftBack*, DcMotor *rightBack*) [static]

Implements the Arcade drive train with field orientation based on Gyro input

Parameters

y	The y-axis of the controller, forward/rev
x	The x-axis of the controller, strafe
c	The spin axis of the controller
gyroheading	The current normalized gyro heading (between 0 and 360)
leftFront	The motor on the front left
rightFront	The motor on the front right
leftBack	The motor on the back left
rightBack	The motor on the back right

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/drive/Mecanum.java

3.19 com.lasarobotics.library.monkeyc.MonkeyC Class Reference

Public Member Functions

- void **add** (Controller c1, Controller c2)
- void **add** (Gamepad instruction, Gamepad instruction2)
- void **clear** ()
- void **write** (String filename, Context context)
- int **size** ()

3.19.1 Detailed Description

The MonkeyC (MonkeySee) library that handles recording and storing driver controls These controls can be inserted during runtime (when the robot is moving) or can be created prior to a match. MonkeyDo can then execute these commands.

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/monkeyc/MonkeyC.java

3.20 com.lasarobotics.library.monkeyc.MonkeyData Class Reference

Public Member Functions

- Controller **updateControllerOne** (Controller previous)

- Controller **updateControllerTwo** (Controller previous)
- boolean **hasUpdate** ()
- JsonObject **getDeltasGamepad1** ()
- void **setDeltasGamepad1** (JsonObject deltasGamepad1)
- JsonObject **getDeltasGamepad2** ()
- void **setDeltasGamepad2** (JsonObject deltasGamepad2)
- void **setTime** (long time)
- long **getTime** ()

3.20.1 Detailed Description

Contains a single time-stamped patched state of one Controller

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/monkeyc/MonkeyData.java

3.21 com.lasarobotics.library.monkeyc.MonkeyDo Class Reference

Public Member Functions

- **MonkeyDo** (String filename, Context context)
- MonkeyData **getNextCommand** ()
- String **getFilename** ()
- void **setFilename** (String filename)
- void **onStart** ()

3.21.1 Detailed Description

The MonkeyDo library handles executing commands generated by MonkeyC.

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/monkeyc/MonkeyDo.java

3.22 com.lasarobotics.library.monkeyc.MonkeyUtil Class Reference

Static Public Member Functions

- static MonkeyData **createDeltas** (Controller current1, Controller previous1, Controller current2, Controller previous2, long time)
- static void **writeFile** (String filename, ArrayList< MonkeyData > commands, Context context)
- static ArrayList< MonkeyData > **readFile** (String filename, Context context)

Static Public Attributes

- static final String **FILE_DIR** = Environment.getExternalStorageDirectory() + "/MonkeyC/"

3.22.1 Detailed Description

MonkeyUtil handles reading and writing text files with instructions created by MonkeyC

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/monkeyc/MonkeyUtil.java

3.23 com.lasarobotics.library.doodle.actions.sensors.MotorEncoderReset Class Reference

3.23.1 Detailed Description

Reset a motor encoder

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/doodle/actions/sensors/MotorEncoderReset.java

3.24 com.lasarobotics.library.doodle.DoodleMap.MotorFlags Enum Reference

Public Member Functions

- **MotorFlags** (int flag)

Public Attributes

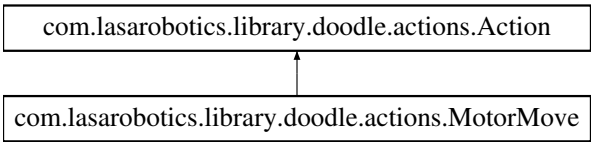
- **MOVEMENT** =(1)
- int **flag**

The documentation for this enum was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/doodle/DoodleMap.java

3.25 com.lasarobotics.library.doodle.actions.MotorMove Class Reference

Inheritance diagram for com.lasarobotics.library.doodle.actions.MotorMove:



