**ASSIGNMENT/ASSESSMENT ITEM COVER SHEET**

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**Student Name:**

**FIRST NAME Family / last NAME**

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**Student Number:**  Email: c3340471@uon.edu.au

**Course Code** **Course Title**

Database Management 2

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Intro to University

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Campus of Study: (eg Callaghan, Ourimbah, Port Macquarie)

Callaghan

Assignment 2: Database Design & Implementation

4 June 2021

Assessment Item Title: Due Date/Time:

Tutorial Group (If applicable): Word Count (If applicable):

Lecturer/Tutor Name:

Kellie Bohlsen

**x**

Extension Granted: Yes No Granted Until:

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02.07.21

Sayeed Bin Hossain

Sayeed Bin Hossain

C3340471

Assessment Item 1

Database Design & Implementation

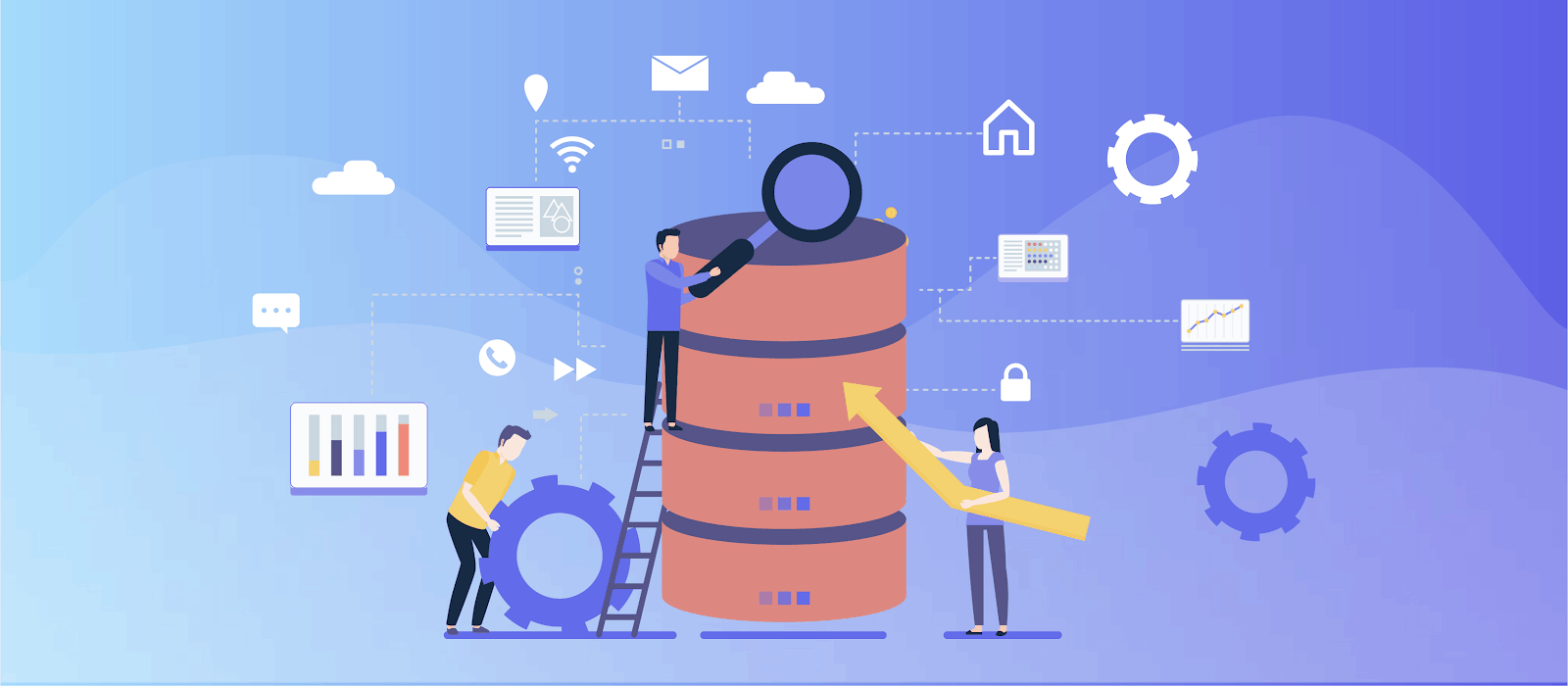


Table of Contents

[Part 1: Requirements Document 2](#_Toc73711921)

