

Restaurant POS system using Raspberry Pi

March 29, 2016

Team Members:

Lakshman Pasala

Karthik Kanuganti

Objective:

A casual dining or a fine dining restaurant (without a POS system using pen and paper), where table service is available often requires a group of attentive servers to ensure the orders are placed and cooked correctly. Moreover, they may require a floor manager to check if the orders reach the right tables. This could create a lot of havoc because of human negligence or mind juggling. For e.g. the server might have noted down a customer's steak to be cooked 'medium' instead of 'medium well', or the chef might have cooked it 'medium well' as it said but sent it to a wrong table who ordered 'medium rare'. With this problem in mind, this project is aimed to build an efficient but low-cost POS (Point of Sale) system with additional capabilities available in current commercial systems and some more. This system can be used in restaurants like the traditional one to offer functionality such as: Display menu, Choose items to order, Calculate bill amount, Record method of payment, Display in the kitchen what food was requested, the time the order was placed, and the table number. Along with these our system would also be able to record and save audio of the order and present an option on the kitchen display system to play.

In addition to the above mentioned features, if time permits we like to implement NFC tags (unique to an order) and a Wi-Fi module (may be embedded in the table) to communicate to ensure order has arrived at the right table.

Challenges:

We are mainly trying to reduce the cost of a POS system and also extend the scope of a POS system to reduce the number of misplaced orders. The challenges while trying to do so can be:

- The time constraint of the project
- Creating a database to store audio files and send the audio files between two Raspberry Pi s
- Designing a good UI with multiple pages and to be run on touchscreen.
- Scalability – For the sake of ease, we are implementing one Kitchen Display system (KDS) and one Server order pad (SOP).

Deliverables:

At the end of this course project, we should have our hardware system working with at least the features available in a traditional POS system.

Bill of materials:

We would like to have the two Raspberry Pi s, the power cables, wireless dongles and battery packs available to us. Some additional hardware that we require are as follows:

Part	Cost	Link	Comments
LCD Display	38\$	http://www.sainsmart.com/	US Warehouse, Free shipping
USB Microphone	6.99\$	http://www.amazon.com/	Prime eligible

Concept overview:



Chef checking his KDS (Kitchen Display system) monitor



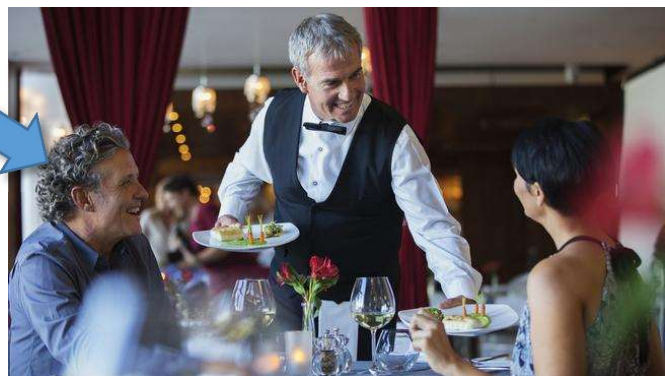
Server sends order info and audio using SOP (Server order pad)



Chef cooks the order and presses done on the KDS, waits for the server



Server being received the notification on his SOP comes to collect the order and heads back to customer



Server serves the happy customers