Public Member Functions

- **MotorMove** (float power, String motor)
- void **run** (DoodleRunData data)
- String **toString** ()

Additional Inherited Members

3.25.1 Detailed Description

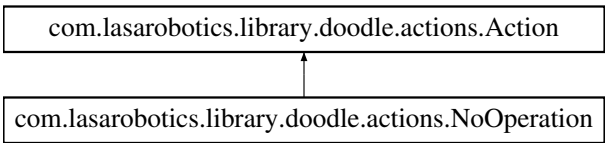
Move a motor at a specified power

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/doodle/actions/MotorMove.java

3.26 com.lasarobotics.library.doodle.actions.NoOperation Class Reference

Inheritance diagram for com.lasarobotics.library.doodle.actions.NoOperation:



Public Member Functions

- void **run** (DoodleRunData data)
- String **toString** ()

Additional Inherited Members

3.26.1 Detailed Description

Dummy action that does absolutely nothing but waste precious disk space. It's a great starting template though.

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/doodle/actions/NoOperation.java

3.27 com.lasarobotics.library.sensor.modernrobotics.OpticalDistance Class Reference

Public Member Functions

- **OpticalDistance** (OpticalDistanceSensor sensor)
- void **update** (OpticalDistanceSensor sensor)
- double getLightDetected ()
- Boolean objectDetected ()
- Boolean objectNear ()
- Boolean objectClose ()
- double getDistance ()

3.27.1 Detailed Description

Implements the Core Optical OpticalDistance Sensor with advanced methods

This sensor is only fully accurate UP TO 5 CM Different lighting conditions greatly affect distance read after 5 cm away from the object

3.27.2 Member Function Documentation

3.27.2.1 double com.lasarobotics.library.sensor.modernrobotics.OpticalDistance.getDistance ( )

Gets an approximate distance from the object in centimeters Formula based on empirical measurements in 2700K lighting at room temperature with a white semi-reflective object perpendicular to the beam

Please note that these values are only SOMEWHAT ACCURATE between 0.5 and 5 cm!

Returns

An approximate distance in centimeters

3.27.2.2 double com.lasarobotics.library.sensor.modernrobotics.OpticalDistance.getLightDetected ( )

Gets the raw light reflected as a decimal

Returns

The raw light reflected as a decimal

3.27.2.3 Boolean com.lasarobotics.library.sensor.modernrobotics.OpticalDistance.objectClose ( )

Returns true if an object is close enough to get an accurate distance measurement of +- 1 cm, assuming light object

Returns

True if an object is close enough to get an accurate distance measurement

3.27.2.4 Boolean com.lasarobotics.library.sensor.modernrobotics.OpticalDistance.objectDetected ( )

Returns true if an object is detected within the sensor's absolute maximum range (25 cm)

Returns

True if an object is detected

3.27.2.5 Boolean com.lasarobotics.library.sensor.modernrobotics.OpticalDistance.objectNear ( )

Returns true if an object is near the sensor (within 5-10 cm)

Returns

True if an object is near the sensor

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/sensor/modernrobotics/OpticalDistance.java

3.28 com.lasarobotics.library.doodle.maps.DoodleMap.RangeOfMotion Enum Reference

Public Attributes

- **DRIVE_AMPLITUDE_ONLY**
- **DRIVE_AMPLITUDE_ROTATION**

The documentation for this enum was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/doodle/maps/DoodleMap.java

3.29 com.lasarobotics.library.util.RollingAverage< T extends Number > Class Template Reference

Public Member Functions

- **RollingAverage** (int capacity)
- void **addValue** (T value)
- int **getCapacity** ()
- void **setCapacity** (int capacity)
- void **clear** ()
- int **getSize** ()
- double **getAverage** ()
- double **getTotal** ()

3.29.1 Detailed Description

Structure that performs a continuous rolling average on values Uses doubles as internal structures

