Squadra verde

Presents

Introduction Project
"FRATELLI PIZZA"

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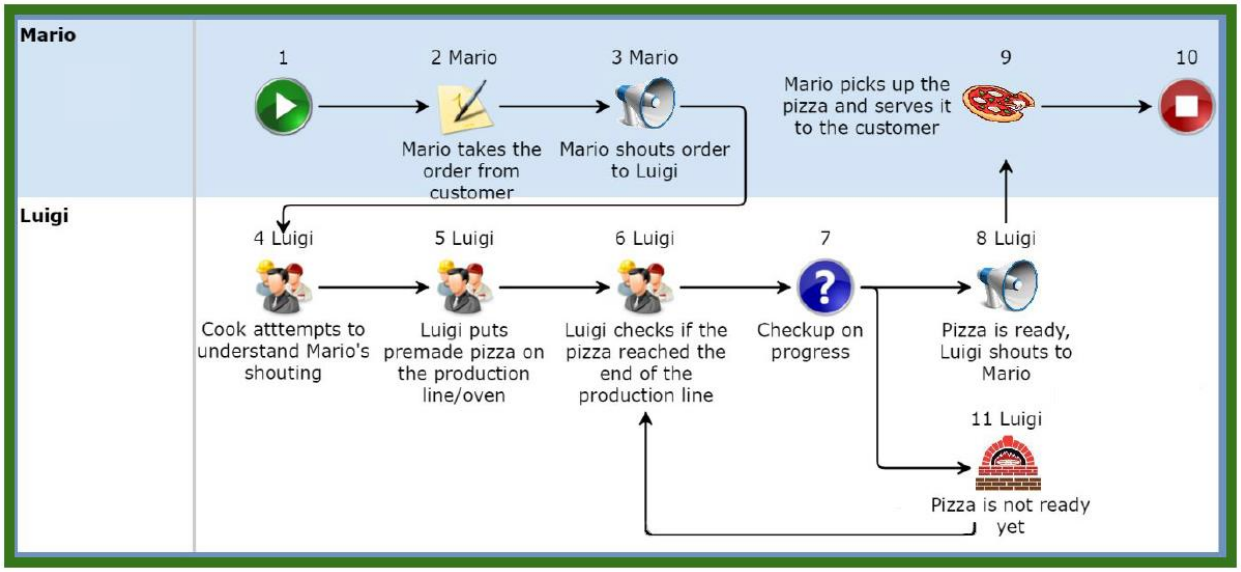
Problem definition

After a thorough analysis of the provided project plan, the workflow (Figure 1) was made to represent the current situation.

Figure 1. Current workflow



Three issues were marked as main bottlenecks.

- Taking and sorting orders is not effective nor efficient (Steps 2, 9)
- Communication is not reliable and redundant (Steps 3, 4, 8)
- Constantly checking if the pizza is ready is a waste of time (Steps 6, 7, 11)

In order to provide solutions to all the bottlenecks below two goals where set:

Application where the data cashier inputs is visible to the chef including order number. It will help deal with the increased demand and leave customers happy. It will also simplify taking and sorting orders and remove the need for verbal communication, which is unreliable.

- Notification (text, sound or other) to inform the cashier that the pizza is ready. This will remove the need to constantly check on the progress of the process, which will save time and diminish possibilities of mistakes.

Project Graphics

In the first week assignment we misinterpreted the task and unnecessarily created a new logo for the improved Pizza Shop, however, we did use the logo (Figure2) in both chef and cashier interfaces (Figures 3 and 4).

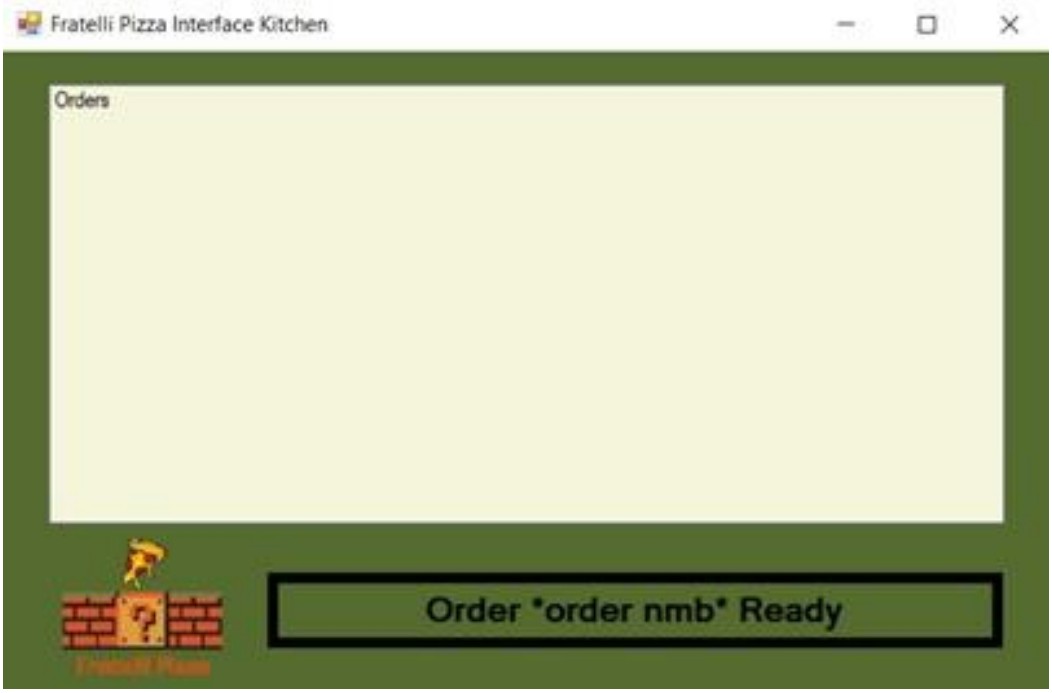
Figure 2. Fratelli Pizza Logo

Mario interface allows him to register pizza orders (one by one) and send the data to Luigi - the chef. In addition, Mario handles drink orders and provides the drinks to customers immediately after paying.

