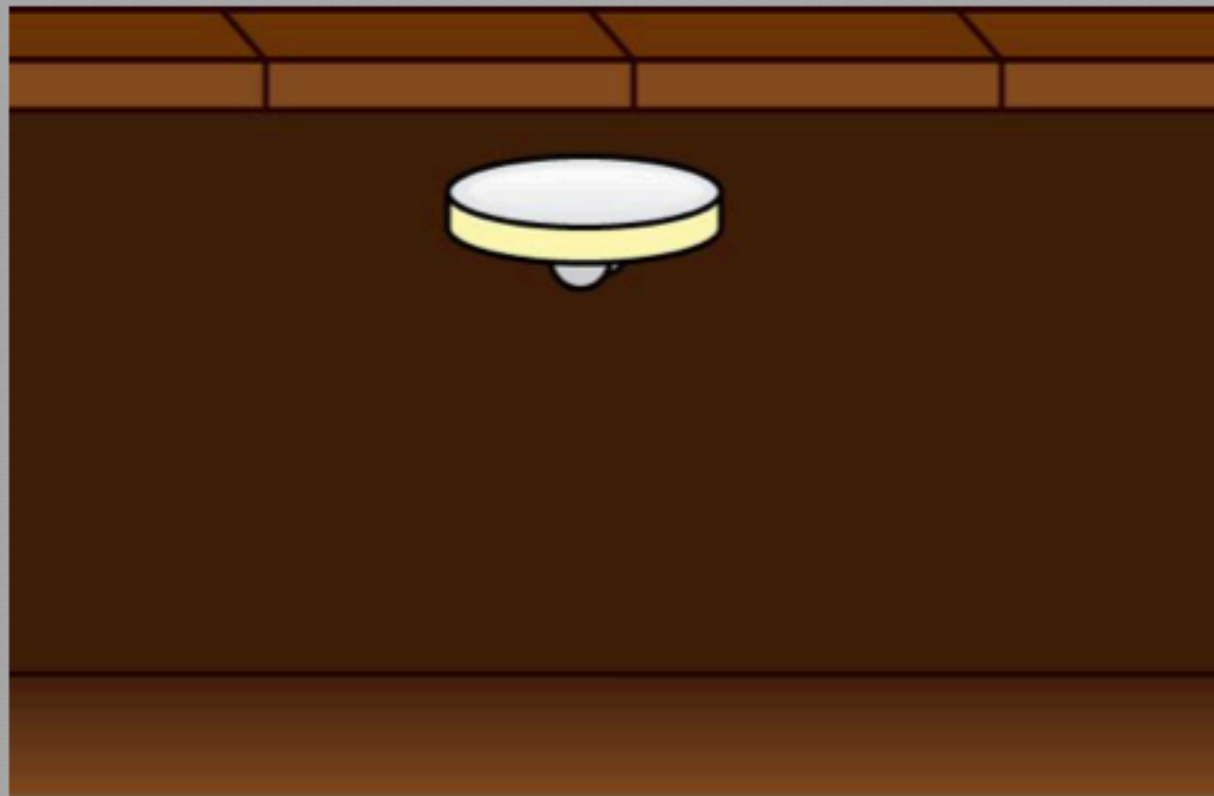


CoasterBot

**Silver B
Mockup Review**

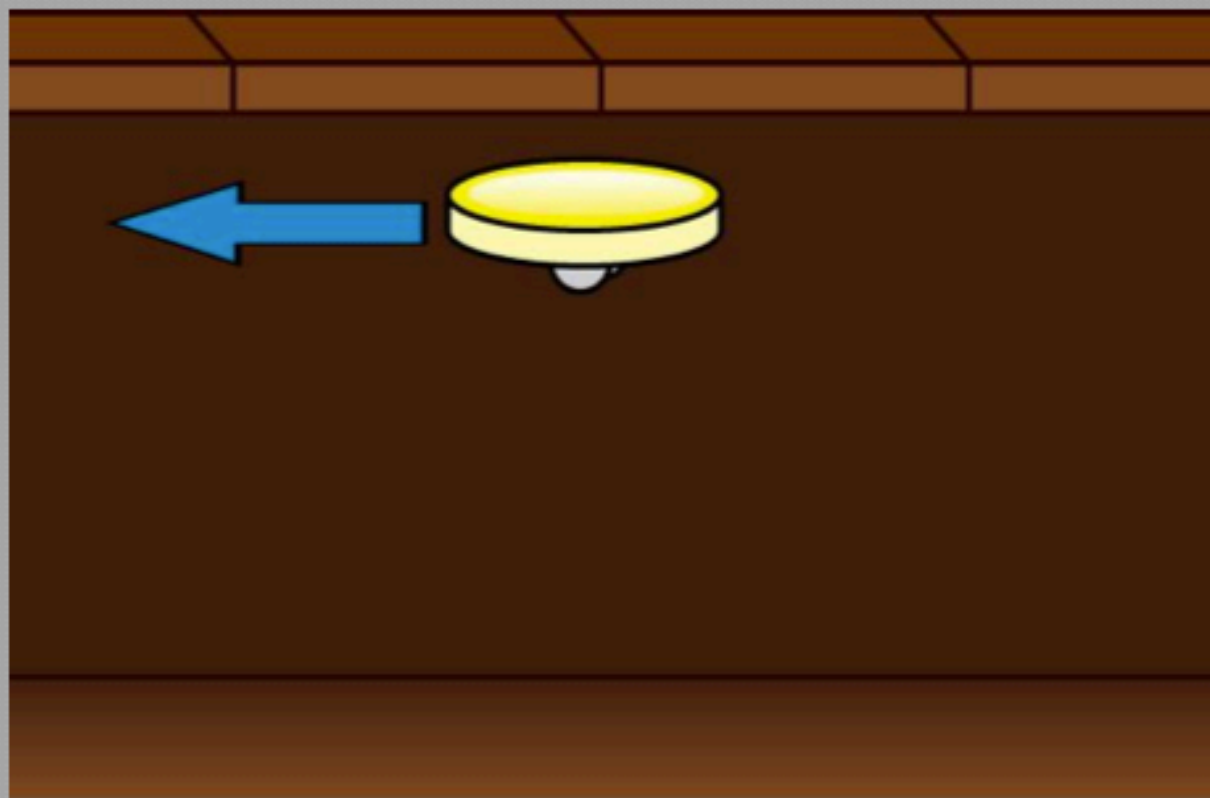
