Connected balance

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Explanation of the realization

The goal of this project is to realize a connected scale like the one you can see in the fruit and vegetable section of supermarkets. We had as hardware a Raspberry Pi, a classic kitchen scale without power supply, and passive components available (resistors, capacitors, diodes, etc.)

To recover the weight of the item, we made a Wheatstone bridge. We then retrieved the voltage by connecting it to the GPIO of the Raspberry Pi.

On the programming side, once the voltage associated with the weight is recovered, we multiply it with the associated price per kilo, recovered in a csv file. This gives us the price of the item. We then display this information in a table, using the Tkinter graphical interface.

We then studied the possibility of using the same receipt on two different computers, using the mqtt protocol. We succeeded in publishing the data from machine A to the server, and receiving it from the server to machine B, but we did not succeed in doing the reverse path, due to time constraints.

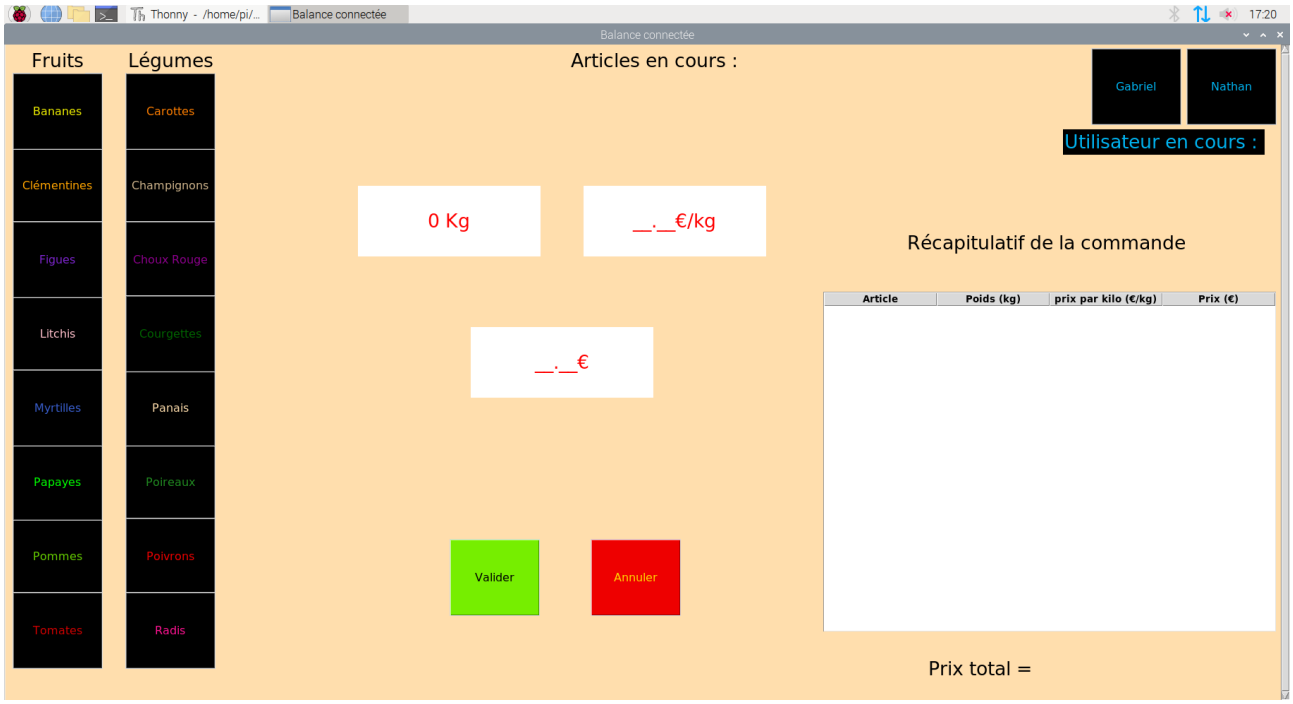

Figure 1: Interface of machine A running on Raspberry Pi

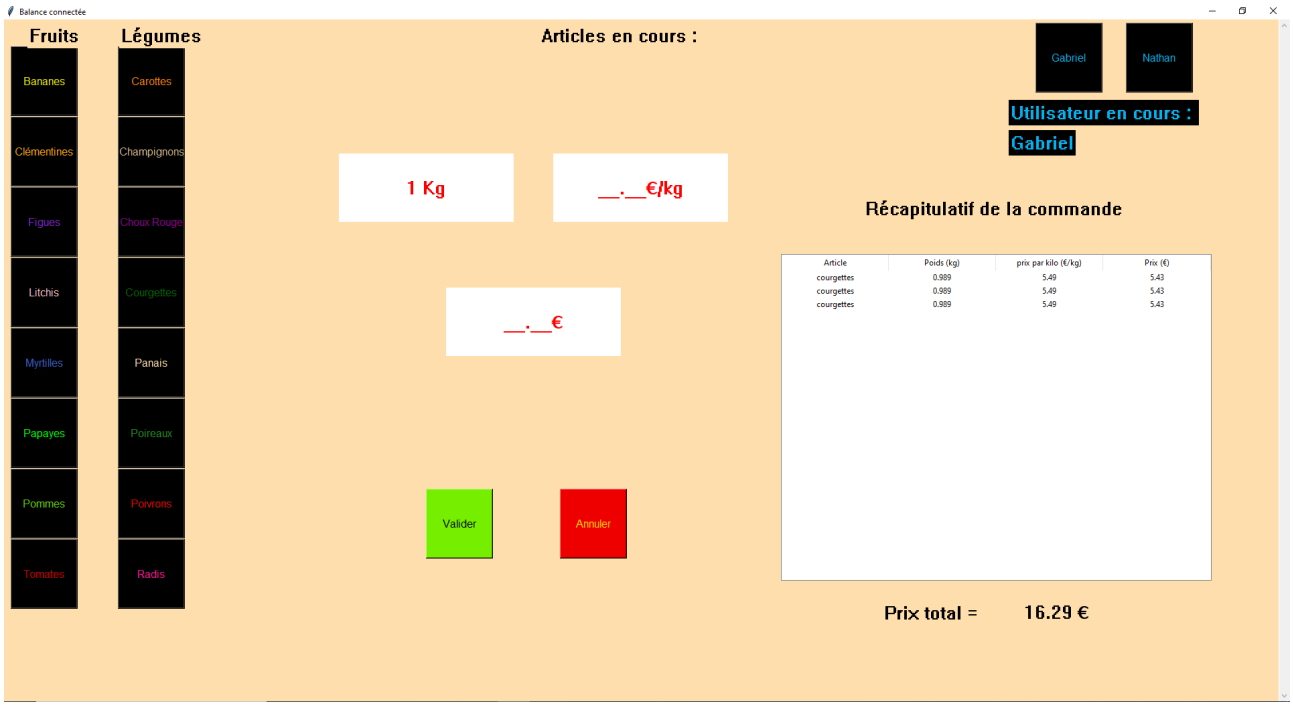

Figure 2: Interface of machine B running on Windows 10