

# Automatic Tea Maker Using Controller

Prof V.S. Baste<sup>1</sup> Saurav Kumar Sinha<sup>2</sup> Zaki Inam<sup>3</sup> Shardul Srivastava<sup>4</sup>

<sup>1,2,3,4</sup>Department of Electronics and Telecommunication Engineering

<sup>1,2,3,4</sup>Sinhgad Institute of Technology, Lonavala, Pune, India

**Abstract**— The tea vending machine currently available are in use for only commercial purpose, it has some snag regarding the maintenance, cost as well as less convenient while operating. Hence we have come up with our Smart Tea Maker, with some supplementary features where we have tried to overcome the hurdle. We have tried to serve the tea for large-scale production on some occasions or office use. To make it useful for disabled people we have prepared the design accordingly. All types of users and their demand are taken into consideration while designing. This 'Smart Tea Maker' will save your time and money up to some level as well. This will allow us to operate up to some range as the Wi-Fi module has been fitted in it. Hence we will be able to control its functionality from our android devices and just a press of a button will result in making a cup of tea.

**Keywords:** Operating Distance, Affordable to All or Any, Low Maintenance, Small Size, Micro-Controller

## I. INTRODUCTION

Going outside this time of year may be frightful, but there is one plus-side to frigid temps and howling winds—it's perfect tea-drinking' weather! Drinking tea is a popular habit of a healthy lifestyle for its significant medicinal benefits as a protective agent against cancer and cardiovascular diseases.

Tea has a history of a thousand years as a refreshing as well as a medicinal drink. To ensure the entire medicinal advantages of tea to the physical body, the acceptable way of creating good quality tea is vital.

An intelligent methodology is often accustomed to improve the grade of the tea by analyzing several parameters of the tea making process like water temperature, sugar content, milk content, brewing time and the tea leaves quantity.

To accomplish the task, a symbolic logic system is often applied to develop a sensible spoon system to form high-quality tea that preserves the advantages of tea without losing it.

## II. EXISTING SYSTEM

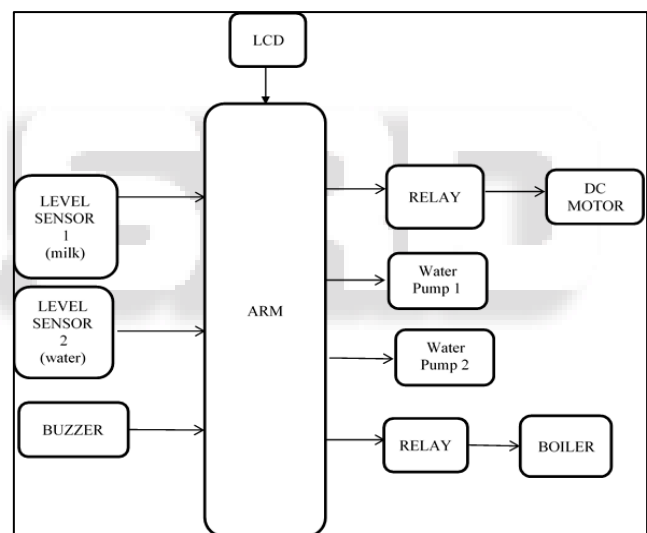
In the current scenario the people are getting more addicted to the tea hence demanding of tea in the market is increasing. Therefore, tea vending machine is in much demand. But currently the machine is more complex to handle and less efficient to the people. For old-age and disabled people it is very difficult to make a cup of tea when they are alone thus it becomes necessary in the house to have an automatic machine to make tea for the number of people. But as such no good quality of the machine is available. For students also it is time-consuming to go to the canteen every day and there is a chance of safety for them to use the stove for the same and thus tea maker provide safety to it. Current tea maker machines are very expensive with high maintenance which cannot afford for all.

Interconnectivity in real-life applications is very much in need. The real-life applications of the knowledge that we have achieved can all be used to analyse these all problems.

## III. PROPOSED SYSTEM

In this project, the system determines the grade of black tea and milk tea. Specifically, the proposed system considers five important characteristics of hot tea beverages like water temperature, sugar, milk, brewing time and tea leaves quantity for grading the quality of the drink according to the consumer's requirement. Both black tea and milk tea are often rated with a grade supported the human expert judgment which is consistent with the taste and aroma of the tea. This automatic tea-making system can let the users choose their preferred type of tea without figuring out the complicated process of making a cup of hot tea beverage.

## IV. BLOCK DIAGRAM



## V. HARDWARE AND SOFTWARE

### A. ARM

This system is based on the ARM processor. ARM processors are extensively utilized in consumer electronic devices like smartphones, tablets, multimedia players, and other mobile devices, like wearables. Because of their reduced instruction set, they require fewer transistors, which enables a smaller die size for the integrated circuitry (IC). The ARM processor's smaller size, reduced complexity, and lower power consumption make them suitable for increasingly miniaturized devices.

### B. Level Sensor

Basic level sensors are often accustomed to identify the purpose at which a liquid fall below a minimum or rises above a maximum level. It means it determines the level of water and milk after reached an identified point in the container.

### C. Relay

Relay is a major concern switch for any system which can turn on and off. It is an electromagnetic switch operated by a comparatively small current that will activate on or off the away large current. Both the pumps of milk and water should need to on for some interval to have a required proportion of both. This on and off functionality done by relay.

