International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 06 Issue: 03 | Mar 2019 www.irjet.net p-ISSN: 2395-0072

Microcontroller Based Bhel Vending Machine

Mrs. Amruta S. Patil [1], Mrs. Ujwala P. Gavade[2] , Mrs. Trupti M. Patil[3], Mr. J. J. Mulani[4]

[1,2,3]*Students, Department of Electronics and Telecommunication, AMGOI, Affiliated to Shivaji University, Kolhapur(MH), India*

[4]*Assistant Professor, Department of Electronics and Telecommunication, AMGOI, Affiliated to Shivaji University, Kolhapur(MH), India*

Abstract - *A smart machine for the production of Bhel is proposed in this project. This machine is designed to make bhel specifically. Tamarind fluid has to be mixed in proper proportion in order to prepare bhel rice puffed, farsana, chili powder, certain spices. The user may choose taste (regular, medium spicy, spicy) and amount (no plate) for the proposed design. The required items are then mixed in the proper amount with the user-smart machine inputs. Automated bhel mixer with a microcontroller, which can push the single button with a mixed bhel.*

Key Words: Motor , Mixer, plastic parts, motor drive circuit, mixing unit, keypad.

1.INTRODUCTION

In our daily lives Food mixing takes place manually, by combining two or more foodstuffs. In order to produce a good blend (proper test), good understanding of foodstuffs has to be mixed. It is sometimes very important to handle the right amount of certain items. Seasonings, salt, peppers.

A smart machine for Bhel production is offered in this project. The machine is designed specifically for the preparation of BHEL. In the preparation of BHEL, tamarind liquid, BHEL, farsana, chili powders, some spices, must be adequately mixed. The users are able to select the inputs given to the user's smart machine by mixing the required elements in the proper amount (sweet, medium spicy, spicy), and quantities.

Containers are designed to handle various food products with specific plastic parts. Microcontroller controls the entire system. Suitable user interface will be provided (keypad, display, motors and pumps).

In the food industry, technology is being developed through automation. In Snack Centers, Bhel Stalls, gardens, hospitals and schools usually there is a huge crowd. Bhel must be delivered in due course. However, it is not possible to deliver in time because of the manual operation of Bhel preparation. The Bhel Vending machine that works faster and can serve more people than conventional Bhel manufacturers can change this type of scenario. It has mechanical systems as well as electronic systems. Works such as design, design, manufacturing, assembly and drives, microcontrollers and electronic circuits are included in mechanical engineering.

It can be set up at malls, cantines, hospitals, offices and so forth. Existing Bhel makers can buy it.

2. PROPOSED WORK SYSTEM

2.1 Block Diagram-

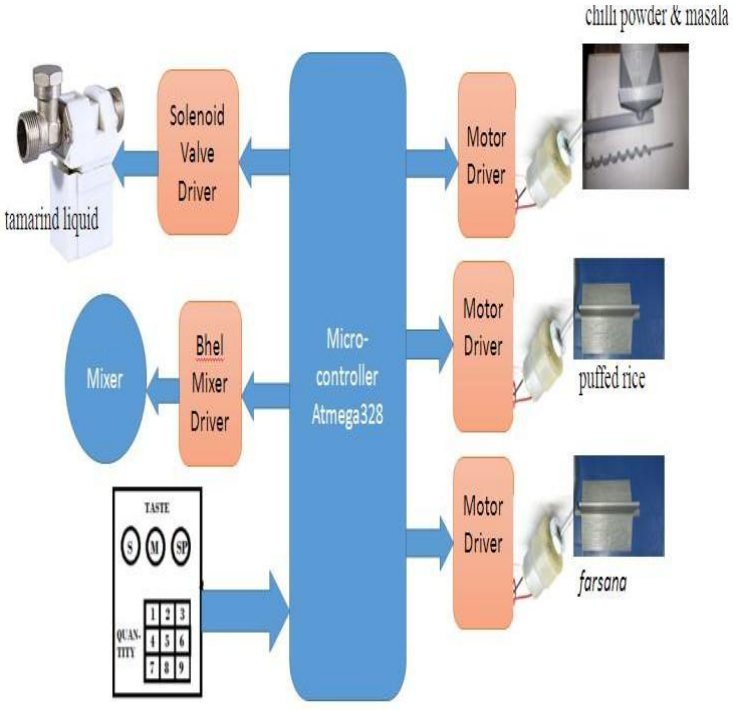


Fig. Block Diagram of Bhel Vending Machine

The figure above shows the project's particular block diagram. The block diagram includes a project core, key pad, motor, pump, plastic part and mixer, which is composed of a

microcontroller. This is detailed in all these components above.

