

Automated Homebrewing System Controlled by an Android Device

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Homebrewing, as the name implies, is the process of brewing beer at home (for personal consumption, not commercial sale). To brew a beer, the homebrewer must heat the materials for the beer in multiple containers at specific temperatures for specific amounts of time. This requires that the homebrewer take precise temperature measurements and adjust the output of the heating element appropriately. The homebrewer must also transport the materials between multiple vessels. This amount of detail and manual labor can be both time consuming and difficult. It also requires the homebrewer to be near the brewing equipment at all times. That is why, for this project, I am designing and constructing a fully automated brewing system that is controlled by an Android device. The use of an Android device is important because it allows the user to be constantly updated on the status of the brew and make changes where necessary without having to be near it. Price, ease of use, and reliability are major focuses of this project and are key constraints for its design. Completing this project will take 5 steps. The first step is to develop hardware and software models to represent the system. The second step is to research and buy parts that will be used to implement the hardware model. The third step is to create the code needed to control the hardware, which is based on the software model in the first step. The fourth step is to construct the system from the parts purchased in the second step and to integrate it with the software created in the third step. The fifth and final step is to test the system for any errors. This project is important because an automated system gives you both consistent and precise control of the brewing process. This can vastly improve the taste and quality of a beer by removing many of the mistakes and imperfections that can occur in the brewing process.