Robot Engineering Notebook
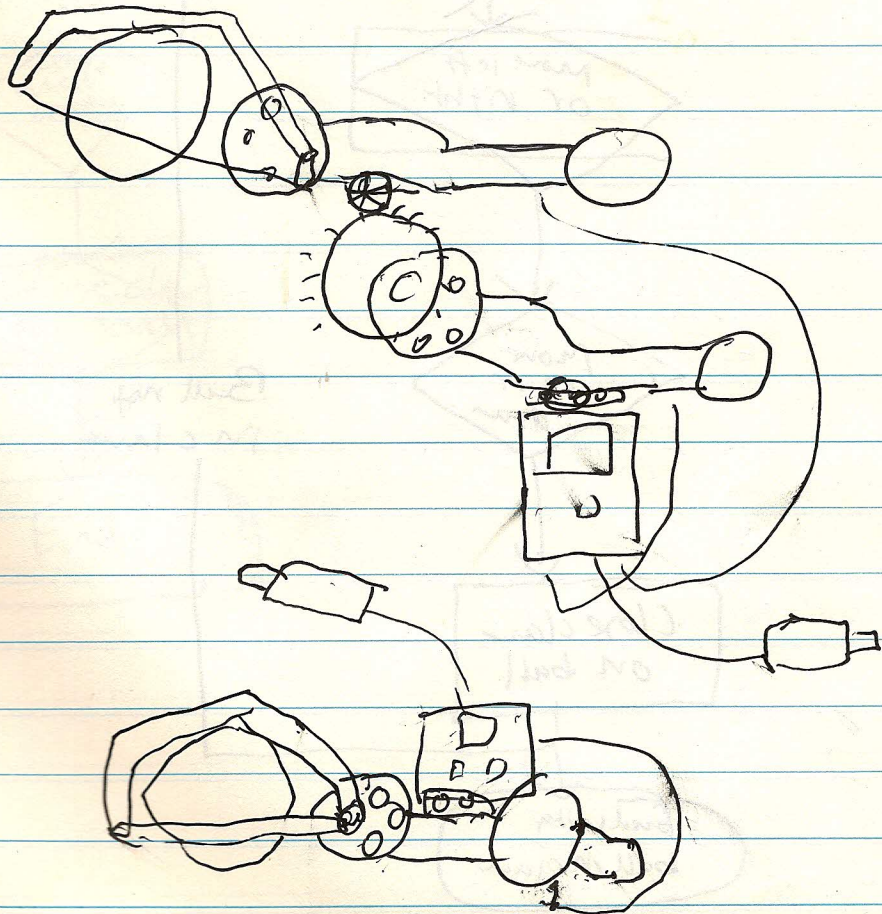
Robot:

We are going to build a ~~wheeled~~ land
robot.

Task:

Our robot is going to pick up a
ball using multiple joints. We will
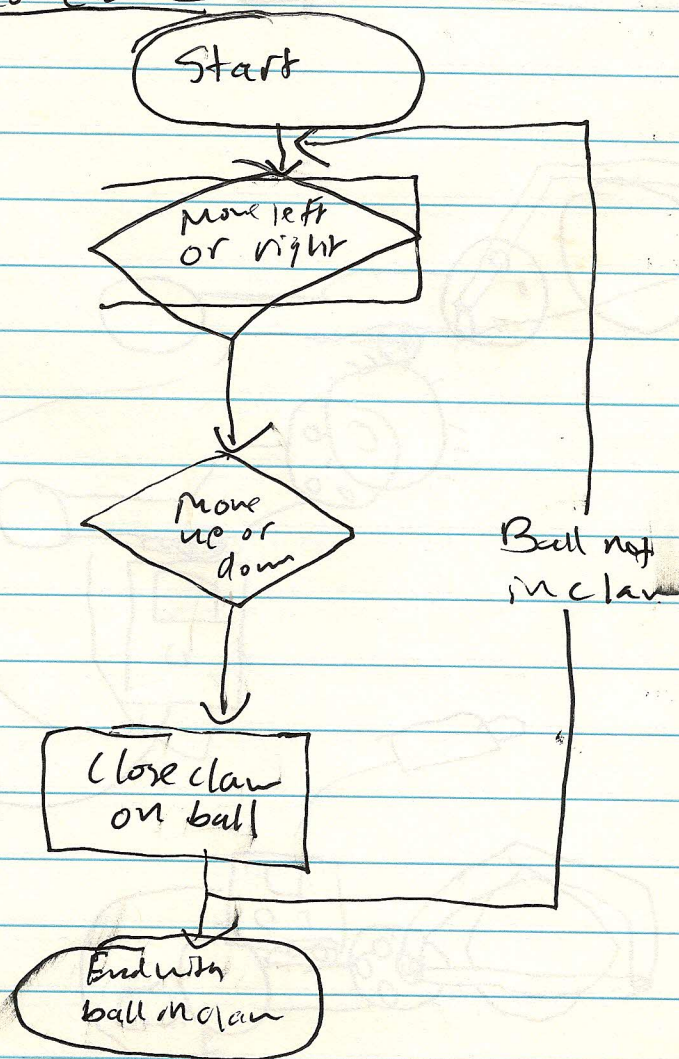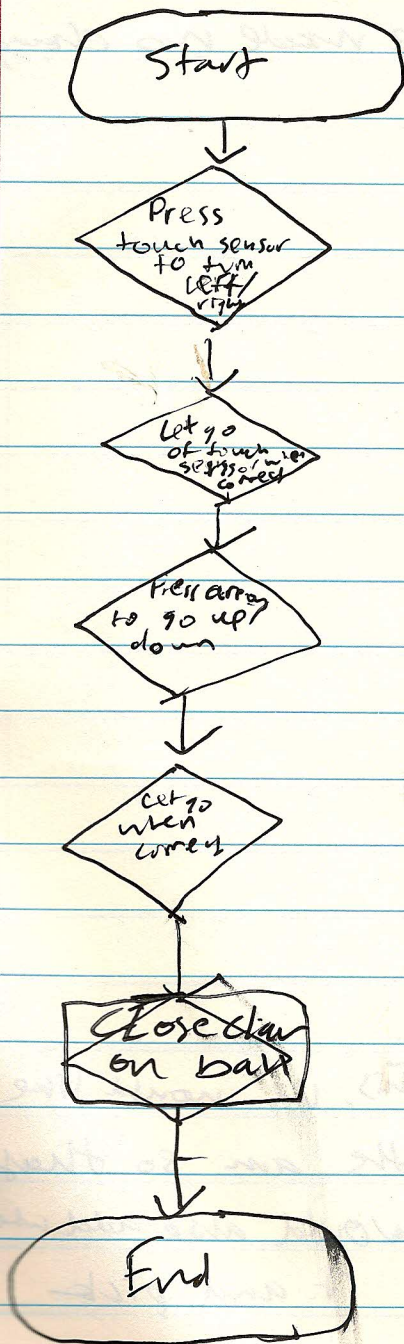control it using the touch sensor.

