



Customized & Smart Vending Machine

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Background

The vending machine history started from a very long time ago. The idea of it is very helpful for people who are in a hurry, do not have a close restaurant or a place to grab something to eat from. The need for a vending machine in our country is not high due to the lack of variety of vending machine types and what meals it serves. Usually, you will find a vending machine for packed pre-made food like sandwiches, sweets and candies, beverages, and coffee. But the problem is all of them are already pre-made food. A vending machine that cooks for or at least cooks some ingredients for you to have a fresh meal is not in the market. People who do not have access to food on late nights, people who do not cook or are not allowed to, would benefit from having a close vending machine that serves a full meal. People also would have a problem with knowing where the vending machines are and would waste their time if it was out of stock or did not find what they desired.

Problem Statement

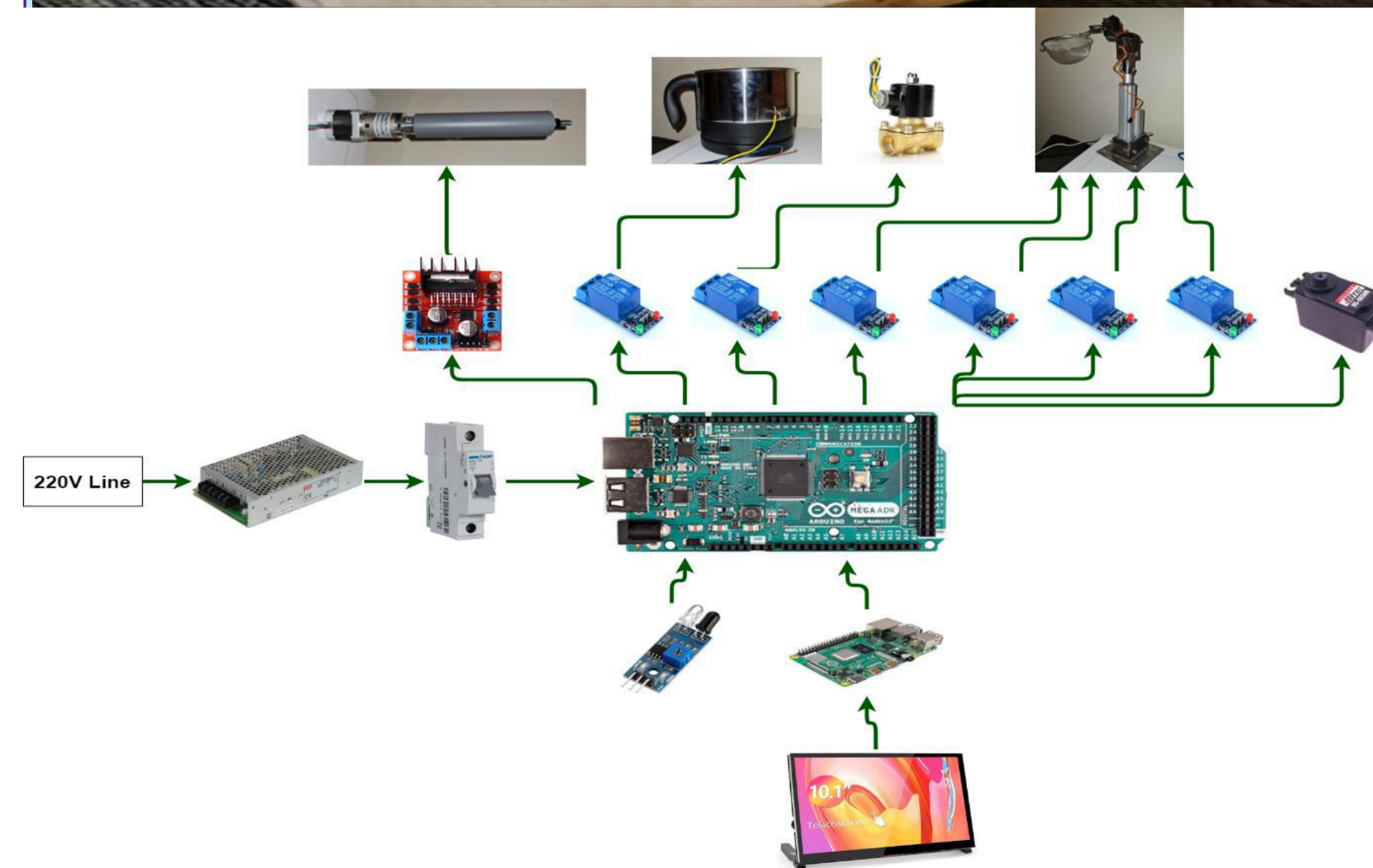
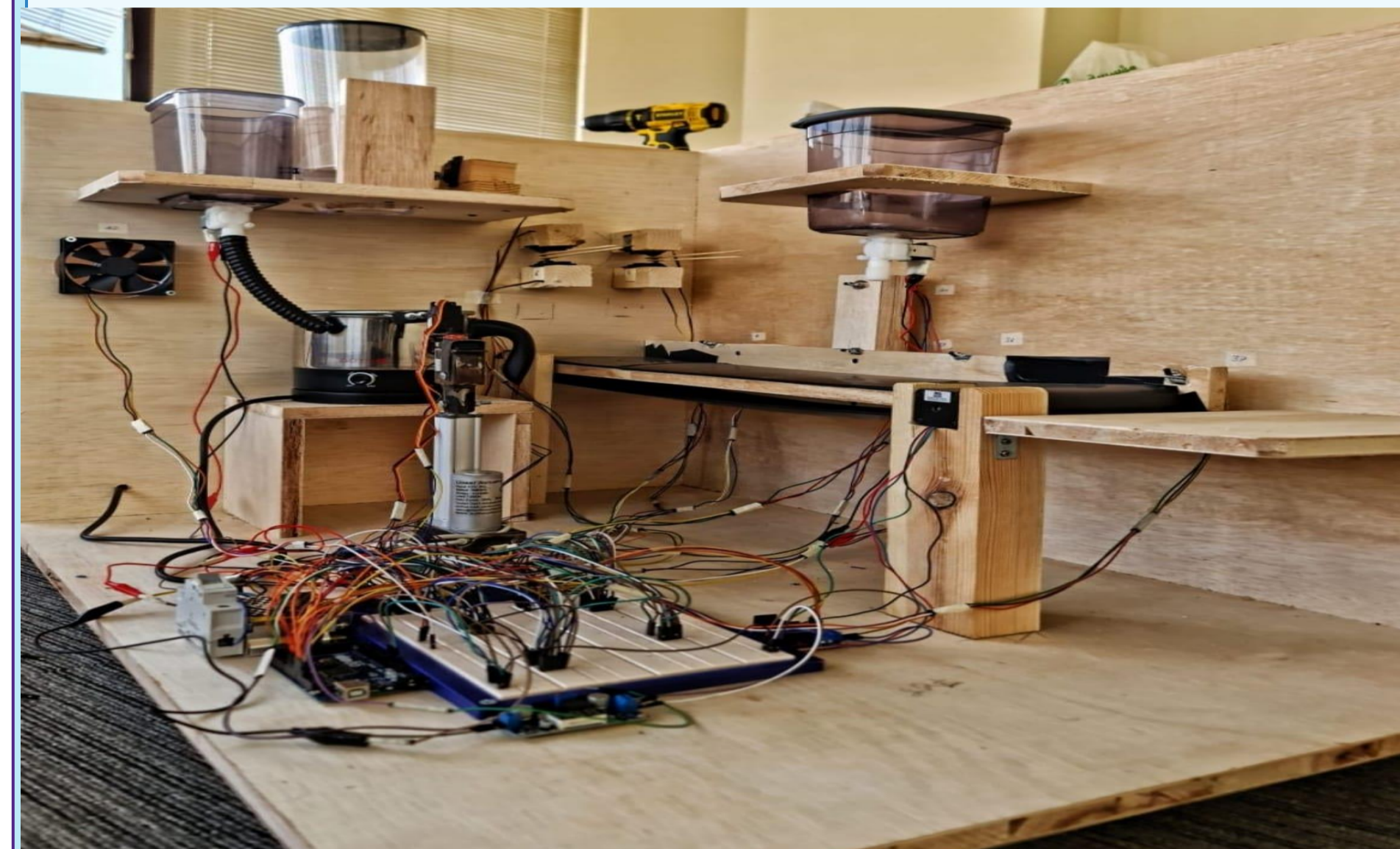
Developing a smart vending machine that utilizes half-cooked and raw ingredients to produce high-quality macaroni, offering a convenient and freshly prepared pasta experience.

