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/**
 * @file opcontrol.c
 * @brief Controls what happens in operator control
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 *
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 */

#include <string.h>
#include "../include/robot.h"

#define MOGO_HOLD 300

extern bool isAuto;

int digital(unsigned char joyNum,
            unsigned char channel,
            unsigned char b1,
            unsigned char b2) {
    return joystickGetDigital(joyNum, channel, b2) * -1 +
        joystickGetDigital(joyNum, channel, b1) * 1;
} /* digital */

void moveDrive();
void moveMogo();
void moveIntake();
void moveLift();
void manipPID();
void moveManip();

void autonLeft22();
void autonLeft22T();

void operatorControl() {
    #ifdef DEBUG_MODE

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        printf("Starting Driver Control...\n");
    #endif
    reset();
    update();
    isAuto = false;

    manipSettings.target = manip.sensor->value;
    liftSettings.target  = lift.sensor->value;

    /*
     *   if (liftLimit[0].value) {
     *       liftSettings.target = LIFT_QUARTER;
     *       PID(&liftSettings);
     *   }
     */

    bool isSkills = strstr(autons[selectedAuton].name, "skills");

    while (true) {
        if (joystickGetDigital(1, 7, JOY_LEFT) &&
            joystickGetDigital(2, 7, JOY_LEFT)) {
            exit(0);
        }

        if (isSkills) {
            // skillsMogo();
            if (joystickGetDigital(2, 7, JOY_DOWN)) {
                reset();
                sensorReset(drive[0].sensor);
                sensorReset(drive[1].sensor);
                sensorReset(lift.sensor);
                sensorReset(mogo.sensor);
                sensorReset(&gyro);
                autonLeft22();
            }
        }

        moveDrive();
        moveMogo();
        moveIntake();
        manipPID();
        moveLift();
        update();

        delay(20);
    }

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} /* operatorControl */

void moveDrive() {
    drive[0].power = deadBand(joystickGetAnalog(1, 3), 10) +
        127 * digital(1, 7, JOY_UP, JOY_DOWN) +
        127 * digital(1, 7, JOY_RIGHT, JOY_LEFT);
    drive[1].power = deadBand(joystickGetAnalog(1, 2), 10) +
        127 * digital(1, 8, JOY_UP, JOY_DOWN) +
        127 * digital(1, 8, JOY_LEFT, JOY_RIGHT);
} /* moveDrive */

void moveMogo() {
    int power = 127 * digital(1, 5, JOY_UP, JOY_DOWN);

    if ((mogo.power == 127) || (mogo.power == 9) && !power)
        power = 9; mogo.power = power;
} /* moveMogo */

void moveLift() {
    static unsigned long lastPress;

    if (digital(2, 6, JOY_DOWN, JOY_UP) + digital(1, 6, JOY_UP, JOY_DOWN) ||

        lift.power = 127 * (digital(1, 6, JOY_UP, JOY_DOWN) +

            if (lift.power > 0 && manip.sensor->value >
                (MANIP_INTAKE + MANIP_HOVER) / 2) {
                lift.power = 0;
                manipSettings.target = MANIP_HOVER;
            } else if (lift.power < 0 && manip.sensor->value < MANIP_PLACE + 75) {
                intake.power = -85;
            } else if (lift.power) {
                lastPress = millis();
            }
            liftSettings.target = lift.sensor->value;
        } else {
            PID(&liftSettings);
        }
    }
} /* moveLift */

void moveManip() {
    manip.power = 127 * digital(2, 8, JOY_UP, JOY_DOWN);
}

void moveIntake() {

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        intake.power = 127 * digital(2, 5, JOY_UP, JOY_DOWN);
        if (!intake.power)
            intake.power = 25;
    } /* moveIntake */

    void manipPID() {
        static unsigned long lastPress;
        static int power;

        if (joystickGetDigital(2, 7, JOY_UP))
            manipSettings.target = MANIP_PLACE;
        else if (joystickGetDigital(2, 7, JOY_RIGHT))
            manipSettings.target = MANIP_HOVER;
        else if (joystickGetDigital(2, 7, JOY_DOWN))
            manipSettings.target = MANIP_INTAKE;

        power = 127 * digital(2, 8, JOY_UP, JOY_DOWN);

        if (power) {
            if (manip.sensor->value < MANIP_PLACE && power > 0) {
                manipSettings.target = MANIP_PLACE;
                PID(&manipSettings);
            } else {
                manip.power = power;
                manipSettings.target = manip.sensor->averageVal;
                lastPress = millis();
            }
        } else if (millis() - lastPress < 190) {
            manip.power = 0;
        } else {
            PID(&manipSettings);
        }
    } /* manipPID */

    void autonLeft22T(void *none) {
        autonLeft22();
        taskDelete(NULL);
    } /* autonLeft22T */

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