### D. Water Pump

The pump uses force to send fluid to the surface while it spins, causing fluid to be drawn from the middle continuously. The fluid leaving the pump flows first through the cylinder block and plate, then into the radiator, and eventually back to the pump.

### E. DC Motor

The primary advantage of the DC motor is that it can develop constant torque over a good speed application. A power supply is an important consideration in the application of DC motors. The most common way to provide DC voltage to a motor from an AC line is along with the utilization of an electronic drive.

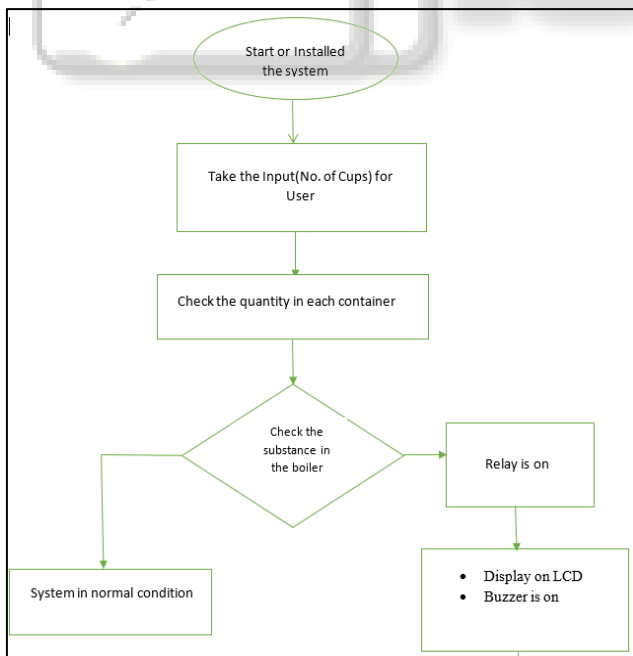
### F. Buzzer

A buzzer is an audio device, which can be mechanical, electromechanical or piezoelectric. Typically the use of buzzer in this system indicates that tea has prepared.

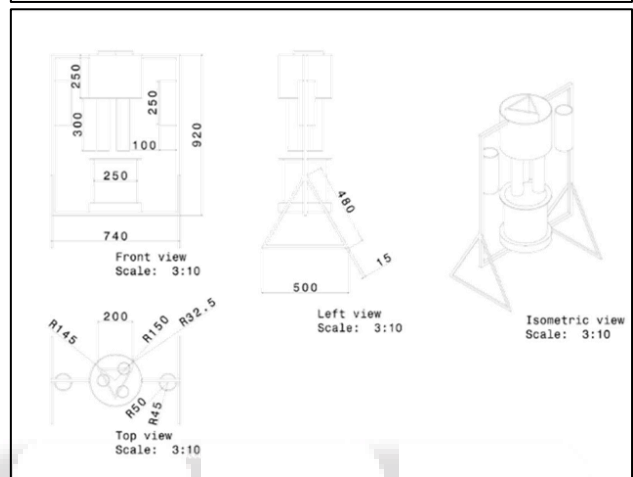
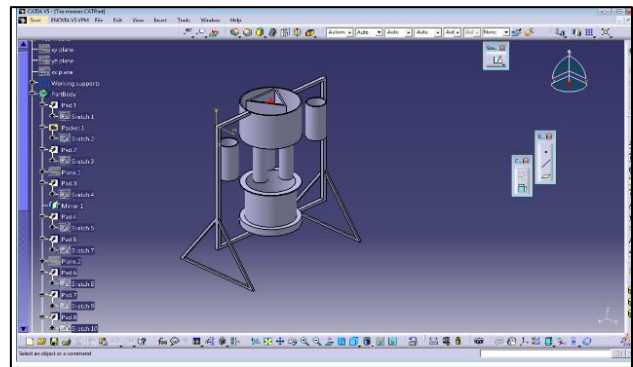
### G. LCD

LCD uses a liquid to supply a clear image. It shows the number of cups of tea as per the requirement of the person.

## VI. FLOW CHART



## VII. SCHEMATIC DIAGRAM



## VIII. RESULT

After doing certain experiments result for two cups of tea has been finalized. The result is finalized by tasting the taste of tea made.

### A. Result for two cups of tea:

Both the pumps of milk and water should need to on for 20 sec to have a required proportion of both. Then the heating coil gets to immediately, after heating for 4 minutes, the disc rotates and allows the sugar and milk to get into the vessel. The opening time of a disc is 1.9 seconds to have a required proportion. The heating is simultaneously going on. After 4 minutes the power supply to the circuit gets to break up as it is a part of the program only.

## IX. ADVANTAGES

- Save Time
- Cost-Efficient
- Power Efficient
- Best for Old Age People

## X. CONCLUSION

Automatic Tea Maker has a big advantage that it can be used at a household as well as a commercial purpose. It occupies less space as compared to the current tea makers. It provides a facility of operating it from a distance as well, for a physically disabled person it is very useful as it is observed that most of the physically disabled people are not able to make a cup of tea of their one. Time and proportion is a very crucial factor here, for acquiring good result lots of

experiment is required. The selection of proper material is one of the key design aspects as here, in this case, heating is there so the use of plastic material is avoided.

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