Requirement Analysis

Problem Definition:

The manager of a chain of restaurant needs to automate the booking process. To achieve that, it has to automate the orders that are ordered in each table and the amount of ingredients needed for the menu available in stores so that they can be restored when they run out.

Textual Description of the Requirements:

Functional:

- Book a table: Restaurant guests should phone to book a table, and the room head will attend the petition
- Mark tables as occupied, free, reserved, busy, asking, waiting for food, served, waiting for the bill, paying or in preparation.
- Store all transactions: Transactions must be stored in order to be analyzed conveniently, with a view to improving the service of the restaurant chain.
- Notify waiter if client needs something or if food/drink is ready to serve (Quality requirement).
- Take orders and validate if it's feasible to prepare the food.
- Update ingredients database when used.
- Notify that ingredient reserves are below a quantity.
- Print bills.
- Carry out certain statistics.

Quality requirements:

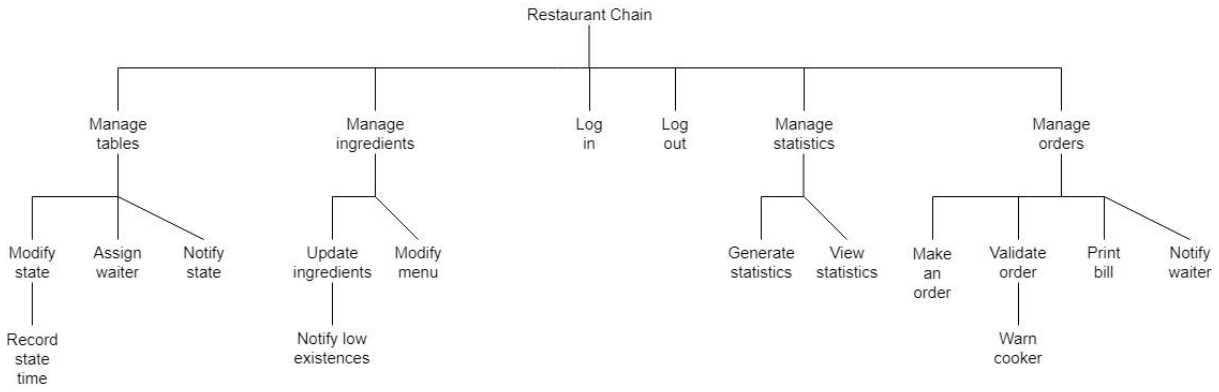
- Availability.
- Robustness.
- Reliability.
- Integrity.
- Portability.
- Reusability.
- Maintainability.
- Testability.
- Efficiency.
- Usability.

Restrictions:

- The database of the system will be executed on a MySQL server.
- The methodology to be followed will be UDP.
- The system will be developed in Java.

Requirements Description

Y/O Graph:



Goal description:

Nº	Section	Content/Explanation
1	Identifier	1
2	Name	Manage tables.
3	Priority	High.
4	Criticality	High.
6	Super-goal	None.
7	Sub-goals	1.1 Modify state. 1.2 Assign waiter. 1.3 Notify state.
8	Description	The room head, after logging in, can modify the state of the tables, assign waiters to them and notify the state of the table if it is required.

Nº	Section	Content/Explanation
1	Identifier	1.1
2	Name	Modify state.
3	Priority	High.
4	Criticality	High.
6	Super-goal	1 Manage tables.
7	Sub-goals	1.1.1 Record state time.
8	Description	The room head can change the state of the tables, having the following states: occupied, free, reserved, busy, asking, waiting for food, served, waiting for the bill, paying and in preparation.

Nº	Section	Content/Explanation
1	Identifier	1.1.1
2	Name	Record state time.
3	Priority	Medium.
4	Criticality	Low.
6	Super-goal	1.1 Modify state.
7	Sub-goals	None.
8	Description	The devices used to manage tables record the time that has passed since the last change of state and if it exceeds a certain lapse it allows to use the notify waiter functionality.

Nº	Section	Content/Explanation
1	Identifier	1.2
2	Name	Assign waiter.
3	Priority	High.
4	Criticality	Medium.
6	Super-goal	1 Manage tables.
7	Sub-goals	None.
8	Description	The room head can assign a waiter to each table assigned to a client.

Nº	Section	Content/Explanation
1	Identifier	1.3
2	Name	Notify state.
3	Priority	Medium.
4	Criticality	Low.
6	Super-goal	1 Manage tables.
7	Sub-goals	None.
8	Description	The room head can notify any other user about the state of a certain table in case nobody is managing an order.

