MyRobot

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Class to control custom Robot

Example usage:

Initialize the robot, it should move to home configuration
(0°,0°,0°,0°)
robot = MyRobot();

Set movements speed of each individual joint, update interal joint
speeds for later commands
robot.set_speed([0.1,0.1,0.1,0.2],true);

Set all motors to maximum torque
robot.set_torque_limit([1,1,1,1]);

Draw the current configuration of the robot
robot.draw_robot();

Move the robots joints
robot.move_j(20,-90,0,50);

Actuate the gripper. If the gripper is currently closed, it will open
robot.actuate_gripper();

Get the robots current joint positions
current_joint_positions = robot.joint_pos

Disable all motors. This is necessary to free up the com port. If you
forgot to do this and clear the robot object, it will fail at
reinitialization. To fix this unplug the robots USB cable and clear
the workspace
robot.disable_motors();
```

Class Details

Superclasses	handle
Sealed	false
Construct on load	false

Constructor Summary

MyRobot	Constructor for the MyRobot Class.

Property Summary

dh	Denavit Hartenberg Parameters for Robot (a, alpha, d, theta)
draw_robot_flag	Flag for drawing robot configuration
forward_transform	Forward transformation Matrix
gripper_motor_id	ID of gripper motor
gripper_open_flag	Flag for gripper status
ik	Inverse Kinematics Object
ik_weights	Weights for inverse kinematics
init_status	Initialization succesfull flag
joint_angle_error	Internal joint angle error between read out of joint angles and input joint angles
joint_angles	Internal joint angles in degree
joint_limits	Joint Limits in degree
joint_offsets	Joint offsets to send to motor
joint_pos	Internal joint positions calculated with each move_j

motor_ids	Motor IDs chronologically (see Dynamixel Wizard for more info)
motor_speed	List for motor speed
motor_torque	List for motor torque
movement_history	List to record movement history
pitch	Pitch Angle for motor 3
rbt	RigidBodyTree
use_smooth_speed_flag	Flag for using smooth speed

Method Summary

	actuate_gripper	function for the MyRobot Class.
	addlistener	Add listener for event. Help for MyRobot/addlistener is inherited from superclass HANDLE
	check_limits	function for the MyRobot Class.
	close_gripper	function for the MyRobot Class.
	create_rbt	function for the MyRobot Class.
	deg_to_rot	function for the MyRobot Class.
	delete	Delete a handle object. Help for MyRobot/delete is inherited from superclass HANDLE
	delete_last_recorded_configuration	function for the MyRobot Class.
	disable_motors	function for the MyRobot Class.
	draw_robot	function for the MyRobot Class.
	enable_motors	function for the MyRobot Class.
	eq	== (EQ) Test handle equality. Help for MyRobot/eq is inherited from superclass HANDLE
	findobj	Find objects matching specified conditions. Help for MyRobot/findobj is inherited from superclass HANDLE
	findprop	Find property of MATLAB handle object. Help for MyRobot/findprop is inherited from superclass HANDLE
	forward	function for the MyRobot Class.
	ge	>= (GE) Greater than or equal relation for handles. Help for MyRobot/ge is inherited from superclass HANDLE
	get_position	function for the MyRobot Class.
	gt	> (GT) Greater than relation for handles. Help for MyRobot/gt is inherited from superclass HANDLE
	inverse	function for the MyRobot Class.
Sealed	isvalid	Test handle validity. Help for MyRobot/isvalid is inherited from superclass HANDLE
	le	<= (LE) Less than or equal relation for handles. Help for MyRobot/le is inherited from superclass HANDLE
	listener	Add listener for event without binding the listener to the source object. Help for MyRobot/listener is inherited from superclass HANDLE
	lt	< (LT) Less than relation for handles. Help for MyRobot/lt is inherited from superclass HANDLE
	move_c	function for the MyRobot Class.
	move_j	function for the MyRobot Class.
	ne	~= (NE) Not equal relation for handles. Help for MyRobot/ne is inherited from superclass HANDLE
	notify	Notify listeners of event. Help for MyRobot/notify is inherited from superclass HANDLE
	open_gripper	function for the MyRobot Class.
	play_configuration_history	function for the MyRobot Class.
	read_ee_position	function for the MyRobot Class.
	read_joint_angles	function for the MyRobot Class.
	record_configuration	function for the MyRobot Class.

	rot_to_deg	function for the MyRobot Class.
	set_speed	function for the MyRobot Class.
	set_torque_limit	function for the MyRobot Class.
	smooth_speed	function for the MyRobot Class.

Event Summary

ObjectBeingDestroyed	Notifies listeners that a particular object has been destroyed. Help for MyRobot/ObjectBeingDestroyed is inherited from superclass HANDLE