Several Possible Designs:

Tests

Our initial design for the robot actually worked out pretty well. We managed to get all the motors working and it was able to pick up the ball. So from there, we just began to add more functions and tweak our design. So we also implemented touch sensors on our claws and the ability to turn.

Pseudo Code

```
            ┌──────────────┐
            │    Start     │
            └──────────────┘
                   │
                   ▼
            ╱ Move left ╲ ──────────┐
            ╲ or right  ╱           │
                   │                │
                   ▼                │
             ╱  Move  ╲             │
             ╲ up or  ╱        Ball not
             ╲ down  ╱         in claw
                │                   │
                ▼                   │
         ┌─────────────┐            │
         │  Close claw │            │
         │   on ball   │            │
         └─────────────┘            │
                │                   │
                ▼                   │
            ┌──────────┐ ◄──────────┘
            │  End with │
            │ ball in claw│
            └──────────┘
```

Software Code

```
        ┌──────────┐
        │   Start  │
        └────┬─────┘
             │
             ▼
         ╱────────╲
        ╱  Press   ╲
       ╱ touch sensor╲
       ╲  to turn    ╱
        ╲ left/     ╱
         ╲ right  ╱
          ╲──┬──╱
             │
             ▼
         ╱────────╲
        ╱  Let go  ╲
        ╲ of touch  ╱
        ╱ sensor when╲
        ╲  correct  ╱
          ╲──┬──╱
             │
             ▼
         ╱────────╲
        ╱ Press arrow╲
        ╲ to go up/  ╱
        ╱  down      ╲
          ╲──┬──╱
             │
             ▼
         ╱────────╲
        ╱  Let go  ╲
        ╲  when    ╱
        ╱ correct  ╲
          ╲──┬──╱
             │
             ▼
        ┌──────────┐
        │Close claw│
        │ on ball  │
        └────┬─────┘
             │
             ▼
        ┌──────────┐
        │   End    │
        └──────────┘
```
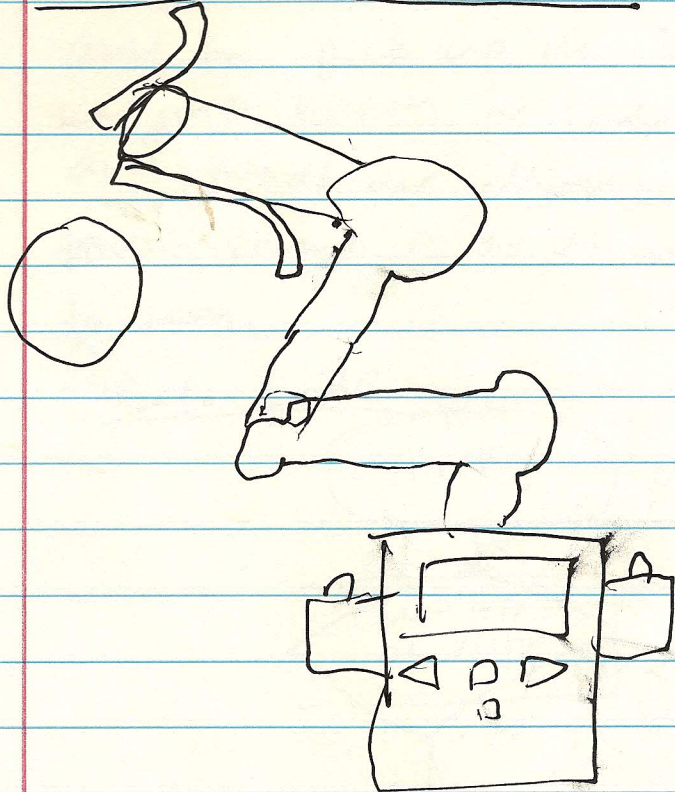
Code Modifications

Our code was fine and we made no changes to it.

Final Robot Design

Potential For Improvements

- The next time we do this, we would like to add extra supports to the arm so that it is less wobbly. We would also add wheels to it so we can drive it and pick stuff up with it.