UNIVERSITI TEKNOLOGI MARA

AUTOMATIC BREWING MACHINE WITH MULTI OPTIONS OF BEVERAGES

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ABSTRACT

As today's world pushing for optimizing daily work, so does our daily routine too. This study aims to create an Automatic Brewing Machine with Multi Options of Beverages. The prototype includes four input and three output. The developed system can either be interact physically or digitally via ESP32 Wi-Fi connection with Blynk IOT software. The input of the system is a push button for option selection, digital button on Blynk software for remote access, temperature sensor for monitoring water temperature and weight sensor for monitoring the weight of powder and drinking cup. Next for the output of the system includes water pump, light emitting diode (LED) and liquid crystal display (LCD). This study is based on the ADDIE development model, which includes the following steps: analyse, design, development, implementation, and evaluation. Furthermore, each system has its own set of advantages and disadvantages, with one system overcoming the limitations of the other. The proposed system offers convenience, accuracy, and customization in beverage brewing. This project contributes to the advancement of automated brewing technologies, improving efficiency and enhancing the quality of life through time-saving and precise brewing processes.

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INTRODUCTION

1.1 Research Background

The development of electronic gadgets has significantly transformed various aspects of our lives, both in industrial and consumer contexts. These gadgets, ranging from calculators to cell phones, have made many tasks more convenient and automated. However, when it comes to brewing beverages other than coffee, most households still rely on manual methods. While simple water dispensers can assist with boiling or cooling water, a more comprehensive and automated system is required to cover all the brewing stages.

Currently, there is no fully automated system in the brewing machines available in the market that can handle multiple types of beverages. Additionally, manual tasks such as adding ingredients into the cup are repetitive and time-consuming. This inefficient process not only consumes more time but also leads to inconsistencies in taste due to inaccurate manual measurements.

To address these challenges, the proposed solution is to design and implement an autonomous brewing system with precise measurement sensors. By automating the brewing process, the machine will reduce the overall time required to complete the task. Moreover, the application of electronic components optimized for specific tasks will enhance the machine's efficiency.

Therefore, the objective of this project is to create a functional prototype of an Automatic Brewing Machine with Multi Options of Beverages that is specifically designed for home use. This device will leverage the power of automation and offer multiple beverage options, enhancing the brewing experience for consumers.

The project's goals include designing a prototype of an automatic brewing machine with multi options of beverages that can brew beverages automatically, ensuring remote