Nº	Section	Content/Explanation
1	Identifier	2
2	Name	Manage ingredients.
3	Priority	Medium.
4	Criticality	High.
6	Super-goal	None.
7	Sub-goals	2.1 Update ingredients. 2.2 Modify menu.
8	Description	The room head can modify the menu and ingredients while the database automatically updates itself whenever a new order is made.

Nº	Section	Content/Explanation
1	Identifier	2.1
2	Name	Update ingredients.
3	Priority	Medium.
4	Criticality	Medium.
6	Super-goal	2 Manage ingredients.
7	Sub-goals	2.1.1 Notify low existences.
8	Description	The database automatically changes the existences of products based on the orders to prepare.

Nº	Section	Content/Explanation
1	Identifier	2.1.1
2	Name	Notify low existences.
3	Priority	Medium.
4	Criticality	High.
6	Super-goal	2.1 Update ingredients.
7	Sub-goals	None.
8	Description	When the amount of products is below an established quantity, the device warns the room head about the product low existences.

Nº	Section	Content/Explanation
1	Identifier	3
2	Name	Log in.
3	Priority	Low.
4	Criticality	High.
6	Super-goal	None.
7	Sub-goals	None.
8	Description	Every user can login and use the required functions, depending on the type of user, by means of an ID and a password.

Nº	Section	Content/Explanation
1	Identifier	4
2	Name	Log out.
3	Priority	Low.
4	Criticality	Medium.
6	Super-goal	None.
7	Sub-goals	None.
8	Description	Al users can close their session.

Nº	Section	Content/Explanation
1	Identifier	5
2	Name	Manage statistics.
3	Priority	Low.
4	Criticality	Medium.
6	Super-goal	None.
7	Sub-goals	5.1 Generate statistics. 5.2 View statistics.
8	Description	The device can carry out some statistic for the room head to see how the restaurant works.

Nº	Section	Content/Explanation
1	Identifier	5.1
2	Name	Generate statistics.
3	Priority	Low.
4	Criticality	Low.
6	Super-goal	5 Manage statistics.
7	Sub-goals	None.
8	Description	The device can carry out several statistics, including the average time to take command, the average meal preparation time, the average note delivery time and the average preparation time so that the table is free.

Nº	Section	Content/Explanation
1	Identifier	5.2
2	Name	View statistics.
3	Priority	Low.
4	Criticality	Low.
6	Super-goal	5 Manage statistics
7	Sub-goals	None.
8	Description	The room head can display the statistics generated by the device.

Nº	Section	Content/Explanation
1	Identifier	6
2	Name	Manage orders.
3	Priority	High.
4	Criticality	High.
6	Super-goal	None.
7	Sub-goals	6.1 Make an order. 6.2 Validate order. 6.3 Print bill. 6.4 Notify waiter.
8	Description	The users identified as waiters can make orders, validate orders and print the bills, while the users logged as cookers can notify the waiters.

Nº	Section	Content/Explanation
1	Identifier	6.1
2	Name	Make an order.
3	Priority	High.
4	Criticality	High.
6	Super-goal	6 Manage orders.
7	Sub-goals	None.
8	Description	The waiter can select the products ordered in the device, so that the workers in the kitchen can start making the dishes.

Nº	Section	Content/Explanation
1	Identifier	6.2
2	Name	Validate order.
3	Priority	High.
4	Criticality	Medium.
6	Super-goal	6 Manage orders.
7	Sub-goals	6.2.1 Warn cooker.
8	Description	The waiter can validate an order when the products are confirmed to have enough existences to prepare the order.

Nº	Section	Content/Explanation
1	Identifier	6.2.1
2	Name	Warn cooker.
3	Priority	Medium.
4	Criticality	Low.
6	Super-goal	6.2 Validate order.
7	Sub-goals	None.
8	Description	When an order is validated, the system automatically warns the cooker related with that section of the menu.

Nº	Section	Content/Explanation
1	Identifier	6.3
2	Name	Print bill.
3	Priority	Medium.
4	Criticality	Medium.
6	Super-goal	6 Manage orders.
7	Sub-goals	None.
8	Description	When the state of a table is waiting for the bill, the device gives the waiters the option to print the bill.

Nº	Section	Content/Explanation
1	Identifier	6.4
2	Name	Notify waiter.
3	Priority	Medium.
4	Criticality	Low.
6	Super-goal	6 Manage orders.
7	Sub-goals	None.
8	Description	When the cookers have a dish ready, they can use their device to warn the assigned waiter about the food being finished.