



Project title: Stationery Spot

Academic Year: 2023-2024

Group Members: Aya Khammash

Department Name: Computer Engineering

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Project Type **Hardware**

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Project's Abstract:

Our project aims to develop an automated vending machine dedicated to dispensing essential educational supplies such as sticky notes, pens, calculators, and other stationery items. This project's main goal is to provide an easy, fast and efficient way for the students and teaching staff alike to have access to the needed supplies on the go without the need for them to make the trip to a store that sells them. The project's target market is in academic environments like universities, schools, colleges, and libraries. The project offers a solution for accessing educational supplies and saving time. It also ensures that students specifically have the necessary tools for an effective learning experience.

The project's objective is to create a smart vending machine that sells educational supplies. The project covers many elements and aspects including developing an intuitive mobile application and machine interface, integrating an advanced inventory control with real time stock monitoring to keep the machine consistently stocked, and providing secure, adaptable payment options. Adding strong security features, accurate dispensing methods, and remote monitoring capabilities will be essential to enhancing the machine's functionality, security, and user satisfaction. The primary goals are to ensure a smooth user experience, enhanced security to deny unauthorized access, and efficient remote monitoring and maintenance using the mobile app.

The smart vending machine is designed to enhance the user experience and simplify the process of buying the needed products instantly. The hardware consists of multiple slots that store the products. Each slot is equipped with a motor system for precise product dispensing. The user can select the products he wants by multiple methods such as: a keypad system and through a mobile application where he can choose the amount and view the prices. It provides a payment feature, the user can pay by scanning his card with



RFID. The purchased products are moved by motors attached to the helical wire, the wire moves to enable the product to be dispensed. If the user didn't get the purchased items a buzzer will be used to inform him that the product needs to be grabbed. The machine also sends notifications to the mobile application to inform the admin about the state of the products and if they have to be refilled, the state of the slots is detected by sensors.

There are various types of vending machines available, catering to different needs and markets but none of them focus on supplying different products for people in the academic field, also we are designing a vending machine that differs from others by providing features and capabilities not found in the machines available in the market right now. This makes our machine one of a kind and unique to anything designed beforehand.