Assessment Front Sheet

Assessment Title	Assessment 02: HP2J48	
Qualification	Module Code and title	
Advanced Diploma in Computer Science	HP2J 48: Relational Database Management Systems	
Student ID	Assessor's Name	
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Cohort	Date Issued	Submission Deadline
		23 April 2022

No.	Learning Outcomes	Task no
L02	Design an RDBMS from a given scenario.	1
L03	Map the design model to the physical model	1
L04	Create and run SQL statements/queries on a RDBMS.	1

Learner Declaration
I certify that the work submitted for this Assessment is my own and research sources are fully acknowledge. Student Signature:  Date: 15/06/2022

Assessment task 2

Assessment task instructions

Scenario

You have been asked to design and interrogate a RDBMS for a fast food franchise **FastBurgers** with over 100 outlets in the UK. The database is a prototype to cover a specific part of their ordering system. The owner of the franchise wants to see which member of staff takes the most orders and what are the most popular orders taken. The owner wants to track if the customer pays by cash or card. The owner can then collate this information for all the outlets. There are two menus that the customer can chose from — the regular menu and the savers menu. All of the products sold should either be on the regular menu or on the savers menu. The regular menu has a breakfast section that finishes at 11am each day. The savers menu has a start and end date and is changed monthly. For example, in December they will have a festive savers menu.

The order system should track:

- Which customer places which order.
- All items on that order.
- Customer paid by card or cash.
- Which member of staff took that order.
- Shifts for both managers and sales staff.

Other important information to note:

- The two managers of each outlet also take orders.
- The cooks do not take orders directly from customers.
- Each item should relate to a food/drink product.
- Stock should also be tracked with automatic request to restock if burgers go down to 500. Chips (1 kilo bags) less than 200, etc.
- The manager is responsible for keeping the stock up to date.

Meeting

Once you have read over the scenario a meeting should be arranged with the client. Before the meeting questions should be drawn up to ask the client. After the meeting, using the answers from the client and the scenario, identify all the entities, relationships and possible attributes.

Deliverables

You are expected to provide a report consisting of minimally (but not limited to) the following.

- The list of entities
- The ER Diagram (First Level), with relationships between entities identified.
- An ER diagram (or diagrams) with attributes added.
- The list of business rules (both structural and functional) and assumptions that were used in the design.
- The logical design (Data dictionary) of the database

In addition, all the script files used in order to create tables, populate them with data and interrogate the tables must also be provided as evidence.

You will be adjudged on each outcome based on the following criteria for each of the learning outcomes.

Outcome 2

- Use normalization techniques to remove redundant data and create new tables.
- ERD design using appropriate design rules. Operational and functional business rules.
- Specific assumptions needed to complete the design.

Outcome 3

- Create physical tables corresponding to a set design.
- Map design attributes to the physical model.
- Populate the tables with test data.

Outcome 4

- Create basic select queries. Select*
- Use expressions within the select clause.WHERE
- Group data records. Group by
- Sort data records. ORDER BY
- Create joins. Joins

Meeting

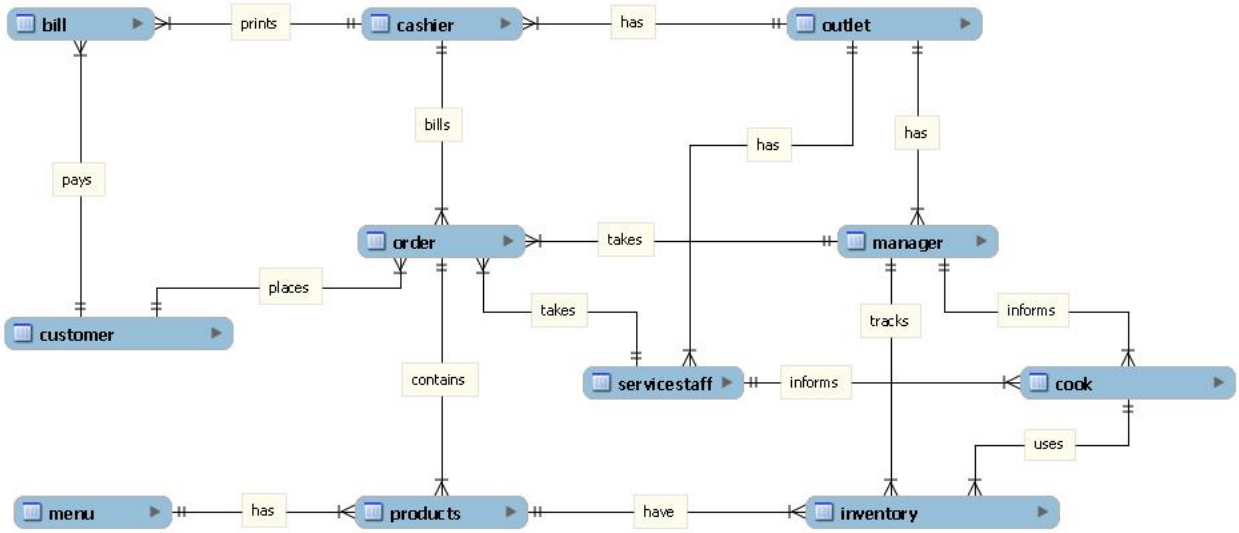
Q : Having gone through the scenario, the term “sales staff” has been mentioned and I would like to clarify which members of staff fall under the aforementioned category?

