Self-Ordering machine for Canteen (SELFO)

Abstract

- Nowadays, the ordering system in canteen requires a lot of cash for change money, a tiresome daily manual recapitulation, and order forms that require sellers to spend extra money.

- Therefore, we proposed a machine as a solution to those problems. This machine can eliminate the need of change money, do automatic recapitulation and reduce the cost of order forms.

- Customers can order menu using an interactive menu in this machine, pay using a contact card, and wait for the order to be delivered, while recapitulation data is stored directly in the database.

- The hardware Machine is designed using Raspberry Pi 3B+, touchscreen LCD 10.1", thermal printer, and the card reader that is based on ATMEGA 328P.

- While the software program is based on python.

Objectives

- A canteen is a store that sells food and drinks at a place like a school, college, or office.

- Problems faced are :

  - First, a difficulty to find an exact amount of change money for transactions. The sellers often give customers candy as change.

  - Second, buying physical order forms requires sellers to spend extra expense. The order forms used by the sellers consist of three copies: one for customer, one for pantry, and one for recapitulation.

  - Third, manual recapitulation can be a trouble according to the sellers. They manually copy the data into the computer and compare it with the cash they get. This process is not efficient and the amount of money that they get is difference with the data on the computer.

Objectives

- Solution: This self-ordering machine (SELFO) is an integrated system that can connect to the application on the seller's computer.

- Customers can place their order and make payment using smart card via this machine.

- The ordered items are then sent to the seller's application. The seller can monitor customer's orders.

- By using SELFO, sellers don't have to provide change and physical order forms. Besides that, the recapitulation process has been done automatically.

Benefits to Society and Environment

- SELFO has successfully become self-ordering and payment machine without using cash.

- With SAM, only special smart cards can be used to make payments using SELFO. This is intended as the security method.

- Seller application is able to accept orders from SELFO and edit menu on the SELFO application.

- The current design has completed the basic concept proposed. Development in several aspects can make this system better in the future.