



Essentials WebApp Case

Code X

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CS_341_A: Web Technologies

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Description of the Business

Essentials is a mini mart located on the premises of Ashesi university campus. Essentials provides faculty, students and staff snacks, groceries, toiletries and other essentials for their daily needs. The mart primarily accepts cash, mobile money and Ashesi meal plan as forms of payment for products bought. As a mart that sells/provides snacks, groceries, toiletries and other essentials, essentials purpose is to provide convenient, affordable, and reliable access to basic necessities for the Ashesi community.

Problem Statement

Currently, customers who purchase from Essentials and wish to pay using the Ashesi meal plan face long queues at the pay counter. The process of verifying and processing payment transactions by the cashier is time-consuming and causes delay in the schedules of the customers as well as dissatisfaction at the waste of time. The inefficiency also limits the output, productivity and yield of the store since fewer customers can be served within a give time and the delay in purchasing items discourages customers from coming back to purchase more items.

Proposed Solution

To ensure that the issue of delays in purchases are resolved, our team, code X has come up with a web- based application which will allow customers to browse for available items, add them to a cart, and purchase them online. Customers can also choose to:

1. Pre-order items, pay for them and simply pick them up at the store.
2. Receive a QR code receipt after payment which can be scanned quickly for verification when the items are picked up at the store.
3. Request the delivery of items to the rooms on or off campus for more convenience.

The system integrates with the school's meal plan payment database as well as mobile money APIs to provide seamless payment processing.

Core Functions

1. Product Catalog & Availability – Users can browse and search products by category, view stock availability, and check prices.
2. Online Ordering & Cart Management – Add/remove products to a shopping cart and confirm orders for pickup or delivery.
3. Payment Integration – Allow payments through the school's meal plan system (securely accessing the school's database) and mobile money.
4. Order Fulfillment & Verification – Generate QR codes or unique order IDs for pickup, with the option to schedule deliveries.

Roles / Types of Users

1. Customers (Students, Faculty, Staff) – Browse, order, pay, and either pick up or request delivery.
2. Store Staff / Cashiers – Verify QR codes, prepare pickup orders, manage delivery scheduling, and update stock.
3. System Administrator – Manage products, update prices and availability, monitor payment integration, and ensure data security.
4. Delivery Personnel (Optional) – Handle delivery requests to dorms or residences.