Figure 3. Mario-Cashier GUI

Luigi interface enables him to see ordered pizzas and prepare them accordingly (FIFO principle). Ready made pizzas are sent to the oven and cleared from the list.

Figure 4. Luigi-chef GUI



GUIs were later improved but the main ideas remained from the first sketches.

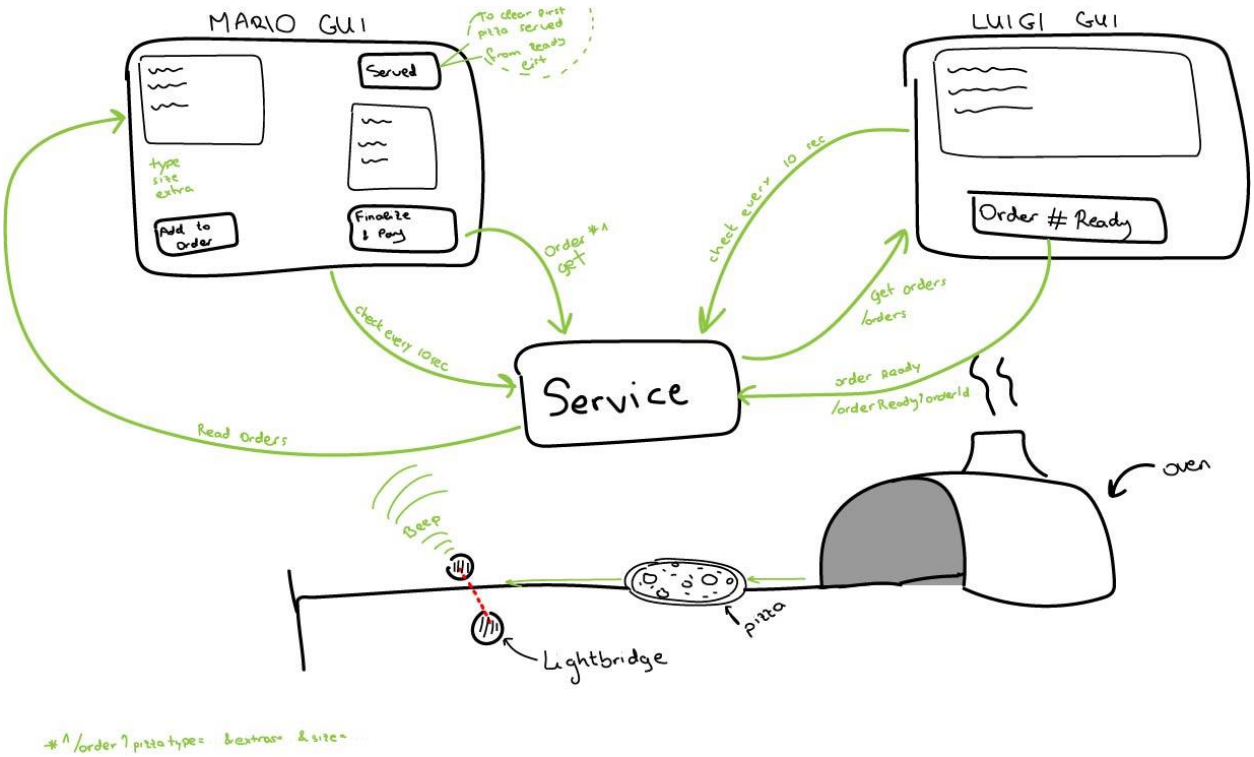
Lightbridge

After pizzas are placed in the oven by Luigi it slowly goes on a conveyor belt until its baked. At the end of the belt there is a light sensor, implemented using Arduino Uno and RichShield board. As the pizza passes through the sensor, blocking the light for a few seconds, the sensor is activated, and the counter takes note of the pizza being ready-baked. This makes a notification in Luigi's app to avoid unnecessary shouting. The ready-baked pizza is then picked up and delivered to the customer based on order number.

Network

In order to enable communication between Mario and Luigi GUIs a python server was made. The server acts as a middleman and stores the data used for a successful communication. Mario sends the order first to the server from which Luigi interface picks it up (i.e. sending get request to the server periodically). Same happens when pizza is placed in the oven, the data goes back to server an is picked up by Mario.

Figure 5.Network drawing



Summary

The group did face some communication and workload distribution challenges, however, in the end the pizza shop was provided with promised ICT solutions. Both employees' work automized and simplified. We have implemented a task redistribution and network communication.

As a team we have learned to express our ideas and opinions better, compromise and split tasks more effectively (based on our skills). In addition, we have shared our skills and knowledge with each other helping us all grow and improve individually too.