SMART VEND

"Smarter Picks, Smoother Transactions."

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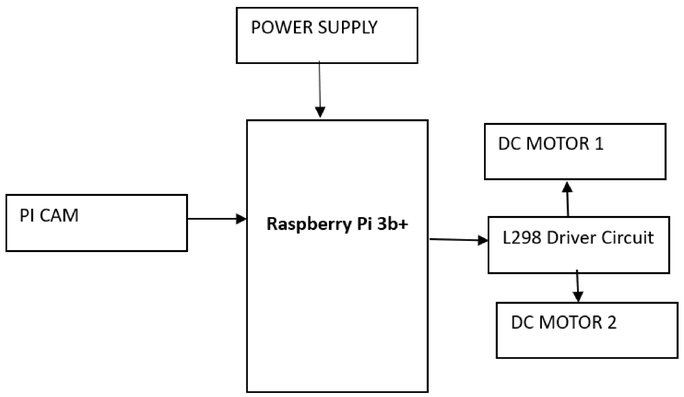
Block Diagram



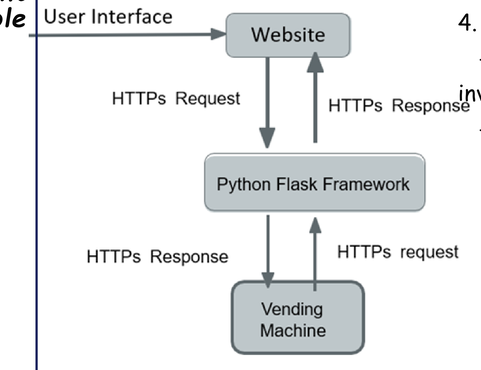
01. Introduction

SMART VEND offers a revolutionary vending experience with an intuitive website allowing users to effortlessly browse, select, and order products. Upon confirmation, a unique QR code is generated, providing seamless access to chosen products at any SMART VEND machine

02. Problem Statement

To design a smart, low powered vending machine with fully digitalised payment options and facilities suitable for university and colleges.

Software Flowchart



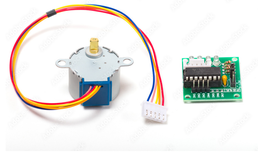
03. Motivation

1. **Enhanced Convenience:** Our project enhances user convenience by enabling efficient, contactless vending machine transactions. Users can remotely place orders, eliminating the need for physical interaction and improving the overall experience.
2. **Time Efficiency:** The project streamlines vending processes, allowing users to place real-time orders through a website. This approach significantly reduces the time and effort traditionally associated with vending machine transactions.
3. **Reduced Human Intervention:** Minimizing the need for frequent human intervention, our system autonomously updates inventory status, enhancing operational efficiency by relieving human operators of constant monitoring responsibilities.
4. **Contactless Transactions:** Prioritizing user safety and hygiene, our project facilitates contactless transactions through a website and QR codes, aligning with modern expectations for touch-free interactions with vending machines.
5. **Document Printing Facility:** Differentiating itself, our project introduces a unique feature—on-the-go printing of PDF files via a mobile application. This expands the range of services beyond traditional vending capabilities, providing added value to users.

04. Methodology

1. Raspberry Pi Integration:
   - Implement the vending machine design on a Raspberry Pi, ensuring compatibility and functionality.
   - Utilize Raspberry Pi's GPIO pins for motor control in dispensing items, bridging the physical design with the digital interface.
2. Web Application Development:
   - Develop a user-friendly website with server-side capabilities for seamless product selection and order placement.
   - Ensure real-time synchronization between the website and vending machine inventory.
3. PDF Upload Interface:
   - Design an HTML document allowing users to upload documents for printing.
   - Establish a connection to print uploaded documents through the vending machine's interface.
4. Wireless Network Implementation:
   - Enable real-time communication to update the server with the vending machine's current inventory status.
   - Ensure accurate and up-to-date information for users through wireless network implementation

Raspberry pi 3



DC motor and motor drivers

PI Camera

05. Conclusion

In summary, SMART VEND redefines convenience with a seamless fusion of advanced web technology and vending machines. Our innovative approach, from online ordering to QR code-enabled product retrieval, sets a new standard for efficient and delightful snacking experiences. SMART VEND aspires to be the epitome of modern vending, where simplicity meets sophistication.dy.