A : So basically our seemingly quite large workforce when broken down into different types of staff and their roles amount to only a few, namely; managers, waiters and servers who take orders and cooks who prepare them, not to mention, the cashiers who bill our customers with their order totals respectively. As for those that fall under the category of sales staff, as in the technicality of the term where they are personally held responsible for pushing sales, it would be mainly the cashiers and service staff (waiters and servers) who directly interact with our customers and whose every interaction is critical in that it directly has the ability to affects the business image and sales revenue.

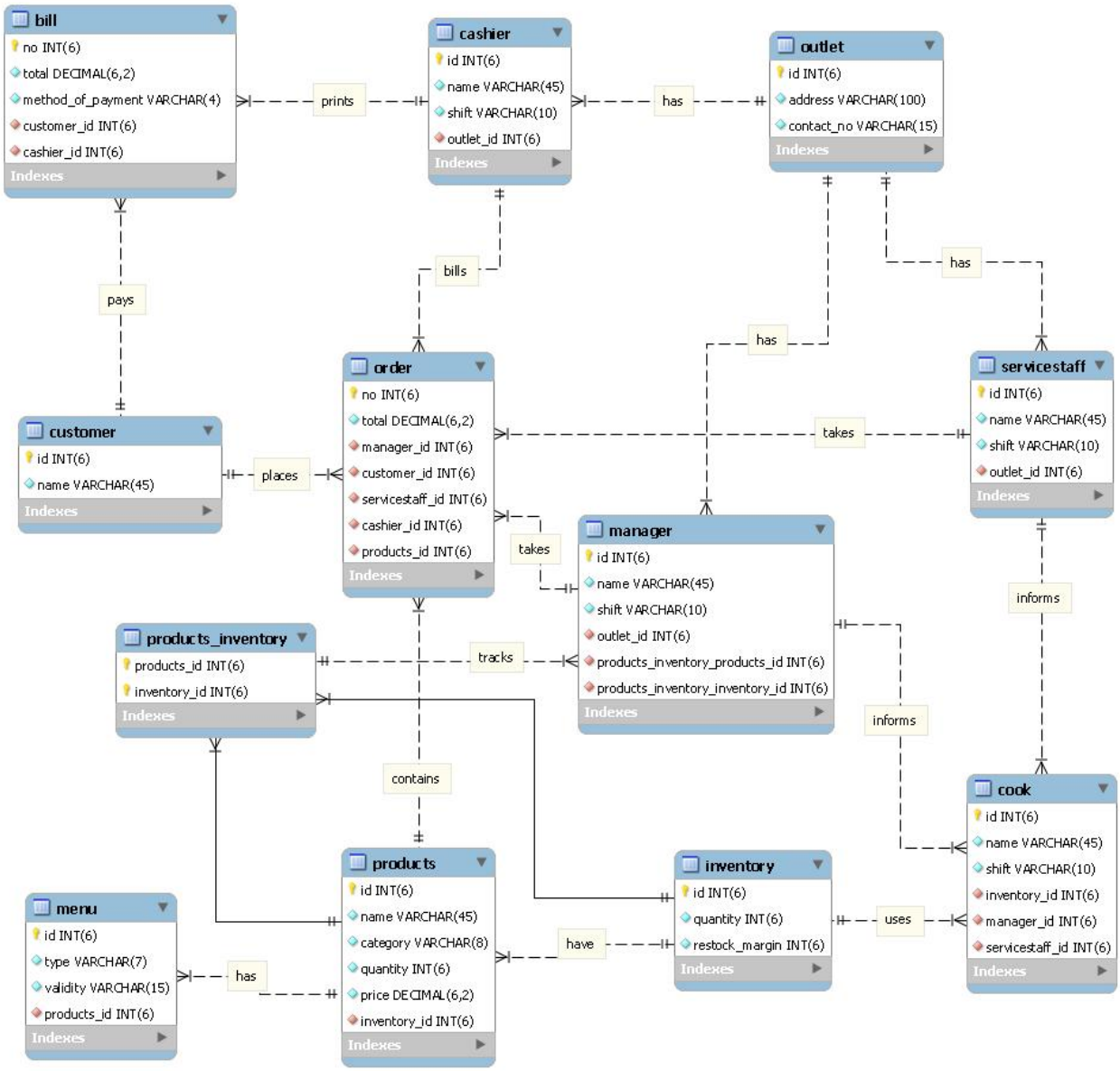
List of Entities

- Outlet
- Manager
- Menu
- ServiceStaff
- Cashier
- Customer
- Order
- Products
- Cook
- Inventory
- Bill

ER Diagram (First Level)



ER Diagram with Attributes



Data Dictionary

Table	Field	Constraints	Data Type	Size
Outlet	id	Primary Key Not Null	Integer	6
	address	Not Null	Variable Character	100
	contact_no	Not Null	Variable Character	15
Manager	id	Primary Key Not Null	Integer	6
	name	Not Null	Variable Character	45
	shift	Not Null	Variable Character	10
	outlet_id	Foreign Key Not Null	Integer	6
	products_inventory_products_id	Foreign Key Not Null	Integer	6
	products_inventory_inventory_id	Foreign Key Not Null	Integer	6
Menu	id	Primary Key Not Null	Integer	6
	type	Not Null	Variable Character	7
	validity	Not Null	Variable Character	15
	products_id	Foreign Key Not Null	Integer	6
ServiceStaff	id	Primary Key Not Null	Integer	6
	name	Not Null	Variable Character	45
	shift	Not Null	Variable Character	10
	outlet_id	Foreign Key Not Null	Integer	6
Cashier	id	Primary Key Not Null	Integer	6
