

Aeropress™ (Coffee Press) Helper

Overview

Coffee is one of the most common drinks in the world. Making a good and tasty cup of coffee with the Aeropress™ requires precise and consistent technique that is traditionally done by hand. Normally, someone has to measure the grounds, add hot water, stir the grounds, wait for brewing, then press the coffee out. As such, making coffee takes a lot of effort and time, something that we all like more everyday.

The goal of this project is to automate the measuring, stirring, and waiting process, allowing the user to simply press the coffee out for the final and only step. In addition, we will add a Bluetooth module to allow the user to remotely start the brewing process and a LCD screen to show the user the remaining brewing time.

Peripherals

- LCD Screen
- Temperature Sensor
- Motors
- Bluetooth Module
- Motor Drive Controller Board

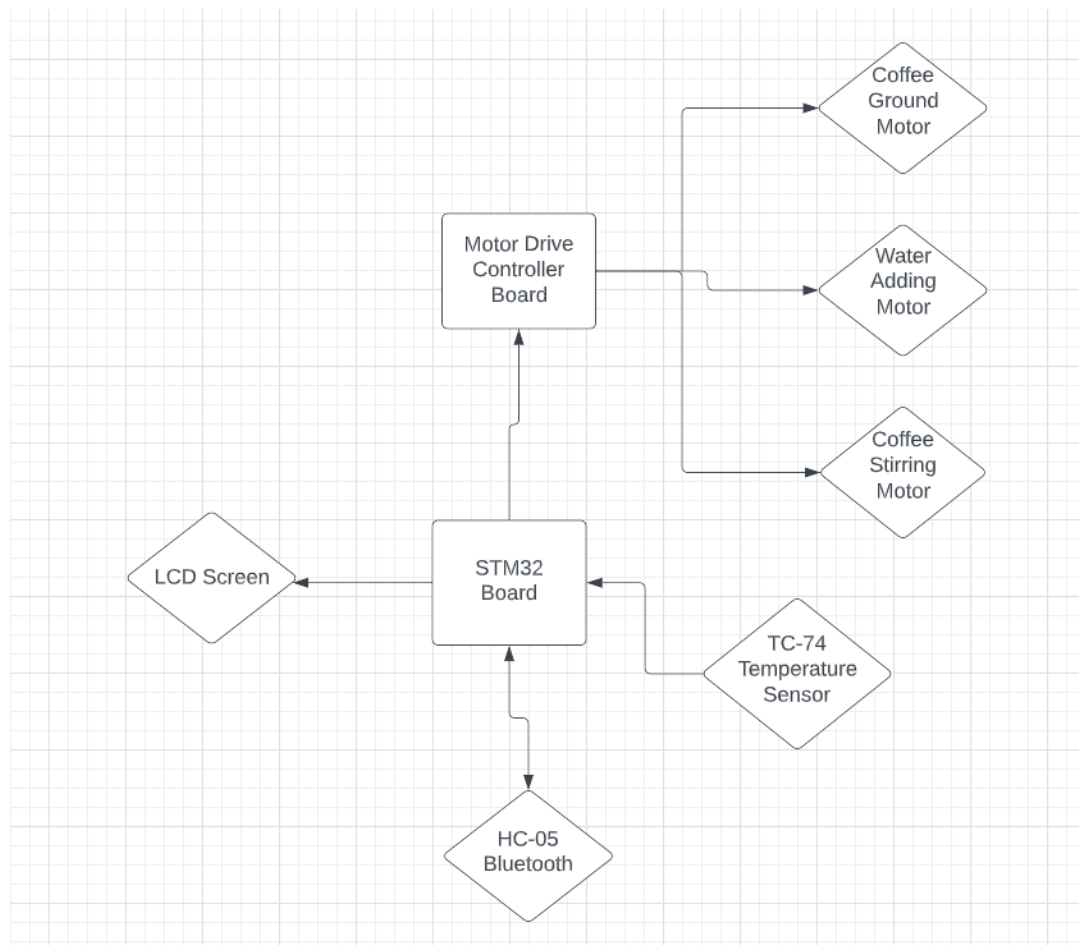
Serial Interface Protocols

- UART: Bluetooth Module
- SPI: LCD Screen
- Motors

Software Structure

- Program SPI and UART Protocols to interface with Bluetooth module and LCD display
- Create LCD messages about time remaining and temperature readings
- Implement coffee ground/water adding and stirring with motors

Block Diagram



Responsibility List

Frank Yao

- Interfacing with motor drive controller board and Bluetooth module
- Hardware design
- Creating timer with RTC

Spencer Tang

- Design physical layout of modules within the whole system
- Interface LCD Screen

Goal

Create a machine that automates the majority of the coffee making process for the Aeropress™.

Website

<https://sites.google.com/view/aeropresshelper/home>