Project Report
on

FIT FREAK
DBMS

NORTHERN ILLINOIS UNIVERSITY

DEPARTMENT: Operations and Management System

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Project Report by: GROUP C

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PROJECT DESCRIPTION

Fit Freak is a fitness company founded in 2023. It's owned by four young entrepreneurs who have envisioned an atmosphere that encourages people to enjoy rewarding, healthy lifestyles. Fit Freak offers multiple services for our gym customers. Some of the services include, but are not limited to: Classes, State of the Art Gym Equipment, Gym Products that are available for purchase, etc. Our company has gym facilities located in many cities.

As a gym, we deeply believe in helping our customers get access to different means of a healthy lifestyle. Due to which, Fit Freak provides many Classes such as Zumba, yoga, dance aerobics, and swimming, to name a few. A customer can either register for gym membership or enroll in one or many classes offered at gym location. Additionally, a customer may choose to buy a product provided by our gym facilities. When enrolling in the class, Customers can pick a specific class they want and make a payment accordingly. Each class has an instructor who will help guide the customer in obtaining their desired goals. An instructor can teach multiple classes at various class sessions in a day.

All Employees of Fit Freak are listed in company's payroll system by which they can keep track of how much they earn. For each employee's payroll, there may be an Incentive added to their monthly salary. Our gym provides solo and family gym membership to use the gym facilities such as gym equipment and various offers associated with it. The membership can be registered on a monthly, quarterly, and yearly basis. We also offer one day membership for new customers who require a guest pass.

Our customer makes a payment based on their gym service used i.e. Product purchase, class enrollment and gym membership. Fit freak values customer feedback for providing the best to our customer. At every product purchased by the customer, they may choose to leave a rating and comment for our product used. Fit Freak also offers state of the art gym Equipment. Whether you want to weight train, use the elliptical, work on abs, etc., Fit Freak makes sure to have the tools ready for their customers. Every gym location of Fit Freak has multiple gym equipment available for use.
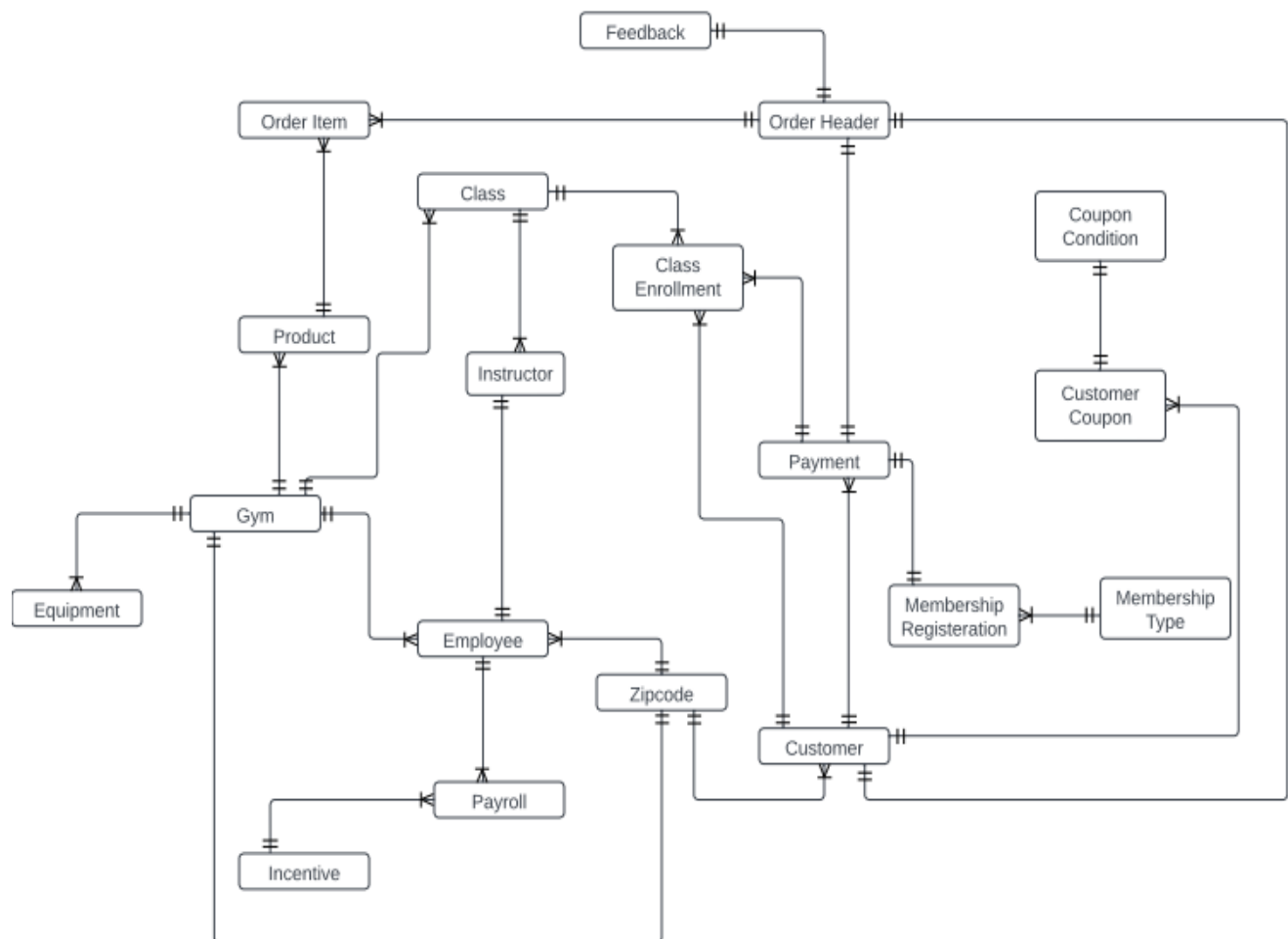
As a service-based company, we understand people love discounts and sales. FitFreak offers various types of discounts to Customers in the form of discount coupons. There are many discounts offered specifically for students, senior citizens, new and regular customers. We also offer seasonal and celebration discounts. Depending on the Coupon Condition, the discount would then be applied.