Depending on customer requirements such as numbers of plates, Dry Bhel, Wet Bhel, etc., different inputs would be provided by the operator The microcontroller acts via sensors according to the input, and the signal is sent to IN and OUT actuators. All the necessary food materials are to be used in pots; a microcontroller and solenoid valve control the liquid food material. Solenoid valve is connected to the pot that is used to rotate the blades, which combine and are ready to serve with the foodstuff.

2.2 Flow Chart-

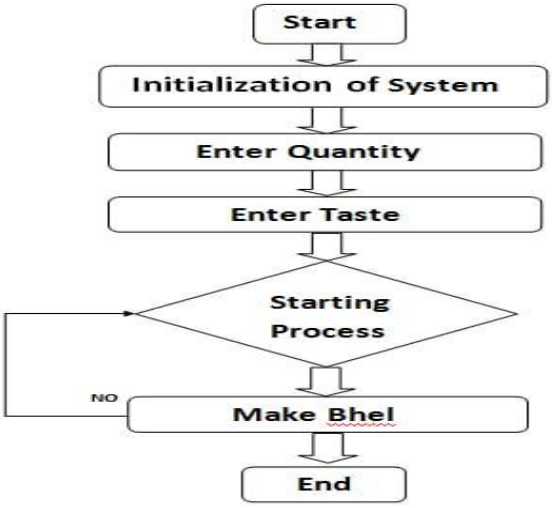


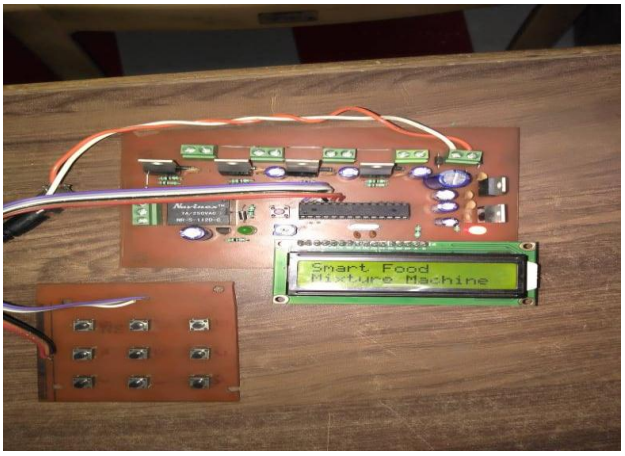
Fig. Flow chart of Bhel Vending Machine

2.3 Algorithms-

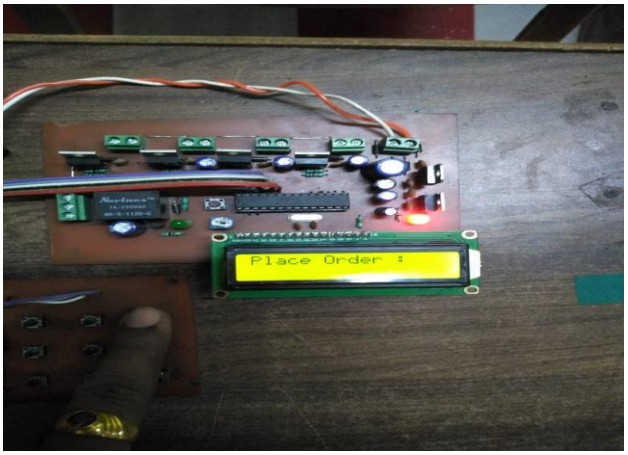
We used the following algorithm:
1. Inputs, i.e. quantity and taste no. are provided initially.
2. Electrical signals to the engines are transmitted to the inputs by microcontroller.
3. The engines associated with the various containers start rotating for a certain amount of time, depending on the inputs given.
4. We will take additional food products into mixing vessels which we will mix.
5. The mixing boat finally mixes all food items.

