National Conference on
"Role of Engineers in Nation Building" organized by VIVA Institute of Technology, Mumbai
(6th and 7th March 2020)
International Journal of Engineering Research & Science (IJOER)
ISBN:[978-93-5391-287-1] ISSN: [2395-6992] [Vol-6, Issue-3, March- 2020]

Automatic Pani-Puri Vending Machine

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Abstract :*Today, automation has been an integral a part of the food industry as concerns over health and safety have increased worldwide. We have taken up a simple local food of India, The Pani-Puri, and design a product that can automate its making process to ensure that the best taste and quality is available to customers without concerns over health or safety. This machine is designed to take input of fried stuff, water and required spices and produce the Pani-Puri. The automation make sure that the work is done smoother, safer and unconventional skill.*

Keywords—Pani-Puri, Vending Machine, Automation, Health and Safety, Food Industry.

I. INTRODUCTION

The vending world is expanding very rapidly. Now, you will be ready to see the machines within the mall and at various parks. This new type of sale has already become an excellent part of every person's life. This is why many people are eager to own a vending machine and earn money with this very suitable business opportunity.

With a vending machine, you would not think of hiring an employee to try to work for you. Neither will you be obliged to stay there all day. You all want to try to stock some products within the machine and you will leave it. It has a facility that allows the customer to purchase and pay without any help.

It provides instant food and drinks[1][3] [4] [9].. The idea of installing a vending machine is to supply foods and beverages that are capable of being consumed by buyers. When you are going shopping with a vending machine, you do not need to get a spoon and shake your coffee. All you have to do is get it and enjoy it while you are doing something more important

It is effective in selling tickets[1]**.** One of the earliest uses of vending machines is to successfully distribute tickets. If you are getting to compare speeds within the distribution of tickets with the use of a slot machine and therefore a manual way to sell it, you will see that the former method is faster.

An easy source of hygiene products[1] [8]**.** There are different times when you go to the toilet and you suddenly realize that you do not have a sanitary pad or you need a sanitary napkin. With the availability of vending machines in public restrooms and other locations, you can now save more time and effort in buying whatever you need from a store.

It can produce products in just one minute[1] [3] [4]**.** The main reason for becoming vending machines is to manufacture products available at the moment. Imagine yourself running late for work, you had not yet had your breakfast and you only have five minutes. Instead of going to a local cafeteria to buy a cup of coffee, which you still have to make, you can simply put some coins in a coffee vending machine and you will have the ability to have a drink in just a moment.

It is a great source of comfort[1]**.** There are vending machines in various places such as parks, train stations and malls. For children, standing next to a vending machine and expecting that candy to return are some of the things that can be relaxing. When you are out of the office for your break, you simply sit down and drink the entire drink that you have taken from a vending machine nearby.

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II. DESIGN METHODOLOGY

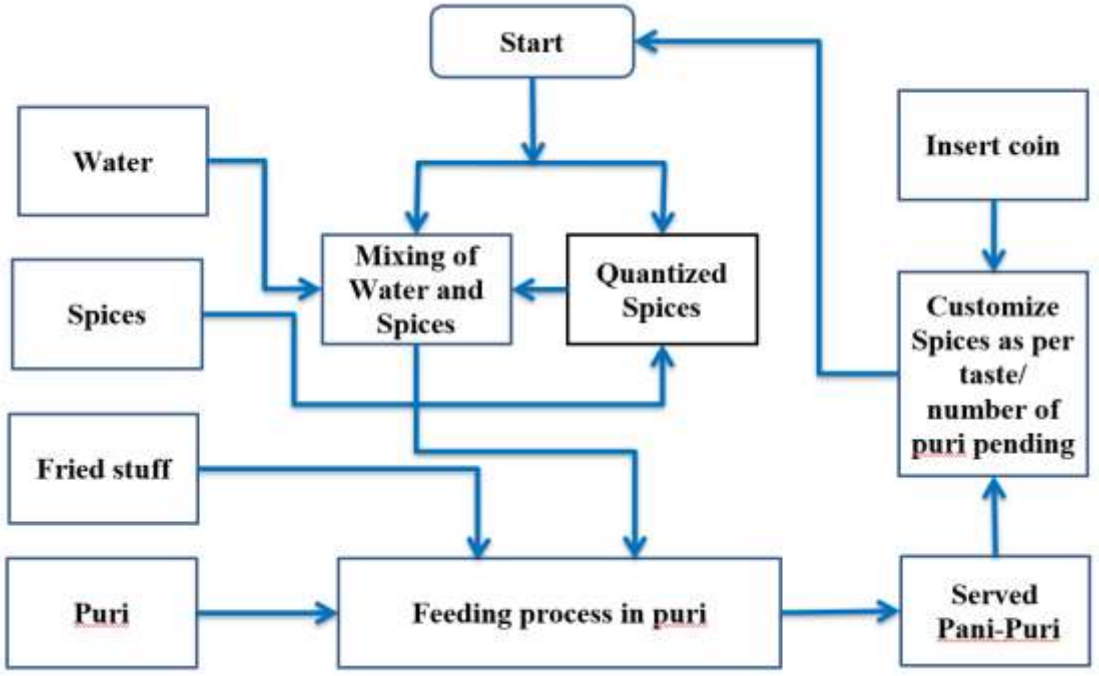

FIGURE 2.1:Flow of project

2.1 Working:

Function of the system is divided into 4 steps:-

1. Enter the coin.
2. Customize spices as per your taste(for example level of spicy low, medium, high).
3. After this raw ingredients is taken and it will go for mixing process.
4. Finally Pani-Puri will be served.

III. TOOLS TO BE USED

3.1 Hardware Component:
3.1.1 Solenoid valves:

Solenoid valves are electrically activated valves, which are usually not intended to control the flow or direction of air or liquid in fluid power systems[2] [3]. Both pneumatic and hydraulic fluid are used in power works, the spool or poppet designs of most solenoid valves make them flawless for various tasks and applications.

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3.1.2 LCD:

We come across LCD displays everywhere around us. 16 × 2 displays 16 characters per line in two such lines. Each character in the LCD is displayed in a 5 × 7 pixel matrix.

3.1.3 DC Motor:

The advent of power electronics has replaced DC motors with AC motors in many applications. Here dc motors are used for conveyor belt. Where stuffing, water filling serving of Puris are done.

IV. RESULTAND DISCUSSION

Figure 4.1 Conveyor belt

Figure 4.2 Conveyor belt (Initial Position)

Figure 4.3 Conveyor belt (Second Position)

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Figure 4.4 Conveyor belt (Third Position)

Figure 4.5 Conveyor belt (Final Position)

This project is designed in such a way that it will work in four steps that is collecting, drilling, stuffing and serving of the Puri is achieved with the help of conveyor belt and the time interval between each steps is 0.35sec. As the above figures follows the four steps respectively.

V. CONCLUSION

In this work, the automation of a well-liked snack has been achieved. This product is indigenous since the Pani-Puri made by this method shall suit the taste of the locality from which the survey has been made. There are several parameters and design non constraints that has been neglected to permit more and more research work on this particular device which shall spawn up more cheaper, more hygienic and better technology within the future. The fabrication of the device might be made with the above set of knowledge and knowledge described. We believe this product has huge industrial application as the food industry has been booming since the past few years. Such ventures would offer more and more employment opportunities for people in India and increase the foreign revenue generated by the country.

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