Op Mode and Linear Actuators

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OP Mode

- "Operation Mode"
- Each OP Mode specifies commands for the robot
- The driver selects the OP Mode from the robot controller
- "@TeleOp" or "@Autonomous" before the class defines the type of Op mode

Class and Inheritance

- A Java Class is a program inside a Java project
- A superclass is a sample program with written methods
- A subclass inherits all the methods and characteristics from the superclass
- The subclass can overwrite methods from the superclass (write "@Override" before the main method)
- public class SubClass extends SuperClass

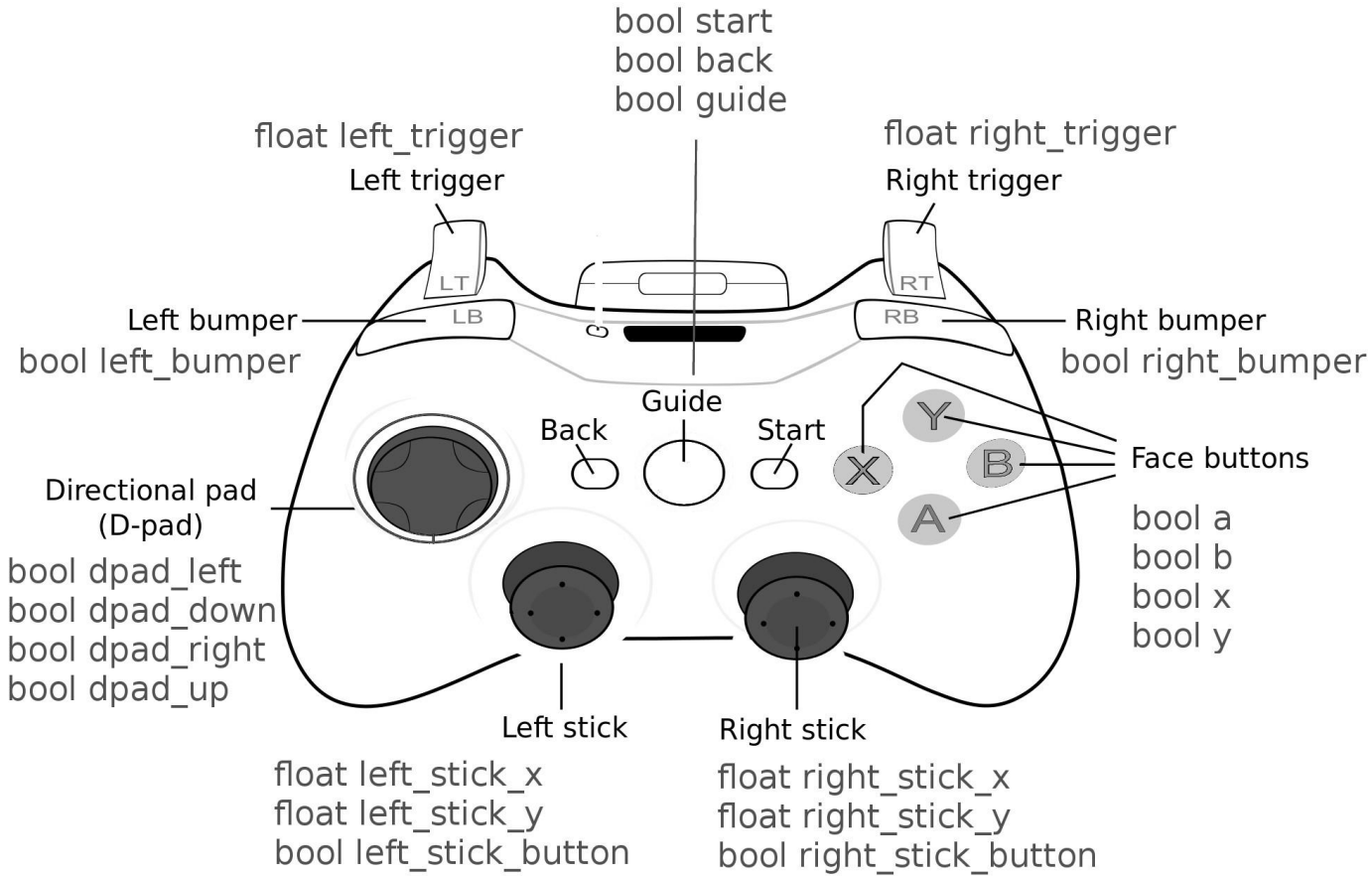
Variable

- Information about an object that can change
- Associates with one robot component i.e.. DcMotor
- Visibility:
  - public – accessible and can be changed by any Java class within the same Java project
  - private – can only be modified and called by the same Java class

Parameters and Returns

- A command in a method can call another method
- The called method can change a variable if the program passes the variable into the method as a parameter
- The method can return the changed variable back to the caller method
- i.e. telemetry.addData("Status", "Running");

Gamepad


bool start
bool back
bool guide
float left_trigger
Left trigger
float right_trigger
Right trigger
LT
RT
LB
RB
Left bumper
bool left_bumper
Right bumper
bool right_bumper
Guide
Back
Start
Y
X
B
A
Face buttons
Directional pad
(D-pad)
bool dpad_left
bool dpad_down
bool dpad_right
bool dpad_up
bool a
bool b
bool x
bool y
Left stick
Right stick
float left_stick_x
float left_stick_y
bool left_stick_button
float right_stick_x
float right_stick_y
bool right_stick_button

DcMotor

- You control how fast you want the motor to go by changing its power
- The power is translated from the gamepad to a Double between -1 and 1
- When the Op Mode is running, you constantly get input from the gamepad
- You set the power of the motor to the input data from the gamepad to control the motors
- You can also set the power to a fixed number for autonomous for instance

Servo

A servo is a smaller motor with a limited range to move

Useful for precise and smaller movements

A servo controller can control a servo to move to a specific position

You program the position of the servo

The range of the servo goes from 0 to 1

- 0 represents 0 degrees
- 0.5 represents 90 degrees