[1.1 Data Requirements 3](#_Toc73711922)

[1.2 Transaction Requirements 5](#_Toc73711923)

[1.3 Business Rule 7](#_Toc73711924)

[Part 2A 8](#_Toc73711925)

**Part 1A – Revised**

**1.1 Data Requirements**

1. **Order –** Tasty’n’Yummy Pizzas takes order via phone, online as well as through walk-in customers. The orders are either delivery or picked up. Store also takes preorder. The data describing the order includes orderNo, OrderDate&Time, subtotal, discountAmount, discountCode, tax, TotalAmountDue, PaymentMethod (cash or card), OrderStatus (ready-to-pickup, processing, delivered, etc), TypeOfOrder (phone/walk-in/online), Description (pick-up or delivery), OrderApprovalNumber (if paid via card), preorderDate&Time (when the orders will be picked or delivered), deliveryMethod (pickup/delivery)
2. **Phone Order –** Subclass of order. Order can be of three types: Phone order, Walk-in order or online order. If the order is made through phone, then data is recorded as phone order. Stuff ID is entered for each phone order.
3. **Walk-in Order –** Another subclass of order. When a customer walks into the store physically and places the order, the data is recorded as the walk-in order. Unique data that needs to be stored is the customer’s name. Walk-in orders cannot be delivered.
4. **Online Order –** Another subclass of order. Order can also be placed using app or website. Either members or guests can place online order. Like all other orders, they can be either picked up or delivered.
5. **Customer –** The customers initiate the ordering process. They can either order via phone, online or walk-in to the stores. And the order can either be picked up or delivered. The data stored for each customer includes phone number, name and address. Walk-customers requires only name. If the details of the customer are already there, that means the customer has previously ordered. Otherwise, new record is created, and customer’s details are recorded. Status of the customer is also recorded which represents whether the customer has confirmed their order or not.

The data stored regarding each customer includes CustomerID, FName, LName, Address, Phone, and Status.

1. **Member–** Subclass of Customer. Order can also be placed using app or website. Members are customers who signed up through app or website.

Data required for online order are – username, email.

1. **Guest –** Another subclass of Customer. Order can also be placed using app or website. Guests do not require to sign up or login to place order, but they need to provide all other necessary information as the other customers every time they places an order.
2. **Phone Customer** – Another subclass of Customer. Customers who places order via phone falls under this category.
3. **Discount –** Tasty’n’Yummy Pizzas offer different types of discount programs. They are needed to be stored in the database.

Data includes DiscountCode, description, startDate, endDate, requiremnts, discountPercentage, menuItemCategory

1. **Promotion –** A promotion is when a number of menu items categories are grouped together at a fixed price.

Data stored are promotionCode, description, startDate, endDate, price, itemQuantity, itemCategory, deliveryMethod (store-pickup or delivery)

1. **Employee –** There are two main types of employees: In-store employees and delivery driver.

The data stored regarding each employee include employee number, firstname, lastname, postal address, contact number, tax file number, bank details (bank code, bank name, account number), payment rate, status, and a description. Employee number is the unique attribute.

1. **Instore –** Subclass of Employee which differentiates the functionality of different employees working at the pizza shop. Instore workers work within the shop. Manager is included in this category.
2. **Driver –** Subclass of Employee which differentiates the functionality of different employees working at the pizza shop. Drivers work for the shop to deliver products to the customer. The unique attributes that defines the delivery employees (Driver) is LicenseNumber.
3. **Employee payment –** Employees are paid an hourly rate. Payments are made to the employees bi-weekly for all the shifts for the 2-week period. The data required for the employee payment process includes payment record ID, gross payment, tax withheld, total amount paid, payment date, payment period start date, payment period end date, and bank details of the employee.
4. **Shift –** Shift is basically the period which the employees are working. The data includes start date, start time, end date, end time, shift type, the orders a driver delivers during a shirt including delivery address & time for each delivery. It is important to keep track of this record to make payments to the employees.
5. **Driver Shift –** Sublcass of Shift which differentiates the shift of the driver from other employees. It is required to keep records of the shift details of the drivers.

The data required for driver shift are ShiftID, NumberOfDelivery, and DriverPaymentRate

1. **Instore Shift –** Sublcass of Shift which differentiates the shift of the driver from other employees. It is required to keep records of the shift details of the drivers.

The data required for driver shift are ShiftID, and InstorePaymentRate.