Project Specifications:

Customized Food Orders	User Input System
Ease of Maintenance Access	Restocking Alert
Number of Steps to Order	Dashboard System
Quick Payment Process	
Ingredient Freshness System	
User-Friendly Interface	
Mechanisms for Quick & Efficient Cooking	
Time of Preparing One Portion	

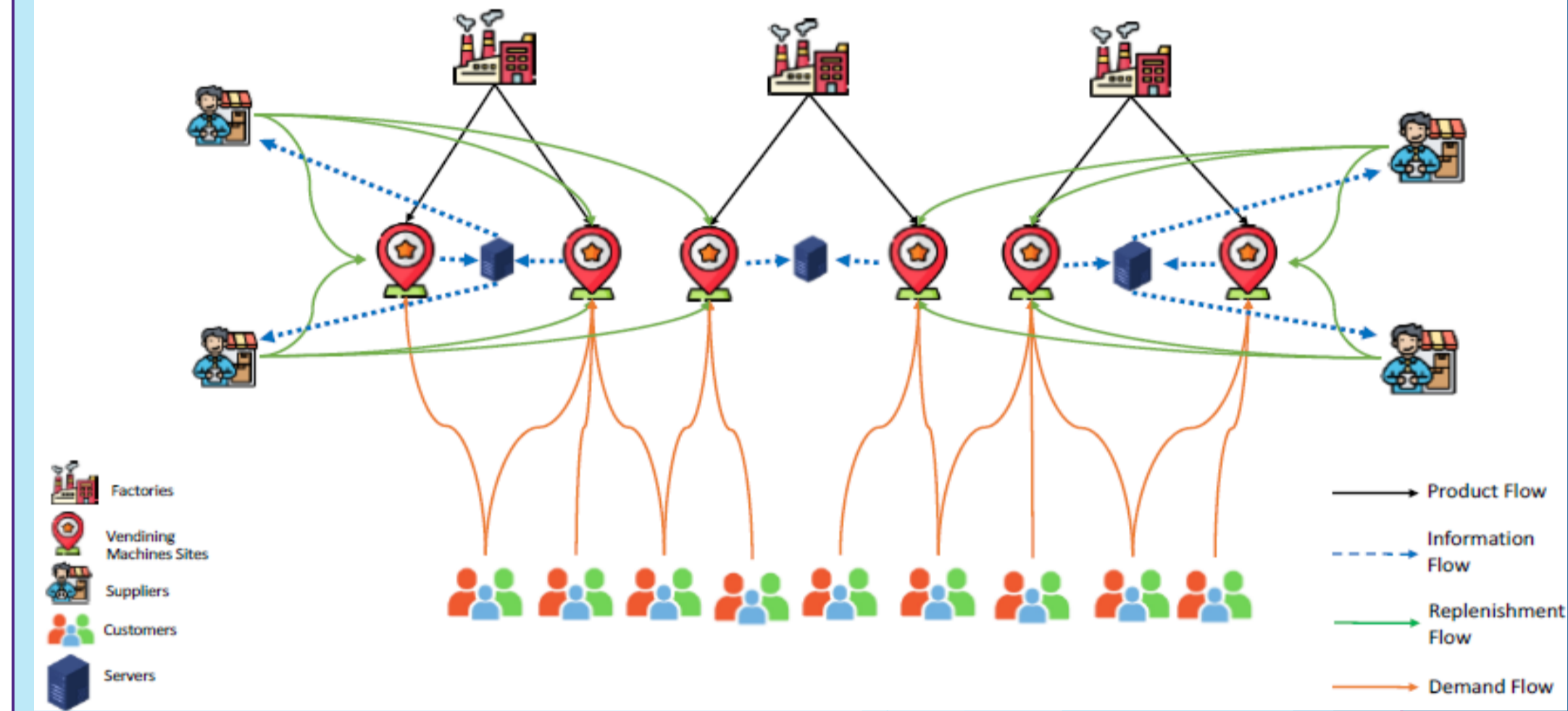
Fundamental Physics

Automation system
Control Systems
Heating Technology
Mechanics:
Internet of Things (IoT)
Embedded Systems
Networking
Database Management
Cloud Services:



Supply Chain Network: Retail Storage with Customer Pickup

The proposed supply chain network design, which we suggest naming "Retail Storage with Customer Pickup", is an approach to delivering fresh pasta to customers through strategically located vending machines. This network design incorporates modern technology and efficient logistics to ensure a seamless flow of products and information.



Conclusions

The project is a prototype of a customizable vending machine that can prepare orders at the current time and serve fresh food (with the possibility of having some of them half-cooked). This idea will have many impacts like economic impact, societal impact, and environmental impact. Moreover, this project is scalable and can be used differently depending on the demand and the supplier company since each supplier may request a different design.

Future Research

Vending machine cooks fresh spaghetti noodles in less than 3 minutes with different kinds of noodles. It has the capacity to cook meals simultaneously with both plates coming out in the same door, the door has two sides. The controller vending machines have inside it a selection of different pre-made sauces for the end-user to select with his spaghetti noodles. The sauce is in a packet and only needs to be poured on the noodles and mixed.