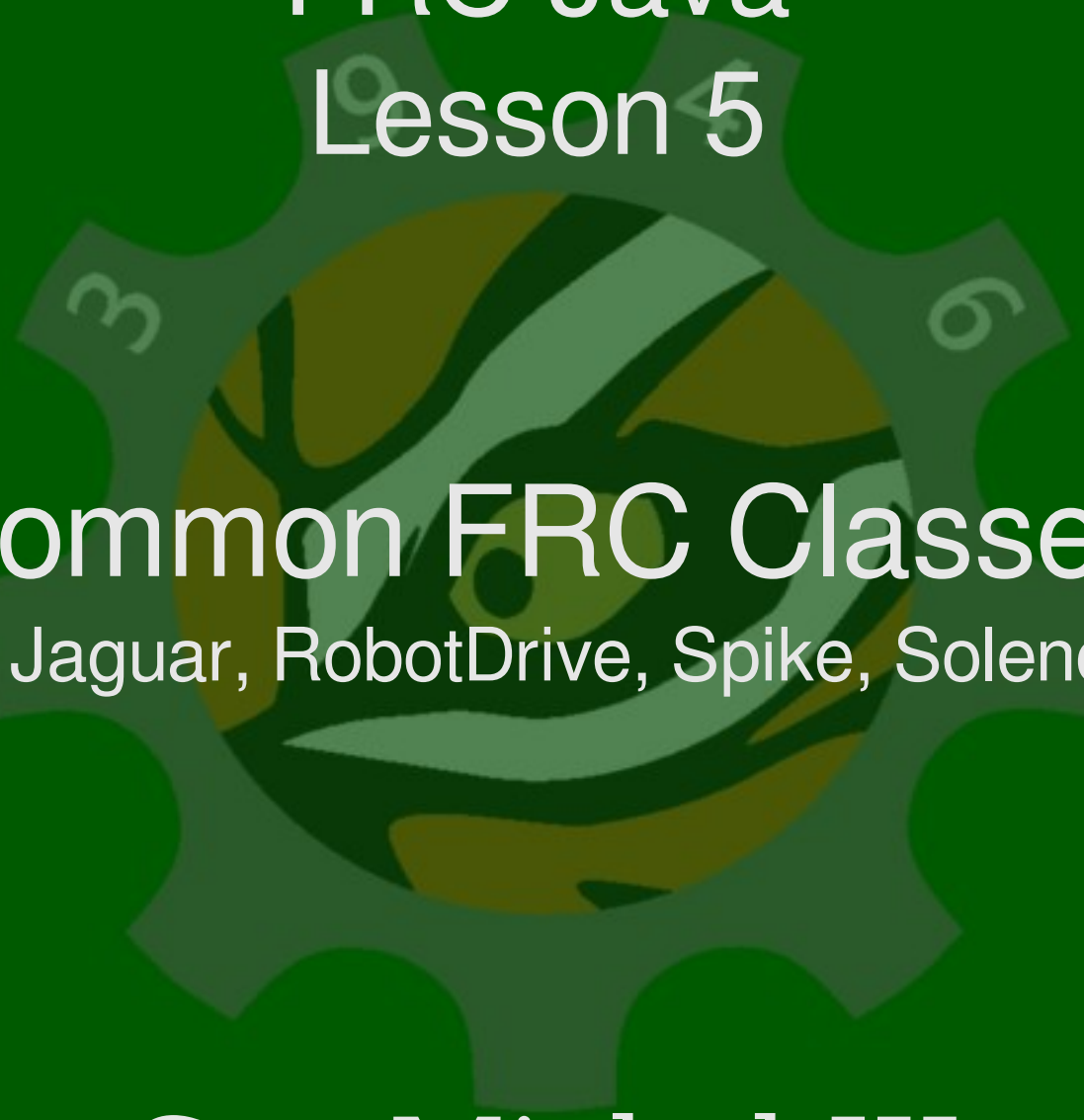
FRC Java
Lesson 5



Common FRC Classes

Joystick, Jaguar, RobotDrive, Spike, Solenoid, Gyro

Gus Michel III

3946 Tiger Robotics – slidell-robotics.com

Joystick

- Constructor: Joystick(int port);
  - Joystick leftStick(3);
- Methods:
  - public double getX(); //get X axis
  - public double getY(); //get Y axis
  - public double getZ(); //get Z axis
    - leftStick.getX();
  - public boolean getRawButton(int button); //get button state
    - leftStick.getRawButton(4);

Button

- Constructor: Button(); //not used
- joystickButton(GenericHID Joystick, int buttonNumber);
  - Button fire = new JoystickButton(leftStick, 4);
- Methods:
  - abstract boolean get(); //get current state of button
    - fire.get();
  - void whenPressed whenReleased whileHeld (Command command);

Jaguar

- Constructor: Jaguar(int pin);
  - Jaguar frontRight = new Jaguar(3);
- Methods
  - public void set(double speed); //speed goes from 1 to -1
    - FrontRight.set(.5);
  - Public double get();
    - FrontRight.get();

RobotDrive

- Constructors:
  - RobotDrive(SpeedController leftMotor, SpeedController rightMotor)
  - RobotDrive(SpeedController frontLeftMotor, SpeedController rearLeftMotor, SpeedController frontRightMotor, SpeedController rearRightMotor);
- Jaguar leftWheel = new Jaguar(1);
- Jaguar rightWheel = new Jaguar(2);
- RobotDrive driveTrain = new RobotDrive(leftWheel, rightWheel);
- Jaguar and Victor are Children of SpeedController.

RobotDrive

- Methods
  - public void arcadeDrive(double speed, double turn);
    - driveTrain.arcadeDrive(.5, -.5);
  - Public void tankDrive(double leftSpeed,double rightSpeed);
    - driveTrain.tankDrive(.3,.3);

Relay

- Constructor: Relay spike = new Relay(1);

- public void set(Relay.Value value);
  - spike.set(Value.kForward);
  - spike.set(Value.kReverse);
  - spike.set(Value.kOff);

Solenoid/DoubleSolenoid

- Solenoid valve = new Solenoid(3);
- DoubleSolenoid trigger = new DoubleSolenoid(3,3);
- valve.set(true); valve.set(false);
- trigger.set(Value.kForward);
- trigger.set(Value.kReverse);
- trigger.set(Value.kOff);

Gyro

- Gyro turn = new Gyro(4);
- Turn.get();

Assignment

- Use two Joysticks, Jaguars, and RobotDrive to create a program that will use the Joysticks to Tank Drive the robot.

- Then make it so that when you hit the trigger button a relay is set Forward and when released it is set Off again, AS WELL as Driving.