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Development of an Efficient Automated Tea Making Machine with Customized Ingredient Levels

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Abstract

In the modern world, there is a growing trend towards automating various tasks for the convenience of humans as it makes work easier and efficient. Automating the teamaking process offers advantages in terms of time and cost savings. While there are automated tea machines available in the market, they lack the ability to adjust ingredient levels according to user preferences, preventing users from obtaining their desired cup of tea. Hence, this research paper proposes a novel design and fabrication steps of an automated tea maker capable of preparing a customized cup of tea based on user inputs for ingredient preferences. The primary objectives were to reduce the tea-making time from ten to twelve minutes to five to eight minutes and provide options for the user to select desired levels of sugar, tea, and milk powder. Through iterative development and experimentation, the teamaking time was successfully reduced to an average of seven and a half minutes, achieving the first objective. Further improvements in calibration offer the potential for additional reductions in the tea-making time. An important objective was to enable users to choose their preferred beverage types, such as tea, milk tea, or malt, along with their desired ingredient levels. Allowing users to input their requirements through a user-friendly Human-Machine Interface and obtain a customized cup of tea accordingly. Whether the user desires a milk tea with low sugar but high tea concentration or any other combination, the system can accommodate their preferences.

Keywords: *Automated tea maker, Beverage selection, Customization of ingredient levels*