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/util/RollingAverage.java

3.30 com.lasarobotics.library.sensor.android.Sensors Class Reference

Static Public Member Functions

- static List< Sensor > **getAllSensors** ()
- static Sensor **getSensor** (int type)
- static Boolean **hasSensor** (int type)

3.30.1 Detailed Description

Lists Android manager, converts manager to this library's format, and tests if certain sensor is present

Use for any Android internal device sensor implemented in hardware OR software

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/sensor/android/Sensors.java

3.31 com.lasarobotics.library.drive.Swerve Class Reference

Static Public Member Functions

- static void Standard (double y, double x, double rot, double gyroheading, DcMotor leftFront, DcMotor rightFront, DcMotor leftBack, DcMotor rightBack, Servo lf, Servo rf, Servo lb, Servo rb)

3.31.1 Detailed Description

Methods for the Swerve drive train

3.31.2 Member Function Documentation

3.31.2.1 static void com.lasarobotics.library.drive.Swerve.Standard (double *y*, double *x*, double *rot*, double *gyroheading*, DcMotor *leftFront*, DcMotor *rightFront*, DcMotor *leftBack*, DcMotor *rightBack*, Servo *lf*, Servo *rf*, Servo *lb*, Servo *rb*) [static]

Implements the Swerve drive train with four motors and four lifting servos Requires gyro input

Parameters

y	The y-axis of the controller, forward/rev
x	The x-axis of the controller, strafe
rot	The spin axis of the controller
gyroheading	The current normalized gyro heading (between 0 and 360)
leftFront	The motor on the front left
rightFront	The motor on the front right
leftBack	The motor on the back left
rightBack	The motor on the back right
lf	The servo on the front left
rf	The servo on the front right
lb	The servo on the back left
rb	The servo on the back right

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/drive/Swerve.java

3.32 com.lasarobotics.library.drive.Tank Class Reference

Static Public Member Functions

- static void Motor2 (DcMotor left, DcMotor right, double leftValue, double rightValue)
- static void Motor4 (DcMotor leftFront, DcMotor rightFront, DcMotor leftBack, DcMotor rightBack, double leftValue, double rightValue)

3.32.1 Detailed Description

Methods for the Tank drive train.

3.32.2 Member Function Documentation

3.32.2.1 static void com.lasarobotics.library.drive.Tank.Motor2 (DcMotor *left,* DcMotor *right,* double *leftValue,* double *rightValue*) [static]

Implements the Tank drive train with two motors

Parameters

left	Left motor
right	Right motor
leftValue	Left motor target value
rightValue	Right motor target value

3.32.2.2 static void com.lasarobotics.library.drive.Tank.Motor4 (DcMotor *leftFront,* DcMotor *rightFront,* DcMotor *leftBack,* DcMotor *rightBack,* double *leftValue,* double *rightValue*) [static]

Implements the Tank drive train with four motors

Parameters

leftFront	The motor on the front left
rightFront	The motor on the front right
leftBack	The motor on the back left
rightBack	The motor on the back right
leftValue	Left motors target value
rightValue	Right motors target value

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/drive/Tank.java

3.33 com.lasarobotics.library.util.Timers Class Reference

Public Member Functions

- Timers ()
- Timers (int precision)
- void startClock (String name)
- void resetClock (String name)
- long getClockValue (String name)
- long getClockValue (String name, TimeUnit timeUnit)
- boolean isAtTargetMillis (String name, long target)
- boolean isAtTargetMillis (String name, long target, long precision)
- long getPrecision ()
- void setPrecision (int precision)

3.33.1 Detailed Description

Implements advanced timers with events and precision manipulation.

3.33.2 Constructor & Destructor Documentation

3.33.2.1 com.lasarobotics.library.util.Timers.Timers ( )

Instantiates the timer class with the default millisecond precision.

3.33.2.2 com.lasarobotics.library.util.Timers.Timers (int *precision*)

Instantiates the timer class with an arbitrary precision in milliseconds.

Parameters

precision	Precision of the clock, in milliseconds.

