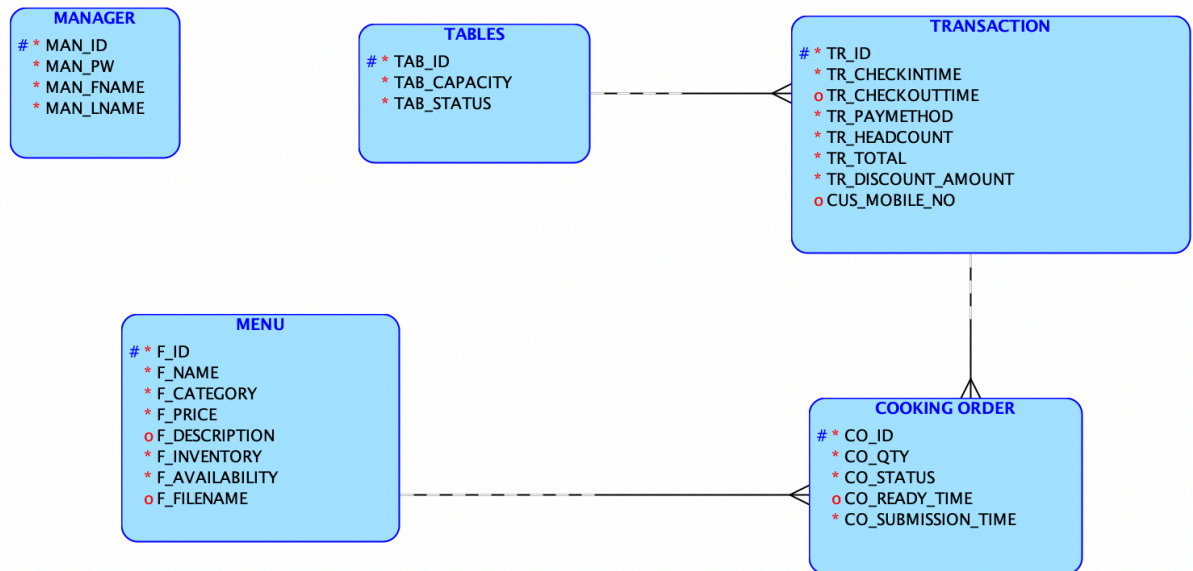


Project Report

1. Introduction to the Project

This report outlines the development of a dine-in ordering system for DB Café. Our team was responsible for designing and implementing a system that improves the food ordering process and integrates essential restaurant operations. The system comprises a cashier terminal, a tablet, and a kitchen touchscreen computer. The report will detail the requirements, functionalities, and proposed design of the system, including optional features considered during development.

