

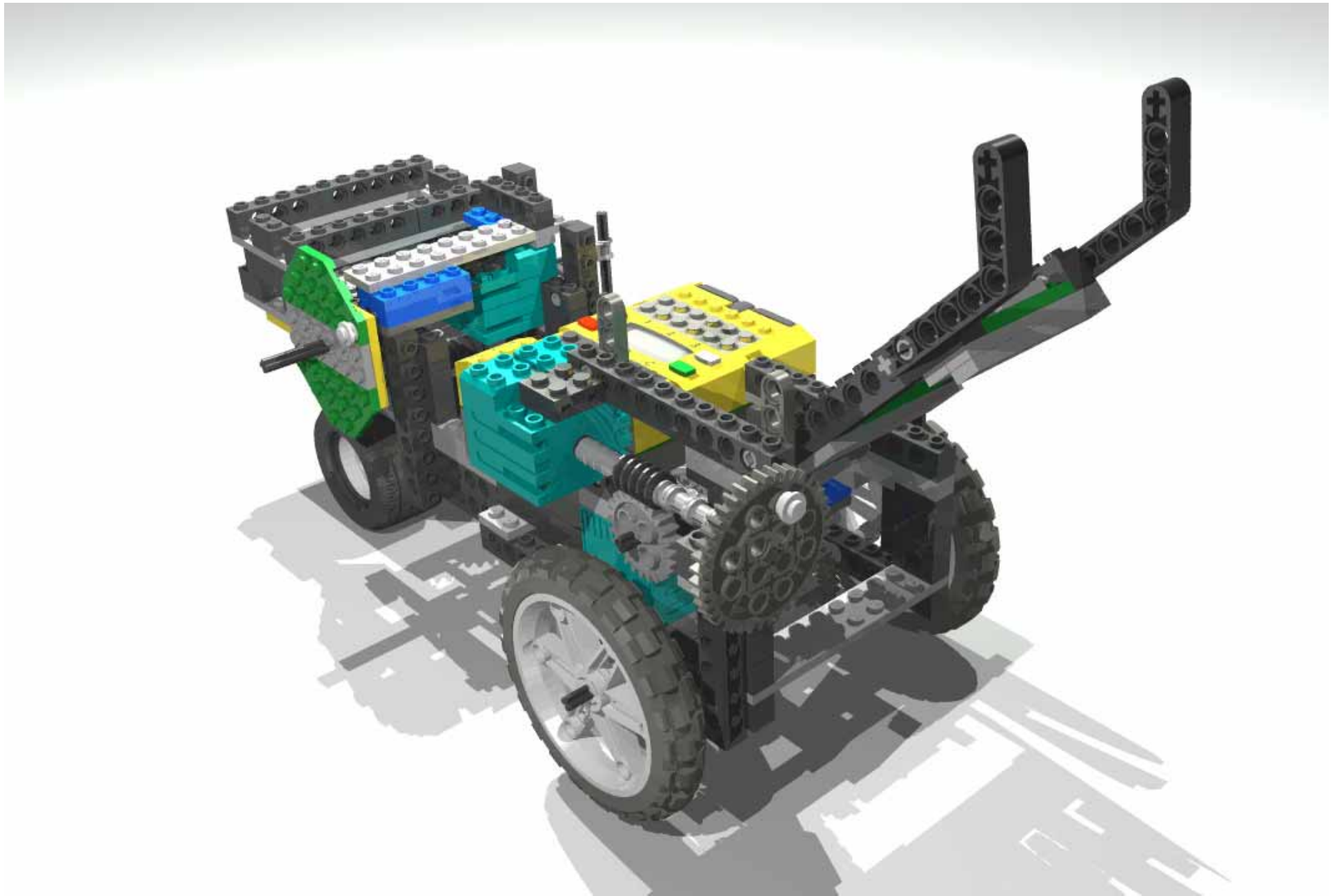
# **Robotics with Mindstorms**

## **the brick**

## **motors**

## **sensors**

## **technic parts**



# **Our Robot – “Doug”**

- **Built for FLL competition**
- **Go out/come back**
- **Pick up/drop off items**
- **4' x 8' playing surface**
- **obstacles**
- **2 minute time limit**



