Encoders

Quad Encoder

Quadrature encoders can measure the rotation of the attached axle on your robot. Most common uses of this sensor type are to track distance traveled by attaching them to your robots drivetrain and monitoring how much the axle spins.

With these sensors 1 measured tick is 1 degree of revolution.

PROS provides a simple quadrature library to utilize these sensors. A sample usage would be as follows:

main.h:

```
// Digital port number for top and bottom port of quad encoder
#define QUAD_TOP_PORT 1
#define QUAD_BOTTOM_PORT 2

// Multiple encoders can be declared
Encoder encoder;
```

init.c:

```
void initialize() {
    // ...
    encoder = encoderInit(QUAD_TOP_PORT, QUAD_BOTTOM_PORT, is_reversed);
    // ...
}
```

opcontrol.c or auto.c:

```
void myFunction(){
    // ... Do work
    // Get encoder reading in degrees
```

```
    int counts = encoderGet(encoder);

    // ... Do other work
    // Reset encoder to zero
    encoderReset(encoder);
}
```

Wiring Notes

One important thing to note with the use of encoders is that they should **not** be plugged into digital **port 10** on the Cortex. This is not unique to PROS, it is simply a result of the way that digital interrupts are configured for the Cortex. Other types of sensors may be used on port 10 with no effect on their performance, but encoders cannot.

Integrated Motor Encoders (IMEs)

See the I2C Communication page.

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