3.33.3 Member Function Documentation

3.33.3.1 long com.lasarobotics.library.util.Timers.getClockValue (String *name*)

Get clock value. Defaults to millisecond precision.

Parameters

name	Name of the clock

Returns

Value of clock in milliseconds

3.33.3.2 long com.lasarobotics.library.util.Timers.getClockValue (String *name,* TimeUnit *timeUnit*)

Get clock value with precision in a given time unit

Parameters

name	Name of the clock
timeUnit	TimeUnit the output should be in

Returns

The value of the clock converted to the time unit specified (may lose precision)

3.33.3.3 long com.lasarobotics.library.util.Timers.getPrecision ( )

Gets the precision in milliseconds

Returns

Precision in milliseconds

3.33.3.4 boolean com.lasarobotics.library.util.Timers.isAtTargetMillis (String *name,* long *target*)

Returns whether the clock is at the specified amount of milliseconds

Parameters

name	The clock name
target	The target time in milliseconds

Returns

True if at the target (+- precision), false otherwise

3.33.3.5 boolean com.lasarobotics.library.util.Timers.isAtTargetMillis (String *name,* long *target,* long *precision*)

Returns whether the clock is at the specified amount of milliseconds

Parameters

name	The clock name
target	The target time in milliseconds
precision	How much target and clock value can differ by in milliseconds

Returns

True if at the target (+- precision), false otherwise

3.33.3.6 void com.lasarobotics.library.util.Timers.resetClock (String *name*)

Reset a clock with the specified name. Clock will continue running immediately.

Parameters

name	The clock name

3.33.3.7 void com.lasarobotics.library.util.Timers.setPrecision (int *precision*)

Sets the precision to a value

Parameters

precision	The precision of the clock, in milliseconds.

3.33.3.8 void com.lasarobotics.library.util.Timers.startClock (String *name*)

Start (and create, if nonexistent) a clock with a specified name.

Parameters

name	The clock name

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/util/Timers.java

3.34 com.lasarobotics.library.sensor.legacy.lego.Touch Class Reference

Inherits com.lasarobotics.library.sensor.legacy.lego.TouchInternal.

Public Member Functions

- **Touch** (LegacyModule legacyModule, int physicalPort)
- void update ()
- int getState ()
- boolean isPressed ()
- boolean isReleased ()
- boolean isHeldDown ()

3.34.1 Detailed Description

Implements the NXT touch sensor

3.34.2 Member Function Documentation

3.34.2.1 int com.lasarobotics.library.sensor.legacy.lego.Touch.getState ( )

Gets the ButtonState instance of this button

Returns

A ButtonState instance as an integer

3.34.2.2 boolean com.lasarobotics.library.sensor.legacy.lego.Touch.isHeldDown ( )

Checks if the sensor is held down

Returns

True if pressed or held, false otherwise

3.34.2.3 boolean com.lasarobotics.library.sensor.legacy.lego.Touch.isPressed ( )

Checks if the sensor was JUST PRESSED

Returns

True if just pressed, false otherwise

3.34.2.4 boolean com.lasarobotics.library.sensor.legacy.lego.Touch.isReleased ( )

Checks if the sensor was JUST RELEASED

Returns

True if just released, false otherwise

3.34.2.5 void com.lasarobotics.library.sensor.legacy.lego.Touch.update ( )

Update the sensor events - run this every loop()

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/sensor/legacy/lego/Touch.java

3.35 com.lasarobotics.library.sensor.modernrobotics.Touch Class Reference

Public Member Functions

- **Touch** (TouchSensor t)
- void update (TouchSensor t)
- int getState ()
- boolean isPressed ()
- boolean isReleased ()
- boolean isHeldDown ()

3.35.1 Detailed Description

Implements a Touch Sensor with advanced events

3.35.2 Member Function Documentation

3.35.2.1 int com.lasarobotics.library.sensor.modernrobotics.Touch.getState ( )

