The Problem

My client, Geraldine Tan, operates a number of food stalls in school cafeterias in Singapore, and the problem she is having is that the stalls sometimes run out of ingredients in the middle of preparation, since performing a stock-take is often inconvenient and time-consuming. This is because it takes time to check the amount of each ingredient available and place orders if necessary. If the stall is close to running out of an ingredient, the current solution is to initiate a phone-call to the person responsible for re-ordering ingredients. The problem is exacerbated by the fact that many of the ingredients are similar enough to each other that it can be unclear which ingredient is meant, so additional care must be taken for clarification, to ensure that the correct ingredient is ordered. The new system will need to solve both of these problems in order to be successful.

I had a conversation with her on 1 June 2017 in order to discuss the necessary capabilities of the new system, which she said “needs to be fast and easy to use”, among other requirements.

Solution

I have chosen to implement the system in PHP on a web server that connects to a MySQL database, which will store information about the stalls, ingredients and re-order requests. Some pages are used by the admin manager and others are used by the stalls to perform stock-takes.

I have chosen to use PHP with a MySQL database because I have more experience with them than with other server technologies, and the reason why I have chosen to use a web-based solution at all is that the main purpose of the system is to communicate information, and this is what web technologies were designed for. Additionally, both computers and mobile devices have web browsers built in, removing the need to write the two sides of the system using two or more platform-dependent programming languages. Another side effect of doing all of the processing on a server is that all of the code resides on the server, so that any changes made will be instantly applied, allowing for fast maintenance.

Success Criteria

- Person responsible for ordering (“admin manager”) should be able to see all of the requests made by the stalls, on a single screen
    - The admin manager should be able to see whether stalls have started/finished their stock-take, on that same screen
    - The requests should be able to be categorised in the following ways:
        - No categorisation
        - Which stall requested the re-order
        - Which category the ingredient is in
        - Which supplier the ingredient needs to be ordered from
- The system should be secure:
    - It should prevent everyone except the admin manager from viewing the list of requests and editing the list of ingredients/categories/suppliers/stalls.
    - It should only allow the people working in a given stall to place orders for the stall
    - It should authenticate the admin manager with a password
    - The password(s) should be hashed so that a database hack will not reveal them
- The system should only use existing hardware
- Stall managers should be able to make requests for ingredients using their mobile device
- Requesting an ingredient should not take more than 30 seconds
- The system should be intuitive to use for both the admin manager and the staff of the stalls.

- The user interface of the system should not be ugly
- The system should be easily extendable, so that it grows with the company
    - Stalls must be able to be added/edited/removed from the system
    - Admin manager should be able to add/edit/remove ingredients/categories/suppliers
    - Admin manager should be able to add new admin-manager accounts
    - All changes must be validated before being stored in the database