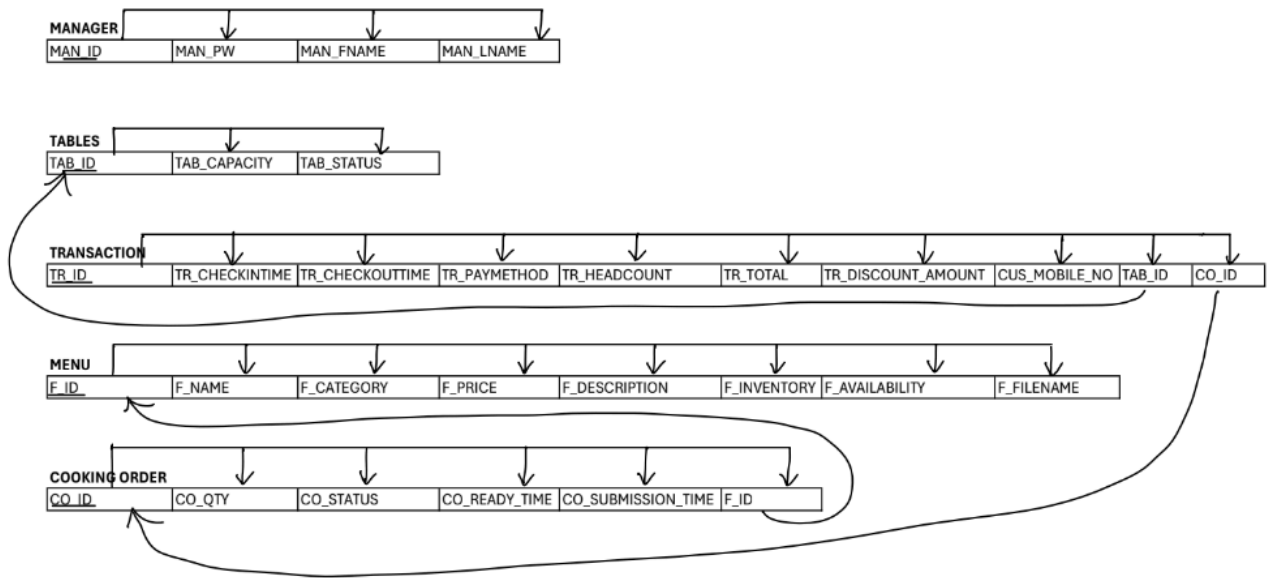
2. Conceptual Data Model



Model Explanations

Managers will log in to their accounts to initiate a transaction and handle the tablet to customers. Each table the manager assigns can make one to many transactions, while each transaction can involve one to many cooking orders. Each item on the food menu can be involved in one to many cooking orders.

3. Logical Data Model



4. Data Dictionary

MENU

P/F	Attribute Name	Data Type	Data Format	Field Size	Description	Example
P	F_ID	String	/	10	Food item's ID	1210
	F_NAME	String	/	20	Food item's name	Avocado toast
	F_CATEGORY	String	/	20	Category of the food item	Dessert
	F_PRICE	Number	/	6	Food item's price	35
	F_DESCRIPTION	String	/	100	Description of the food item	Sourdough bread with avocado spread
	F_INVENTORY	Number	/	3	Amount of food item the restaurant has	40
	F_AVAILABILITY	String	/	12	Whether a food item is	Available

	TY				available or not	
	F_FILENAME	String	/	30	Filename to store the food item	png

MANAGER

P/F	Attribute Name	Data Type	Data Format	Field Size	Description	Example
P	MAN_ID	String	/	8	Manager ID	12345
	MAN_PW	String	/	20	Manager Password	apple
	MAN_FNAME	String	/	20	Manager's first name	Samuel
	MAN_LNAME	String	/	20	Manager's last name	Lai

TABLES

P/F	Attribute Name	Data Type	Data Format	Field Size	Description	Example
P	TAB_ID	String	/	2	Table ID	1
	TAB_CAPACITY	String	/	2	Table Seat Capacity	4
	TAB_STATUS	String	/	20	Table Availability Status	Available

TRANSACTION

P/F	Attribute Name	Data Type	Data Format	Field Size	Description	Example
P	TR_ID	String	/	8	Transaction ID	81458837
	TR_CHECKIN TIME	Datetime	DD-MMM-YY HH24:MM:SS	18	Transaction Check-in time	05-APR-24 14:22:19
	TR_CHECKOUT TIME	Datetime	DD-MMM-YY	18	Transaction Check-out time	05-APR-24 14:22:37

			HH24:MM:SS			
	TR_PAYMETHOD	String	/	20	Transaction payment method	Credit Card
	TR_HEADCOUNT	Number	/	1	Transaction headcount	3
	TR_TOTAL	Number	/	10,2	Transaction total payment amount	97.49
	TR_DISCOUNT_AMOUNT	Number	/	9,3	Transaction discount amount	3.015
	CUS_MOBILE_NO	String	/	20	Customer mobile phone number	23112231
F	TABLE_TAB_ID	Number	/	2	Transaction table number	2

COOKING_ORDER

P/F	Attribute Name	Data Type	Data Format	Field Size	Description	Example
P	CO_ID	String	/	10	Cooking Order ID	8145833837
	CO_QTY	Number	/	2	Cooking Order Quantity	3
	CO_STATUS	String	/	20	Cooking Order Status	Submitted
	CO_READY_TIME	Datetime	DD-MMM-YY HH24:MM:SS	18	Cooking Order Ready Time	05-APR-24 14:22:37
	CO_SUBMISSION_TIME	Datetime	DD-MMM-YY HH24:MM	18	Cooking Order Submission Time	05-APR-24 14:22:19

			:SS			
F	TRANSACTION_ TR_ID	String	/	8	Transaction ID	81458837
F	MENU_F_ID	String	/	10	Food item's ID	1210

5. Functional Requirements (1 page)

Customer (On the tablet)

c1. Allow customer to view the menu by category

- Customers can choose the category of food they want to view from the drop down list
- Items in the chosen category will be displayed, showing the name, description, price and sales
- Customers can choose the quantity if they decide to order that food item

c2. Allow customer to view top 5 popular items

- The top 5 items' information will be displayed, including name, description, price and sale
- Customers can choose the quantity if they decide to order that food item

c3. Allow customer to send food orders

- The chosen food items will appear in 'order cart', customers can click 'send order' after deciding what dishes to order
- Customers can click 'Remove item' before sending out the order if they no longer want that food item

c4. Allow customer to view the existing food order

- Customer can view existing food order in 'Order History'