Scenario: Empty CoasterBot



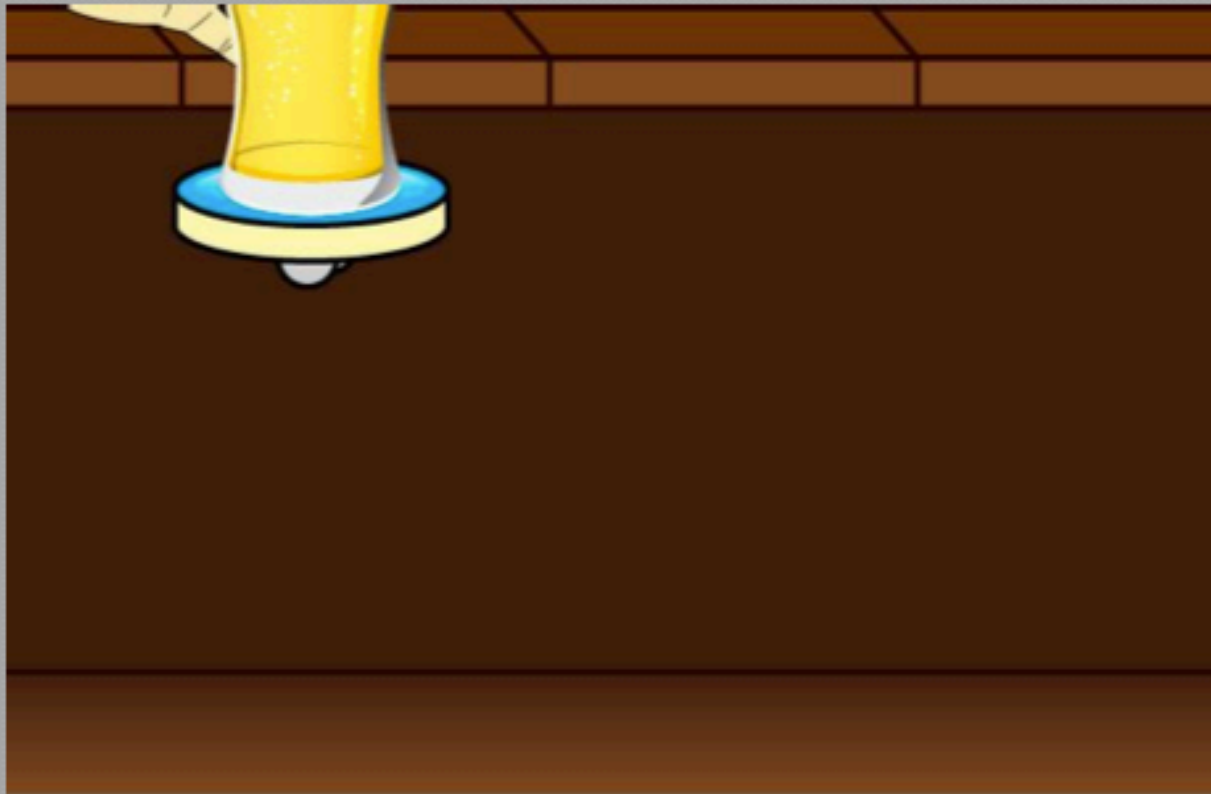
Tap your order on the Bot