To efficiently run our company, we are storing information related to gym operations, including classes, employees, customers, memberships, equipment, products, employees, and financial transactions in our database management system. The Gym Management System is a comprehensive and user-friendly solution for gym owners and managers that automates and streamlines various aspects of gym operations, allowing them to focus on providing the best possible fitness experience for their clients.
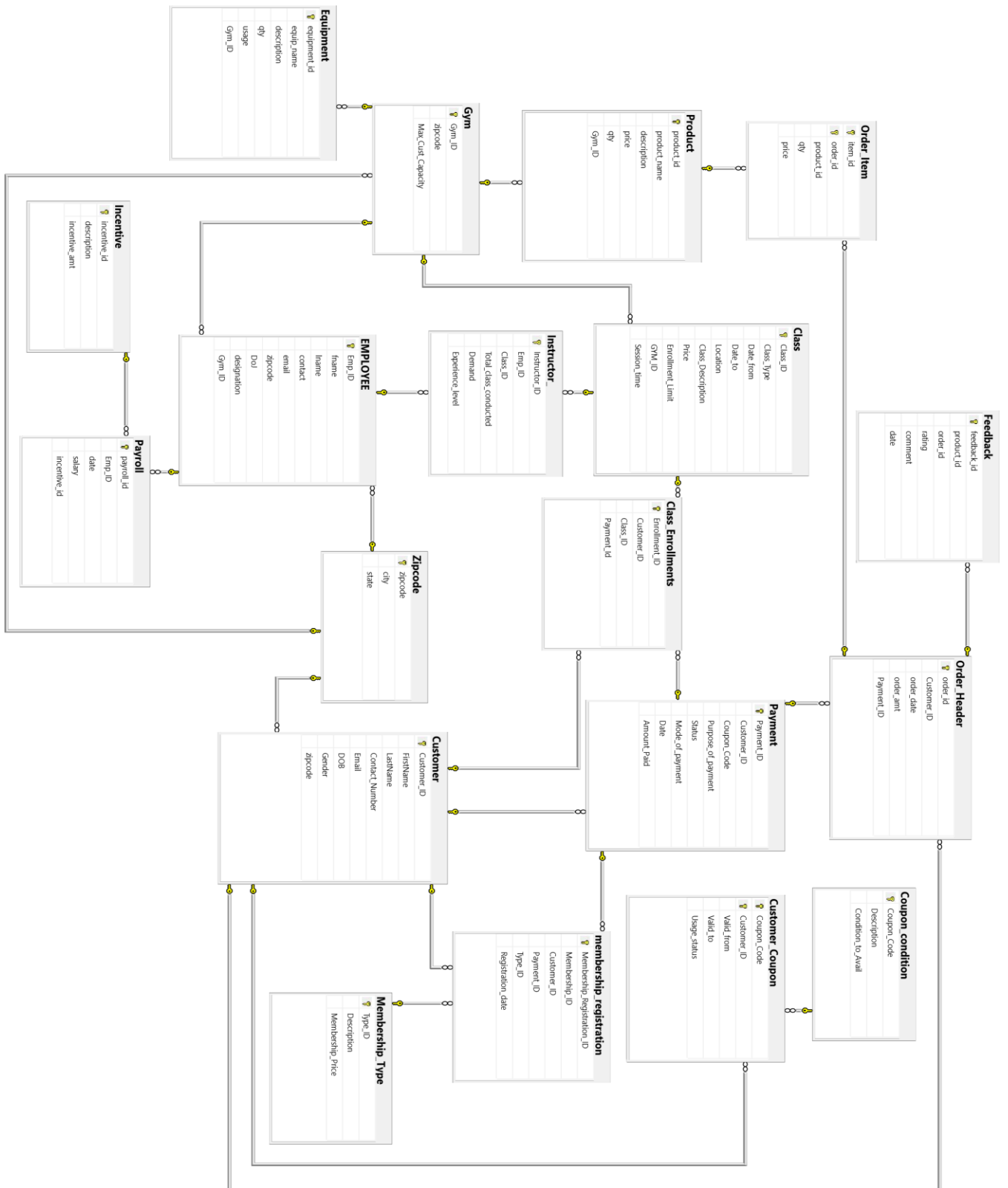
Assumptions:

1. A customer without a gym membership or class enrollment can also purchase a product.
2. A customer may choose to not use a coupon code during payment.
3. Instructor does not receive any payments via class enrollment, instead receives payment via the company's payroll system.
4. A customer may choose to switch from family to solo membership and vice versa over the time. Hence, a customer can have multiple gym membership registrations.
5. For a family membership, a payment will be made by only one member of the family.
6. There can be multiple product items in the order header of customer.
7. A coupon code is generated for every family member registered in family membership.
8. Partial payments cannot be made by the customer for any gym service used.
9. There is only gym at every zip code.
10. A customer with membership can use the gym facilities at any location.
11. Each customer has multiple coupon codes to use as discount for payment.

Entity Relationship diagram:

ERD TABLES

SQL QUERIES

1. List customers who have enrolled in class1003.

```
select c.FirstName,c.LastName
from Customer c
join Class_Enrollments ce on c.Customer_ID = ce.Customer_ID
where Class_ID ='Class1003'
```

89 %

Results   Messages

	FirstName	LastName
1	Uzma	Khan

2. List all the customers who have enrolled in classes at gym FFG_1.

```
SELECT c.Customer_ID, c.FirstName, c.LastName
FROM Customer c
JOIN Class_Enrollments ce ON c.Customer_ID = ce.Customer_ID
JOIN Class cl ON ce.Class_ID = cl.Class_ID
WHERE cl.GYM_ID = 'FFG_1'
```

89 %

Results   Messages

	Customer_ID	FirstName	LastName
1	10008	Simi	Kapoor
2	10011	Tejaswini	Mode
3	10017	Monica	Geller

3. Find the total number of classes offered at each gym.

```
SELECT g.Gym_ID, COUNT(cl.Class_ID) as Total_Classes
FROM Gym g
LEFT JOIN Class cl ON g.Gym_ID = cl.GYM_ID
GROUP BY g.Gym_ID;
```

89 %

Results   Messages

	Gym_ID	Total_Classes
1	FFG_1	3
2	FFG_2	2
3	FFG_3	2
4	FFG_4	3
5	FFG_5	2

4. List all the customers who have used a coupon.

```sql
SELECT DISTINCT c.Customer_ID, c.FirstName, c.LastName
FROM Customer c
JOIN Customer_Coupon cc ON c.Customer_ID = cc.Customer_ID;
```

89 %

Results | Messages

	Customer_ID	FirstName	LastName
13	10012	Sohaib	Uddin
14	10013	Farah	Lehecka
15	10014	London	jennings
16	10015	Tina	Flanning
17	10016	Rachel	Green
18	10017	Monica	Geller
19	10018	Ross	Geller
20	10019	Chandler	Bing
21	10020	Joey	Tribbiani
22	10021	Ronny	Singh
23	10022	Jorge	Gonzales
24	10023	Ryan	Reynolds
25	10024	Nicole	Doe
26	10025	Simran	Patel
27	10026	Melissa	Smith

5. Find the total revenue generated from all classes.

```sql
SELECT SUM(cl.Price) as Total_Revenue
FROM Class cl
JOIN Class_Enrollments ce ON cl.Class_ID = ce.Class_ID;
```

89 %

Results | Messages

	Total_Revenue
1	720

6. List the instructors along with the number of classes they have conducted.

```sql
SELECT e.Emp_ID, e.fname, e.lname, i.Total_class_conducted
FROM EMPLOYEE e
JOIN Instructor_ i ON e.Emp_ID = i.Emp_ID;
```

89 %

Results | Messages

	Emp_ID	fname	lname	Total_class_conducted
1	4001	John	Smith	45
2	4014	Robert	Anderson	52
3	4016	William	Jackson	113
4	4018	Mia	White	9
5	4002	Jane	Doe	96
6	4003	Nisha	Mehata	54
7	4005	Sarah	Lee	32
8	4006	David	Garcia	115
9	4009	Michael	Davis	55
10	4010	Emily	Hernandez	25
11	4011	Rahul	Joshi	10
12	4013	Ashley	Martinez	56