	name	Not Null	Variable Character	45
	shift	Not Null	Variable Character	10
	outlet_id	Foreign Key Not Null	Integer	6

Customer	id	Primary Key Not Null	Integer	6
	name	Not Null	Variable Character	45
Order	no	Primary Key Not Null	Integer	6
	total	Not Null	Decimal	6,2
	manager_id	Foreign Key Not Null	Integer	6
	customer_id	Foreign Key Not Null	Integer	6
	servicestaff_id	Foreign Key Not Null	Integer	6
	cashier_id	Foreign Key Not Null	Integer	6
	products_id	Foreign Key Not Null	Integer	6
Products	id	Primary Key Not Null	Integer	6
	name	Not Null	Variable Character	45
	category	Not Null	Variable Character	8
	quantity	Not Null	Integer	6
	price	Not Null	Decimal	6,2
	inventory_id	Foreign Key Not Null	Integer	6
Cook	id	Primary Key Not Null	Integer	6
	name	Not Null	Variable Character	45
	shift	Not Null	Variable Character	10
	inventory_id	Foreign Key Not Null	Integer	6
	manager_id	Foreign Key Not Null	Integer	6
	servicestaff_id	Foreign Key Not Null	Integer	6
Inventory	id	Primary Key Not Null	Integer	6
	quantity	Not Null	Integer	6

	restock_margin	Not Null	Integer	6
Bill	no	Primary Key Not Null	Integer	6
	total	Not Null	Decimal	6,2
	method_of_payment	Not Null	Variable Character	4
	customer_id	Foreign Key Not Null	Integer	6
	cashier_id	Foreign Key Not Null	Integer	6
Menu	id	Primary Key Not Null	Integer	6
	type	Not Null	Variable Character	7
	validity	Not Null	Variable Character	15
	products_id	Foreign Key Not Null	Integer	6

Business Rules and Assumptions used in the Design

- Manager is supposed to keep track of Inventory at all times and it is their sole responsibility

- Products are categorized into either Food or Beverage

- Chefs have no direct contact with customers and are passed on orders from staff