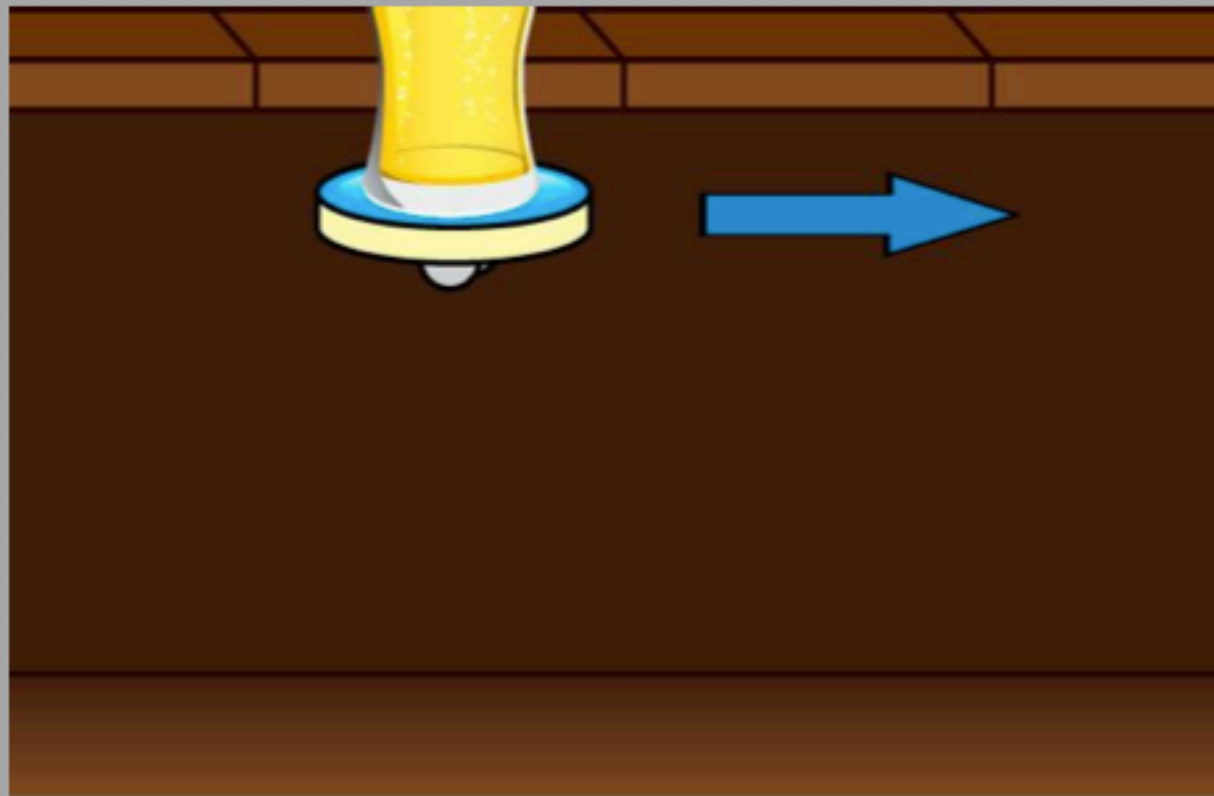
Bot goes to Bartender



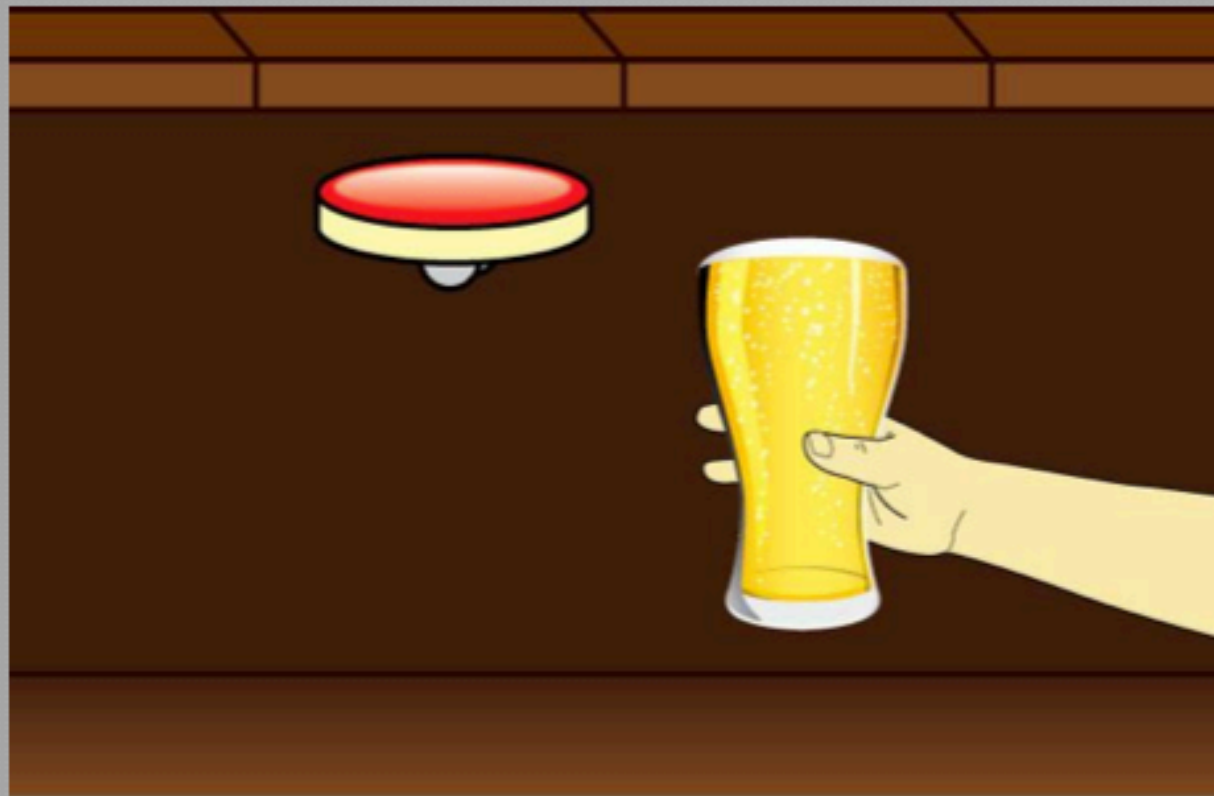