1. **Menu Item –** MenuItems is the menu of available pizza offered by the Tasty’n’Yummy Pizzas. This includes ItemNo, Name, Size, CurrentSellingPrice, category (traditional pizzas, value pizzas, etc) and IngredientNo of all ingredients, and description.
2. **Ingredient –** This defines the ingredients used in each pizza. The data requirements include code, name, type, description, StockLeveltAtCurrentPeriod, SuggestedStockLevel, ReOrderLevel, and LastStockTake
3. **Supplier –** Suppliers supply the ingredients. One supplier can supply many different ingredients. Suppliers’ data contains the details of each suppliers which includes SupplierNo, Name, Address, Phone, email, and ContactPerson.
4. **Ingredients Order –** When Tasty’n’Yummy Pizzas orders ingredients from the suppliers, the data needs to be stored. This record holds the information about the ingredients that are ordered, and all other information related to the ordering process. So, the data requirements include OrderNo, TotalAmount, Status, Description.

**1.2 Transaction Requirements**

**Data entry –**

* Enter the details of a new order (such as a new customer comes in and order pizzas)
* Enter the details of a new customer (such as when a customer calls and order pizzas and there are no past records)
* Enter the new payment approval number if the customer pays through credit/debit card (Such as a customer paying through card after placing the order)
* Enter the details of a new delivery order (such as if a customer places as order that they want delivery at a certain address. Then the delivery time, address and the driver who delivered the order are recorded.
* Enter the details of a new Menu Item (such as Tasty’n’Yummy Pizzas decided to add a new item to their menu)
* Enter the details of new ingredients (such as ingredients have been used to make pizzas)
* Enter the details of the new employees (such as new employees have been hired by Tasty’n’Yummy Pizzas)
* Enter the details of the payment rates of the new employees (such as Tasty’n’Yummy Pizzas hired new delivery driver who are paid by the number of deliveries they make)
* Enter the details of the new suppliers (such as if Tasty’n’Yummy Pizzas get supplies from a new supplier)
* Enter the details of the ingredients order (such as if Tasty’n’Yummy Pizzas orders new ingredients or reorder stock)

**Data update/deletion –**

* Update/delete the details of the orders.
* Update/delete the details of the customers of Tasty’n’Yummy Pizzas.
* Update/delete the details of the Menu Items.
* Update/delete the details of the ingredients.
* Update/delete the details of the ingredients ordered. Update/delete the details of the Suppliers.
* Update/delete the details of the Employees.
* Update/delete the details of the payment rates of the employees. Update/delete the details of the shifts.

**Data queries –**

* List the details of the orders.
* List the details of the customers.
* List the details of the customer payment.
* List the details of the Menu Items.
* List the details of the ingredients.
* Identify the total number of different ingredients in the stock.
* Identify which ingredients to restock.
* List the details of the ingredients ordered.
* Identify the total number of different ingredients ordered.
* List the details of the employees.
* Identify the total number of employees working.
* Identify the total salary that is paid to the employees in last 2 months.
* Identify the total number of pizzas delivered.
* Identify the total number of hours worked by the employees.

**1.3 Business Rule**

1. Walk-in customers does not need to provide any details except for the name.
2. For any phone orders, staff who is taking the order need to enter their ID with the order.
3. For phone orders, the orders must be verified and confirmed before it goes through.
4. Stocktake must be done each week to check the actual levels of ingredients in store and must be inputted into the database.
5. The amount of each ingredients remaining must be updated every time some is used.
6. When an ingredients stock level decreases below its reorder level an order for the ingredient must be places.
7. A new customer must be marked as un-verified until the verification process is successfully completed.
8. Record of each shift that the employees worked must be recorded in the database and no employee can alter the information.
9. An employee can only be either an in-store worker or a delivery driver.
10. Employees cannot delete data from the database.
11. An employees’ status can only be either full time or part time.
12. If a customer pays through card, the approval number must be recorded.
13. Payments can only be added by accounting staff.
14. Order’s payment method can only be made through Credit/Debit card or cash.
15. Delivery method is only pickup or delivery.
16. Order must have at least 1 item in it.
17. Drivers must have valid driver’s license.
18. Drivers cannot use international license.
19. Member authentication for online order is done separately by third party authenticator services so login information is not stored in the database.
20. Walk-in orders cannot be delivered.
21. Pre-orders can be only taken for 7 days’ time period.
22. Members cannot edit orders after the order is confirmed.