Gets the ButtonState instance of this button

Returns

A ButtonState instance as an integer

3.35.2.2 boolean com.lasarobotics.library.sensor.modernrobotics.Touch.isHeldDown ( )

Checks if the sensor is held down

Returns

True if pressed or held, false otherwise

3.35.2.3 boolean com.lasarobotics.library.sensor.modernrobotics.Touch.isPressed ( )

Checks if the sensor was JUST PRESSED

Returns

True if just pressed, false otherwise

3.35.2.4 boolean com.lasarobotics.library.sensor.modernrobotics.Touch.isReleased ( )

Checks if the sensor was JUST RELEASED

Returns

True if just released, false otherwise

3.35.2.5 void com.lasarobotics.library.sensor.modernrobotics.Touch.update (TouchSensor *t*)

Update the sensor events - run this every loop()

Parameters

t	The current TouchSensor variable

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/sensor/modernrobotics/Touch.java

3.36 com.lasarobotics.library.sensor.legacy.lego.Ultrasonic Class Reference

3.36.1 Detailed Description

Powers a LEGO ultrasonic sensor

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/sensor/legacy/lego/Ultrasonic.java

3.37 com.lasarobotics.library.android.Util Class Reference

Static Public Member Functions

- static Context **getContext** ()
- static String **getDataDirectory** (Context ctx)
- static String **getWorkingDirectory** ()
- static String **getDCIMDirectory** ()

3.37.1 Detailed Description

Android utilities

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/android/Util.java

3.38 com.lasarobotics.library.util.Vector3< T > Class Template Reference

Public Member Functions

- **Vector3** (T x, T y, T z)
- T **x** ()
- T **y** ()
- T **z** ()
- String **toString** ()

3.38.1 Detailed Description

3D Vector

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/util/Vector3.java

3.39 com.lasarobotics.library.sensor.modernrobotics.Voltage Class Reference

Public Member Functions

- **Voltage** (HardwareMap map)
- void **update** ()
- double **getVoltage** ()
- double **getVoltageInstantaneous** ()

Static Public Attributes

- static final int **samples** = 2000

3.39.1 Detailed Description

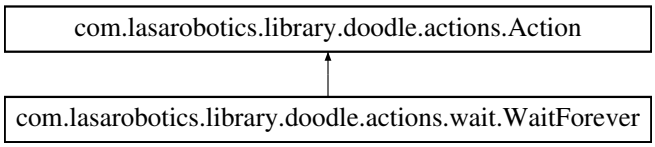
Reads the robot battery voltage

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/sensor/modernrobotics/Voltage.java

3.40 com.lasarobotics.library.doodle.actions.wait.WaitForever Class Reference

Inheritance diagram for com.lasarobotics.library.doodle.actions.wait.WaitForever:



Public Member Functions

- void **run** (DoodleRunData data)
- String **toString** ()

Additional Inherited Members

3.40.1 Detailed Description

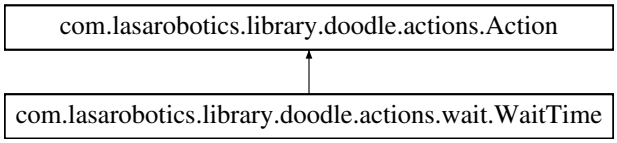
Waits a certain period of time

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/doodle/actions/wait/WaitForever.java

3.41 com.lasarobotics.library.doodle.actions.wait.WaitTime Class Reference

Inheritance diagram for com.lasarobotics.library.doodle.actions.wait.WaitTime:



Public Member Functions

- **WaitTime** (long ms)
- void **run** (DoodleRunData data)
- String **toString** ()

Additional Inherited Members

3.41.1 Detailed Description

Waits a certain period of time

The documentation for this class was generated from the following file:

- ftc-library/src/main/java/com/lasarobotics/library/doodle/actions/wait/WaitTime.java

Index