Drink placed on Bot



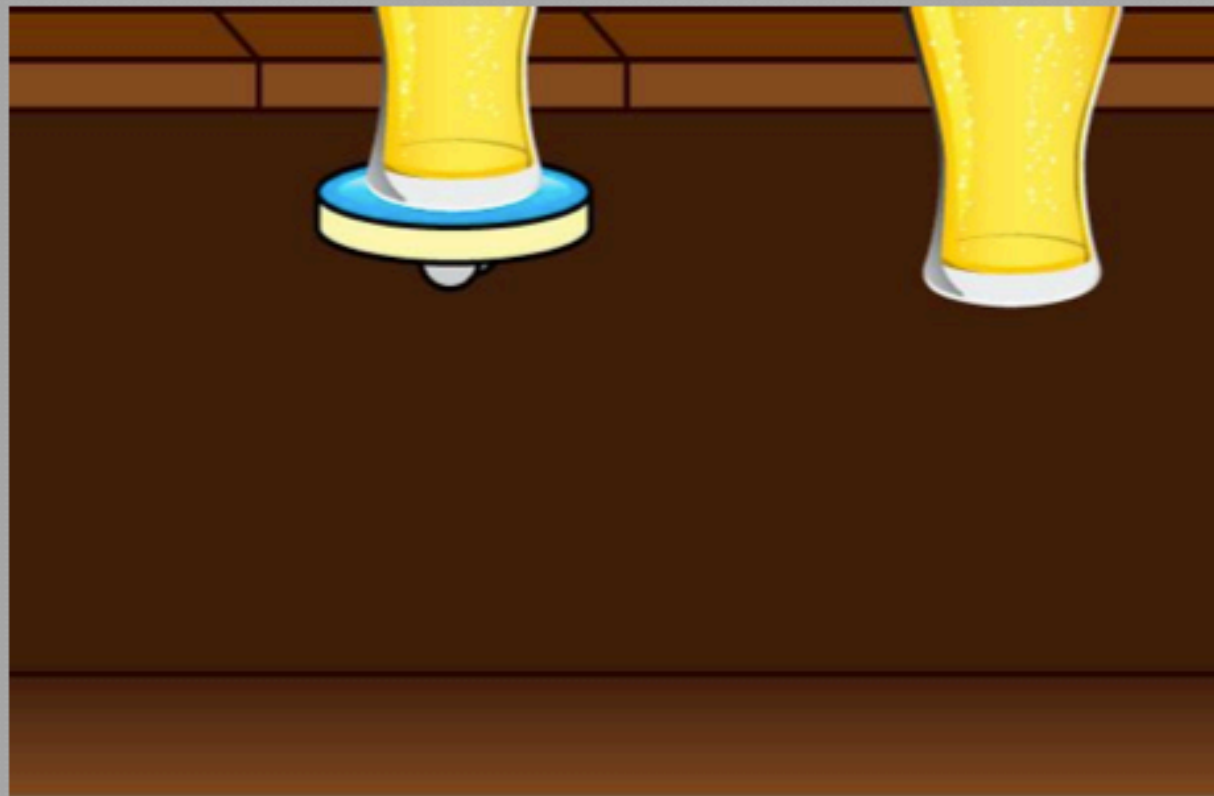
Bot heads in your direction



It's not his drink!



Bot “sees” an obstacle



Goes around the obstacle



Continues to destination...



