Bartendo: Automated Bartender

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Overview

Our goal is to create an automated bartending system that streamlines the drink-ordering process for bartenders and users. By allowing users to order online, users can order drinks more quickly and see where they are in the order queue, thus making bartenders' lives easier.

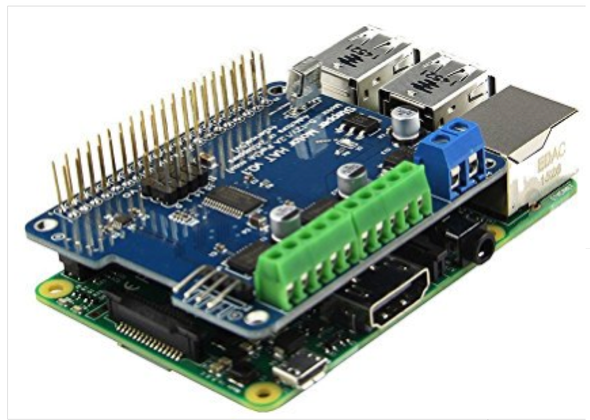
Motivation

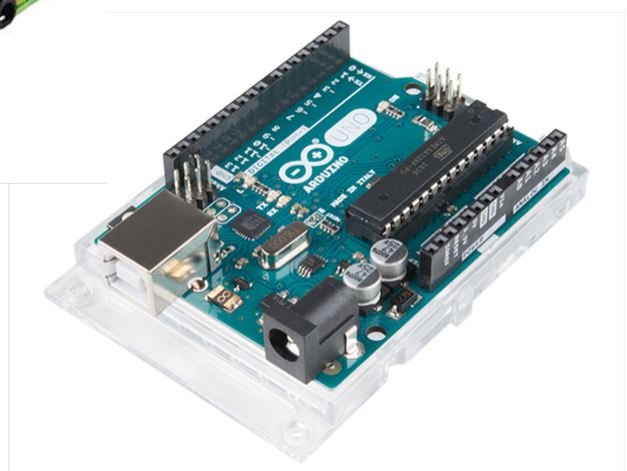
(1) Drink ordering is an experience that most people have had and can relate to.
(2) Internet-of-Things (IoT) is a growing trend in the hardware space, allowing physical systems to connect to remote software.
(3) Solution utilizes both hardware and software and reflects the comprehensive skills and knowledge that we learned through our course work.

System Architecture

Top:
Raspberry Pi 3, the "brain" of our system.
It gets orders from the web application, communicates with the Arduino to get sensor readings, and controls the pumps.

Bottom:
Arduino Uno
Used to read from various sensors and convey the readings to the Raspberry Pi





Challenges

(1) Budget Constraint
(2) Lead Time on Hardware Components
(3) Stabilization of the Physical System
(4) "Distributed" Nature of an IoT Project

Design Requirements

(1) Physical System must be able to create a drink in 80 seconds or less.
(2) Precision in amount of liquid of ±15%
(3) Support 5 bottles of different liquids (one for rinsing)

Additional Information

http://wise.ece.cmu.edu/redmine/projects/safebike/wiki/

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