**Fast-food restaurant**

**Problem statement**

The basic problem is that staff wastes their resources on tasks that can be automated. To order food there’s a counter with an employee to take your order and to make the payment. In the rush hour or in the middle of a highway it is already difficult to find enough employees in the kitchen, so one of them shouldn’t waste his time taking orders.

**Important Requirements**

A self-service fast food restaurant will be equipped with a user-friendly touch screen, a credit/debit card reader, and software for completing the process. For this system there will be a system administrator who will have the right to enter the menu with their prices. They can enter anytime in the system by a secured system password to change the menu contents by adding or deleting an item or changing its price.

When the customer enters the restaurant, they will place their order with the help of the touch screen using the intuitive graphical user interface, right from the selection of language till the payment confirmation. They will select from the food options according to their choice and the system will support multiple choices and quantities of the items. It will then display the payment amount once the order has been finalized. There will be the option of paying the bill by cash, debit card or a credit card. The user will slide their card and the system will check for the validity of the card and the payment will be made. A receipt will be printed containing the order number and the order will be sent to the kitchen for processing.

**Functional Requirements**

1. The system must be able to prompt the user for the next step to be performed during the process of using the system.
2. User should be able to order one or more items according to their choice.

* User selects a combo deal (i.e. a combination of main food, drink and side dish).
* User may want to make up his own order by selecting dishes.

1. System should allow users to make special request if they want to.

* User wants to add something extra to his meal (pickles, cheese…etc.)
* User being allergic to special kind of food or have some food intolerances, or following a special diet.

1. User is given the option to either pay for the order or revise the order.
2. System handles the payment for the user-defined order.

* System calculates final bill based on the quantity of the items multiplied by their unit price topped up by the applicable taxes if any, and prompt the user for the mode of payment.
* User should be able to make payment using cash / credit / debit card
* User decides to pay cash and system asks user to enter cash in the slot, system verifies the cash amount and gives refund if any after deducting the amount, the system has a cash return mechanism which gives refund up to 5 LE in coins.
* User decides to pay through credit/debit card and so the system informs user to swipe card through card reader. The system verifies the card through communicating with the central database to verify the authenticity of the credit/debit card and charges the amount of the bill to the card and asks user to sign the bill on the signing pad.

1. The system prints out receipt containing a token number, details of the order, bill and the payment method with a terminal message.
2. System communicates the order to the kitchen through the internal ordering system for processing.
3. A user shall be able to cancel an order through their engaged menu within 5 minutes after ordering.
4. System should notify when an order is done.
5. System should allow Store manager to add/delete/alter system items.

* Store manager wants to put festive offers on some items because of which there is a change in the price of some of the items.
* Store manager notices that some dishes are out of stock. Consequently, he updates the menu so that those items are deleted temporarily from the display presented to the user.

**Nonfunctional Requirements**

1. System supports native language of the country and other commonly spoken languages.

* User is not a native speaker of the common spoken language in the country.
* System caters to English (universally accepted language for communication) and other native languages, which are commonly spoken in the country where the system is operative.

1. Menu choices are presented in form of buttons, which contain text as well as little pictures illustrating the choice for better understanding.
2. The system is resistant to active/rigorous handling as it should be secured to restrict the number of people to enter the system to make changes in the menu and its items.
3. The system must be a graphical user interface for easy use and understanding.
4. The system response time must be less than 10 seconds.
5. The system must refresh every 1 minute for new orders.
6. The server shall can support an arbitrary number of active meals/orders, that is, no meals/orders shall be lost under any circumstances.
7. User should be able to navigate the system without any difficulty.

**System Requirements**

1. Restaurant will be open for 16 hours and will operate in four shifts as Morning (730 AM -1130 AM), Afternoon (1130 AM -330 PM), Evening (330 PM - 730 PM) and Night (730 PM -1130 PM).
2. The system should be able to serve a throughput of 50, 125, 50, 75 customers per hour during these four shifts respectively.
3. Cooks, cleaners and assemblers will be the type of employees working the restaurant.
4. Customer will leave without ordering if he sees 6 or more people in the line waiting to be served thereby causing a loss in revenue.
5. The system must be a graphical user interface for easy use and understanding.
6. The system should be able to take any type of inputs, once the screen is clicked on the respective button.
7. The system should be able to take any amount of order and display it when finished.
8. The system should be able to calculate the bill, displays it, prompt the user for the mode of payment, generate a receipt, and final order for confirmation.
9. The system should be able to pass on the order in the kitchen for processing.
10. The system should be secured to restrict the number of people to enter the system to make changes in the menu and its items.
11. The system should be sturdy for rough usage.
12. The system should be able to communicate to the central database to verify the authenticity of the credit/debit card.
13. The system should allow Store manager to add/delete/alter system items.
14. The system must be able to prompt the user for the next step to be performed during the process of using the system.

**User Requirements**

1. User should be able to navigate the system without any difficulty.
2. System supports native language of the country and other commonly spoken languages.
3. User should be able to place order according to his choices
4. User should be able to make payment using cash/credit/debit card.
5. User should get a receipt and a token number after making the payment.

**System Inputs**

1. Items
2. Prices
3. Orders
4. Credit card numbers
5. Outputs
6. Order details
7. Receipt

**System Outputs**

1. Order Confirmation.
2. Receipt
3. Token number
4. Reports

**Risks**

1. Security of credit card numbers
2. Database failure