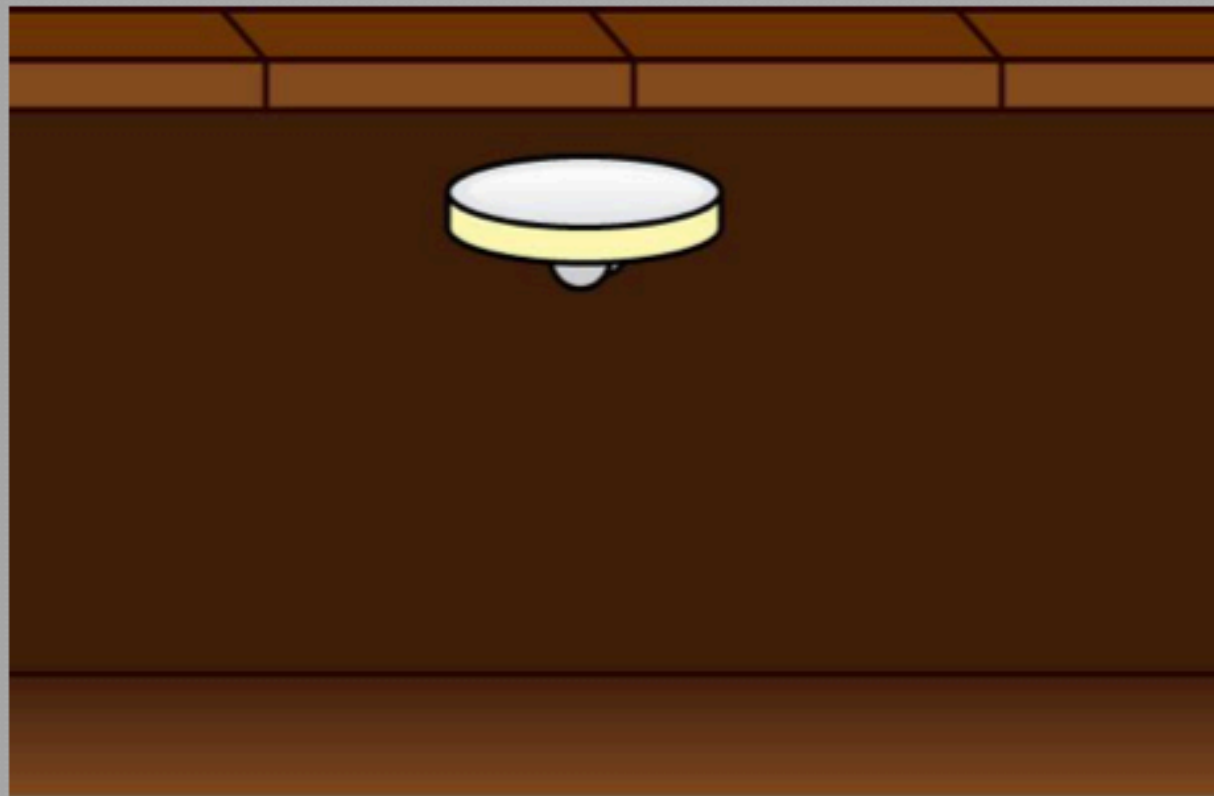
Turns green upon arrival



Enjoy!

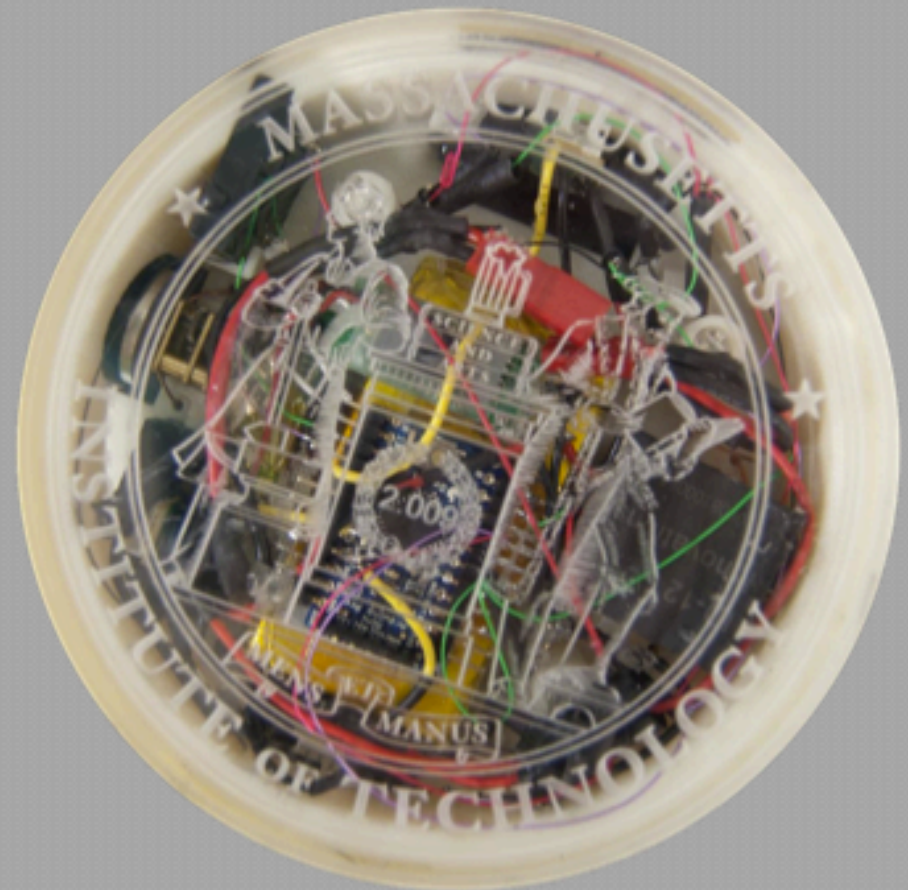


Repeat



CoasterBot

- ABS shell
- RFID readers
- Proximity sensors
- Indicator LEDs
- Small gear motors
- LiPo battery
- Microcontroller
- Translucent cover