3. RESULT

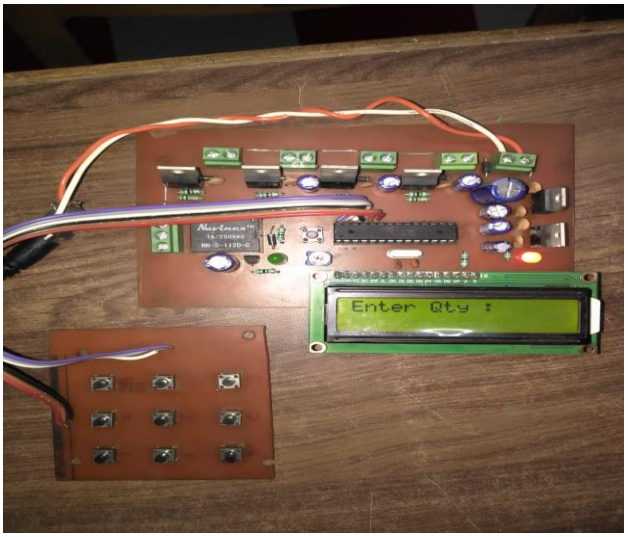
3.1 PROPOSED MODEL



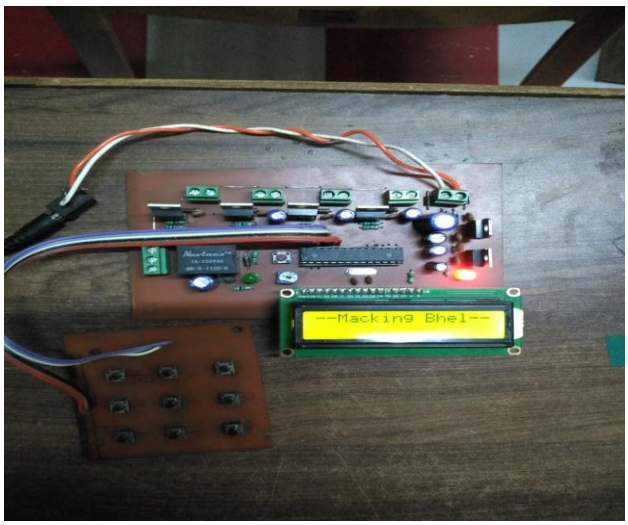
3.1 When order is being placed



3.2 Entering the quantity



3.3 Final process



3.4 ADVANTAGES-

• Hygienic overall.
• This project contributes to reducing human power.
• A controlled machine ensures consistently high quality and minimizes energy waste at the optimum level necessary for this period of time.
• Restricting no production stop and restarting the inspection machine.
• No properly proportional, manual mistake of mixing.

3.5 APPLICATION-

Used in Bhel Center.

4. CONCLUSION-

In this project, we are focused on the development and implementation of an automated Bhel mixer based on the microcontroller that can deliver a single button for the mixed bhel.

REFERENCES-

1). http://www.alldatasheet.com/datasheet-pdf/pdf/392243/ATMEL/ATMEGA328.

2). Kwangsoo Kim, Dong-Hwan Park et.al, "Smart Coffee Vending Machine Using Sensor and Actuator Networks", IEEE International Conference on Consumer Electronics, 2014 Kamalanathan.P et.al, "Automatic Paper Vending Machine", International Journal of Science, Engineering and Technology Research, Vol.4, Issue-4, 2015

3). Zhang Wen and Zhang Xin Long, "Design and Implementation of automatic vending machine Based on the short massage payment", IEEE, 2010

4). S.A.M. Matiur Rahmani, Md. Abdullah Al Mamun et.al, "Design of Automatic Controlling System for Tap Water Using Floatless Level Sensor", IEEE International Symposium on Robotics and Manufacturing Automation, 2014

5). S.Tsai, S. C. Mukhopadhyay et.al, "Microcontroller-based Sensors and Instrumentation For Roll-to-Roll application", IEEE Sixth International Conference on Sensing Technology, 2012