Eileen-Documentation Documentation

Release stable

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Contents

Code for 3197's Robot competing in the 2019 challenge, Destination: Deep Space

Eileen is a play on the phrase "I lean" as the robot leaned a lot during testing phases.

The robot is structurally similar to last years robot, named "Krakatoa" for it's volcano-like shape on the chassis.

CHAPTER 1

Code-Related

CHAPTER 2

Class Documentation

Package	Description
frc2019.robot.Robot	Initializes Robot
frc2019.robot.OI	Assigns buttons to Controller
frc2019.robot.Main	Starts all Robot Subsystems
frc2019.robot.RobotMap	Defines Motor Controller IDs and Constants
frc2019.robot.commands.AlignTurn	Turns the Robot using vision from GRIP
frc2019.robot.commands.ArticulateToPreset	Sets Arm to a Preset Position
frc2019.robot.commands.AutoClimb	Automatically drives Climbers (WIP)
frc2019.robot.commands.ElevateToPreset	Sets Elevator to a Preset Position
frc2019.robot.commands.test.DriveTrainRampTest	Soon to be erased from existence.
frc2019.robot.commands.test.DriveTrainTest	Soon to be erased from existence.
frc2019.robot.commands.presets.Cargo	[UNDER CONSTRUCTION]
frc2019.robot.commands.presets.LevelOne	[UNDER CONSTRUCTION]
frc2019.robot.commands.presets.LevelThree	[UNDER CONSTRUCTION]
frc2019.robot.commands.presets.LevelTwo	[UNDER CONSTRUCTION]
frc2019.robot.commands.defaults.Articulate	Moves the Arm (Manipulator at End)
frc2019.robot.commands.defaults.Climb	Drives the Tower Mechanism
frc2019.robot.commands.defaults.Drive	Drives the Robot
frc2019.robot.commands.defaults.Elevate	Moves the Elevator (Contains Arm)
frc2019.robot.commands.defaults.Erect	Moves the Erector (Climber)
frc2019.robot.commands.defaults.Manipulate	Moves the Manipulator (Cargo Shovel)
frc2019.robot.commands.defaults.Speak	Moves the Beak on the Arm (Hatch Panel Hook)
frc2019.robot.subsystems.Arm	Defines the Arm (Moves Manipulator)
frc2019.robot.subsystems.CargoManipulator	Defines the Cargo Manipulator
frc2019.robot.subsystems.Climber	Defines the Climber (Tower Mechanism)
frc2019.robot.subsystems.DriveTrain	Defines the Drive Train
frc2019.robot.subsystems.Elevator	Defines the Elevator (Contains Arm)
frc2019.robot.subsystems.Erector	Defines the Erector (Climber)
frc2019.robot.subsystems.Hatch	Defines the Hatch Panel Mechanism (Beak)

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Package	Description
frc2019.robot.utilities.Drivable	Interface for various Subsystems
frc2019.robot.utilities.FunctionWrapper	Interface for FunctionCommand
frc2019.robot.utilities.FunctionCommand	Abstraction Stuff

CHAPTER 3

Updating/Installing Firmware

CHAPTER 4

Diagrams/Configurations

Motor Controller Spreadsheet

4.1 Controller Configurations

The `A` button on both controllers needs to be held in order to access their functions.

`X` and `Y` control the Hatch Panel Mechanism, henceforth known as the "Bird."

Driver `Left Trigger` and `Right Trigger` control the Forward Climber while Driver `Left Bumper` and `Right Bumper` control the Backward Climber.

Left and Right on all joysticks are currently unused.

Controller Map up-to-date as of St. Louis

CHAPTER 5

Helpful Resources

WPILib Documentation

Limelight Documentation

REV Robotics Documentation

Java Documentation

reStructuredText Basics

Markdown Basics

Documentation Conventions

Spark MAX Status LED's