Product Contract

- **Product Description:** a robot coaster that delivers the drink from the bartender to the customer
- **Intended Customers:** bar operators
- **Market:** bars, pubs, lounges, taverns

Customer Need	Design Attributes	Engineering Specs
Drink Stability	Accel. Control	TBD
Long battery life	LiPo battery	>12 hours
Long overall battery life	Charge cycles	>1,000 charge cycles
Bot avoids obstacles	IR Sensors	>10 cm
Water resistance	Sealing	>2 inch submersion
Drink delivery integrity	Drink detection	>100gm load cell
Fast drink delivery	Time	<5 min
Bot does not get stolen	Sound alarm	>10 feet
Fits on a bar	Size	24-30in bar width
Easy ordering	Memory Storage	>512kb

Goals

◎ Key Challenges

- Obstacle avoidance
- Water resistant
- Navigation
 - Lines, orientation, switching, edge detection
- Theft of coaster/drink
- Ordering system
- Charging
- Wire management
- Sensor size

Goals

◎ Key Challenges

- **Obstacle avoidance**
- Water resistant
- **Navigation**
 - Lines, orientation, switching, edge detection
- Theft of coaster/drink
- Ordering system
- Charging
- Wire management
- Sensor size

Goals

◎ Key Challenges

- **Obstacle avoidance**
- Water resistant
- **Navigation**
 - Lines, orientation, switching, edge detection
- Theft of coaster/drink
- Ordering system
- Charging
- **Wire management**
- **Sensor size**

Navigation?

- ◉ Wall following
- ◉ RFID-based location
- ◉ 24 or 30in bar width



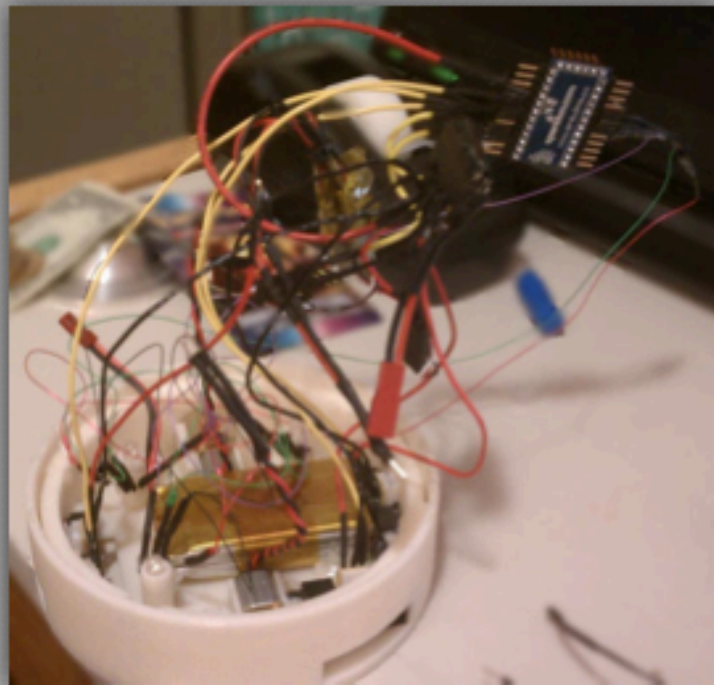
Obstacle Avoidance?

- ⦿ Low clearance
- ⦿ Proximity sensors



Component Specs?

- ⦿ Power
- ⦿ Size
- ⦿ Wiring



Benchmarking

- ⦿ **Technology**
 - Restaurant coaster pagers
- ⦿ **Charging**
 - Inductive
 - Stacking
 - Shelves/cubbies
- ⦿ **\$2,200 total system**
 - \$100 per coaster



Next Steps

- PCB
- Smaller sensors
- Body fabrication
- Charging
- Ordering system

- Convince Wallace to buy us caffeinated root BEER