Chef (On the touchscreen computer)

ch1. allow chef to view cooking orders that need to be prepared

- 'Orders Dashboard' gives an overview of each table's order no., transaction no., table no., no. of person and submission time
- 'Submitted orders', 'Orders Being Cooked' and 'Cancelled Orders' shows the order's submission time, transaction ID, cooking order ID, table No., headcount, food Item, quantity and order status.
- 'Completed Orders' shows the order's submission time, time completed, transaction ID, cooking order ID, table No, headcount, food item, quantity and order status

ch2. allow chef to update the status upon preparation

- Chef can accept the status, then change it to 'serve' after cooking the food
- If the chef cancels the order there's a message box to tell the staff

Manager (On the cashier terminal)

m1. Allow the manager to manage food/drink items

- 'Main Menu' allows managers to choose a function among retrieve, insert, update, and delete
- 'Retrieve items' allows manager to enter Food ID and retrieve information such as name, category, etc.
- 'Insert items' allows managers to input details of a new food item
- 'Update items' allows managers to change existing information of the food item after retrieving it using the Food ID
- 'Delete items' allows managers to remove a food item record from the database
- 'Message box' is used to notify users when their desired action has been executed or if an error is prompted

m2. Allow manager to manage manager accounts

- 'Manage Manager Accounts' allows managers to choose a function among retrieve, insert, update, and delete
- 'Retrieve Accounts' allows managers to enter Manager ID and retrieve information such as password, first name, and last name.
- 'Insert Accounts' allows managers to input details of a new manager account
- 'Update Accounts' allows managers to change existing information of the manager accounts after retrieving it using the Manager ID
- 'Delete Accounts' allows managers to remove a manager account record from the database
- 'Message box' is used to notify users when their desired action has been executed or if an error is prompted

m3. Allow manager to manage the status of all tables in the restaurant

- 'Main Menu' displays all the table information and allows manager to choose a function to update the table status
- 'Update status' menu allows managers to enter table ID to retrieve data, and change table status

m4. Allow manager to handle payments for a transaction

- 'Transaction Menu' allows manager to settle the bill or go back to the main menu
- 'Bill' allows manager to choose a table for checkout

m5. Allow manager to display 'Manager Dashboard'

- 'Dashboard' allows manager to choose the type of report he wants to view
- r1: Average revenue per head and table shows the amount earned on a day
- r2: Revenue per hour in the last 7 days shows the amount earned in each hour for the previous 7 days
- r3: Top 5 popular items displays the food items that have been ordered the most with the quantity sold for each item
- r4: Average duration for each transaction report shows the duration of each transaction in minutes
- r5: Total daily and monthly revenue report shows total revenue on a particular date/month, and breakdown by food category and payment method, and the percentage of share of each breakdown category

- r6: Sales of dishes in a given period show the total sales and sales breakdown by dishes during a chosen period by the manager, the manager can choose the date using a date picker
- r8: Sales of a particular food item shows the food item information, quantity sold, total sales, share of total revenue
- **Additional feature: discount report shows the returning customers' no. of visit, the discount percentage and entitled discount in dollar amount**

Manager (On the tablet)

m6. Allow manager to initialize the tablet for orders

- 'Function Selection' page allows managers to choose which function to perform, to assign table or reset tablet
- 'Assign Table' page allows managers to assign table to a customer via the tablet, automatically changing the table status to unavailable, and generates the transaction
- 'Manager Login' allows manager to login, it is a safety protocol to prevent users from the administrative work of the restaurant
- 'Customer Login' allows customers to input their phone numbers, or skip and login as guest

m7. Allow manager to reset the tablet

- 'Manager Login' allows manager to login, it is a safety protocol to prevent users from the administrative work of the restaurant
- 'Reset Tablet' allows managers to close the transaction, the system will automatically add a transaction check-out time and change the table status back to available.

6. Conclusion

The team has developed a dine-in ordering system for DB Café, including functionalities for managing food/drink items, manager accounts, table statuses, payments, etc. An additional function for generating a discount report (Set B) is also completed. The system offers improved efficiency and customer satisfaction. We suggest incorporating customer feedback and expanding the system to include online reservations and takeaway orders. Overall, the system has the potential to greatly benefit DB Café and serve as a valuable tool for restaurant management.

7. Assumptions

- The restaurant operates from 9 am-10 pm every day