# **Stuff to make it work**

- **Computer – PC or Mac**
- **Robolab software**
- **Infra-Red Tower**
- **Remote Control**
- **Lego Mindstorms Kit**



# Cool Parts

- **Tricycle Steering**
- **Rotation Counters**  
**steering**  
**rear axle**
- **Dead Recogning**
- **Differential**
- **Worm gear**



# **Programming**

- **Icon based**
- **Subroutines**

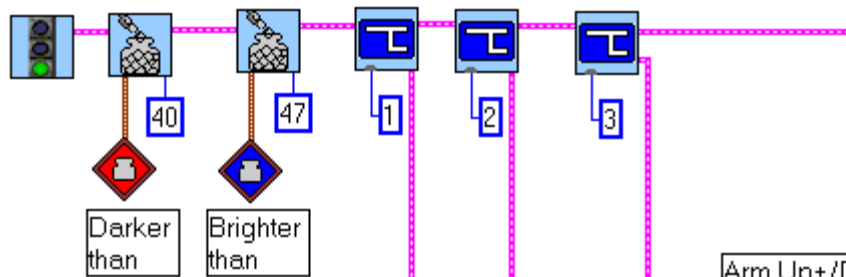
**Movement**

**Steering**

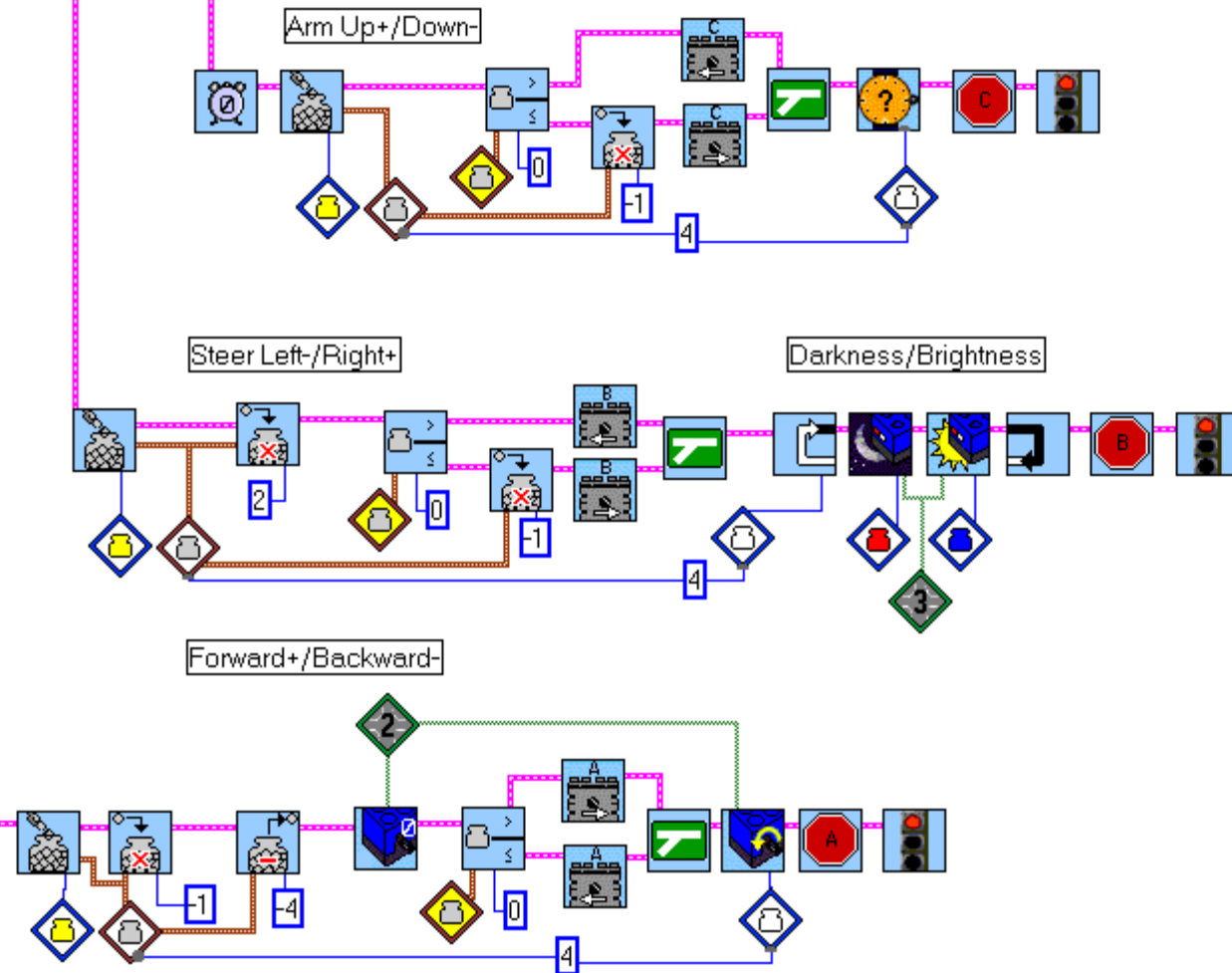
**Arm**

- **Start up – Run – Stop**

# Start up

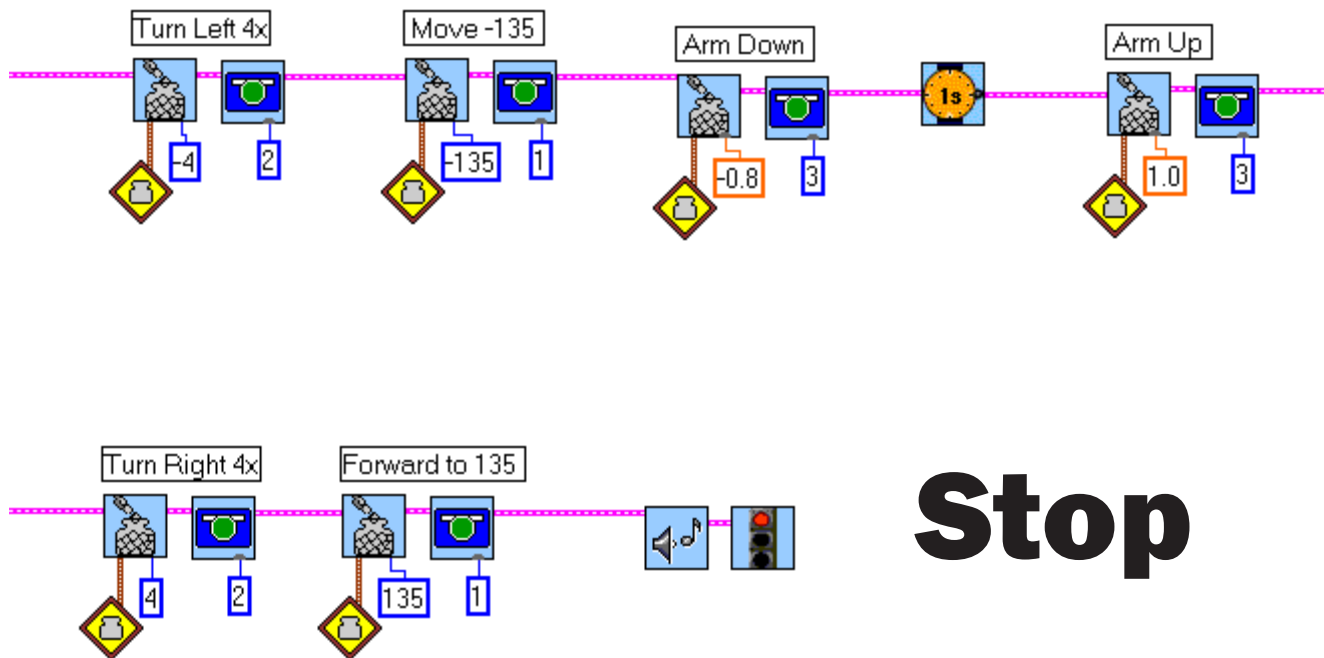


## Subroutines





# Run | Steer | Movement | Arm Movement



# Stop

# **Building Robots**

**possible — not easy**

- **Mechanical**
- **Software**
- **Teamwork**

