



CASE STUDY

INDUSTRIAL SHIELDS



RESTAURANT ORDER SYSTEM

This project is designed to make an order system for restaurants, capable to be adapted to different needs and made to fit in the modern restaurant sector of nowadays. The system will be automated using a PLC as the center of control and data bank, a switch and some PC Panels to monitorize and interact with the information input-output feed.

This application is thought to work with two types of connection, Ethernet and WiFi and it will be necessary an MQTT server connected through a VPN to the WiFi PLC. This database could be shown on several Panel PCs based on Raspberry Pi3 that will monitor all the information.

SUMMARY

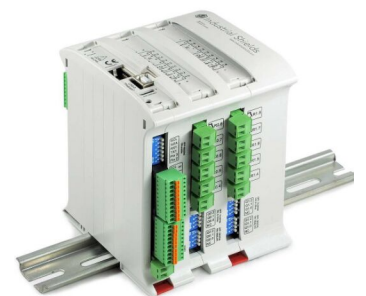
The system will follow some defined patterns. The clients will have at their disposal three different ways to order the food; through the classic Q&A model, using their own mobiles or tablets inside the establishment through a brand new order application, or the delivery method using our web or calling to our phone number. All this information will be sent to an Arduino based PLC through WiFi or Ethernet connection, where the information will be processed. The PLC will be connected to a switch through Ethernet cable and this to several Panel PCs to monitorize all the orders. The screens will be distributed on the kitchen and the order preparation area. The interface of the Panel PCs will be easy to use, made with Node-Red, and the restaurant workers will be able to introduce information and interact with the panels to ensure that the orders always follow the right way until be prepared for the client and, in the case of the take away food, to be delivered, tracking all the process.



OBJECTIVE

The main points to achieve are the following:

- Restaurant order system semi-automation.
- All processes controlled and monitorized all the time.
- Easy management; through the PLC, the Panel PC, even so using a mobile phone or a tablet.
- Divided labor camps respect the monitoring interface (the cooks and the preparation area workers will have their own proper interface).
- Provide to clients the maximum and easier number of ordering ways.
- Adaptability; the system could be modified respect the hardware and reprogrammed respect the software to adapt to every little change.



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FINAL SOLUTION (HARDWARE)

The restaurant order system will bring to clients three different ways to order; in the classic Q&A method, the dependents will introduce the client orders in the Panel PCs, in the Mobile/Tablet method, the clients will be able to make the order with their own devices using a brand new app of the company and, in the last way, the delivery method, the clients will have the possibility to make the order through the restaurant web page or through phone calls (in the case of the calls it will work like the Q&A method as the data will be introduced by the worker using the Panel PC).

All this information will be sent by WiFi or Ethernet connection to the WiFi PLC, which will develop the task of being the brain, the center of the system. The PLC will process this information and will send it to the Panel PCs using Ethernet cable (using a switch to distribute the connections). This data will be rightly shown in the Panel PCs interface, the kitchen ones will show a proper interface for the cooks, with only the useful information for them, and it will show all the order details for the workers of the order preparation area cause they have to ensure that there is no lack of anything and everything is on point to be served to the client.

To carry out this system it will be needed to create a proper server and use Node-Red to develop the interface. It will bring to both, client and worker, loads of facilities and options such as to cancel the order or to mark the orders that are already made. It will provide an order tracking at every moment and point of the order, until the client have the food. From the point of view of the delivery method, the distributors will be able to control their orders using the app (a version for them) through their phone (or one given by the company).

