Week 2:

Lee

**Functional requirements:**

Pump:

* Measure volume of fuel taken
* Display volume of fuel taken
* Calculate amount to pay
* Display amount to pay
* Send transaction record to server / Database

Console:

* Get transaction record from server / database
* Lock access to that transaction
* Modify transaction (add other goods, mark as paid / void)
* Print receipt
* Take payment

**Non functional requirements:**

* Send transaction from pump to database in < 5 seconds
* Calculate and display amount to pay at the pump < 1 second
* Measure volume taken +/- 1%
* Send receipt to printer < 2 seconds

**Existing system :**

<http://www.deliveryproducts.com/computer_control_system.html>

This system is commercially available and consists of a single main console which talks to the pumps and other devices such as price sign / reserviors using a variety of different protocols. Different types of field device may require different protocols depending on their manufacturer:



Additional requirements taking into account the above system:

Functional:

* Monitor fuel level in reservoir
* Grant pumps authorisation to pump
* User log in to system
* Change fuel price

Non functional:

* Only allow users to perform tasks within their clearance level.
* Be compatible with a range of pump hardware configurations.

Constraints:

* Communication protocol over the site must be able to transmit over the given distance, ie, between pumps and server. (internal)
* The user interface must be easy to use (Internal)
* The system must have a live connection to the internet for accounting purposes. (External)
* The connection to the internet must be secure. (Internal)
* The log in must be secure. (internal)
* The database for the transactions should be done in SQL
* The database must be on a single server.