7. List all products sold along with the total quantity sold.

```sql
SELECT p.product_id, p.product_name, SUM(oi.qty) as Total_Quantity_Sold
FROM Product p
JOIN Order_Item oi ON p.product_id = oi.product_id
GROUP BY p.product_id, p.product_name
```

89 %

Results | Messages

	product_id	product_name	Total_Quantity_Sold
1	P_EB01	Exercise Ball	2
2	P_FR01	Foam Roller	2
3	P_FW01	Fitness Watch	5
4	P_HG01	Hand Gloves	4
5	P_JR01	Jump Rope	6
6	P_PP01	Protein Powder	2
7	P_PR01	Protein Bar	6
8	P_RB01	Resistance Bands	3
9	P_TR01	Trouser	8
10	P_TS01	T-Shirt	6
11	P_YM01	Yoga Mat	4

8. List all the customers who have provided feedback on product P_EB01.

```sql
SELECT c.Customer_ID, c.FirstName, c.LastName
FROM Customer c
JOIN Order_Header oh ON c.Customer_ID = oh.Customer_ID
JOIN Order_Item oi ON oh.order_id = oi.order_id
JOIN Feedback f ON oi.product_id = f.product_id
WHERE f.product_id = 'P_EB01'
```

89 %

Results | Messages

	Customer_ID	FirstName	LastName
1	10025	Simran	Patel

9. List the employees who have received incentives.

```sql
SELECT e.Emp_ID, e.fname, e.lname
FROM EMPLOYEE e
JOIN Payroll p ON e.Emp_ID = p.Emp_ID
WHERE p.incentive_id IS NOT NULL;
```

89 %

Results | Messages

	Emp_ID	fname	lname
19	4019	Daniel	Thompson
20	4020	Madison	Garcia
21	4021	Charles	Harris
22	4022	Elizabeth	Martin
23	4023	Parul	Modi
24	5001	Ayush	Singh
25	5002	Sarah	Johnson
26	5003	Michael	Williams
27	5004	Jennifer	Brown
28	5005	David	Jones
29	5006	James	Martinez
30	5007	Emily	Robinson
31	5008	Lisa	Garcia
32	5009	Daniel	Clark
33	5010	Jessica	Wright

10. Calculate the average price of all classes offered at each gym. Round the price upto 2 decimal places.

```sql
SELECT g.Gym_ID, ROUND ( AVG(cl.Price),2) as Average_Price
FROM Gym g
JOIN Class cl ON g.Gym_ID = cl.GYM_ID
GROUP BY g.Gym_ID;
```

89 %

Results | Messages

	Gym_ID	Average_Price
1	FFG_1	53.33
2	FFG_2	75
3	FFG_3	57.5
4	FFG_4	61.67
5	FFG_5	55

11. List all customers who have registered for an annual family membership.

```sql
SELECT c.Customer_ID, c.FirstName, c.LastName
FROM Customer c
JOIN membership_registration mr ON c.Customer_ID = mr.Customer_ID
WHERE mr.Type_Id = 'MT1'
```

89 %

Results | Messages

	Customer_ID	FirstName	LastName
1	10000	Landon	Weiss
2	10001	Noah	Benitez
3	10002	Hanna	Lynch
4	10011	Tejaswini	Mode
5	10012	Sohaib	Uddin
6	10013	Farah	Lehecka
7	10014	London	jennings
8	10015	Tina	Flanning
9	10016	Rachel	Green
10	10017	Monica	Geller

12. Find the total number of customers in each city.

```
SELECT z.city, COUNT(c.Customer_ID) as Total_Customers
FROM Zipcode z
JOIN Customer c ON z.zipcode = c.zipcode
GROUP BY z.city;
```

89 %

Results   Messages

	city	Total_Customers
1	Beverly Hills	4
2	Chicago	4
3	Dekalb	5
4	Miami Beach	2
5	Naperville	4
6	New York	6
7	San Francisco	2

13. List all the instructors who have conducted classes in gym FFG_2.

```
SELECT e.Emp_ID, e.fname, e.lname
FROM EMPLOYEE e
JOIN Instructor_ i ON e.Emp_ID = i.Emp_ID
JOIN Class cl ON i.Class_ID = cl.Class_ID
WHERE cl.GYM_ID = 'FFG_2'
```

89 %

Results   Messages

	Emp_ID	fname	lname
1	4002	Jane	Doe
2	4009	Michael	Davis

14. Find the total revenue generated by each product.

```
SELECT p.product_id, p.product_name, SUM(oi.qty * oi.price) as Total_Revenue
FROM Product p
JOIN Order_Item oi ON p.product_id = oi.product_id
GROUP BY p.product_id, p.product_name;
```

89 %

Results   Messages

	product_id	product_name	Total_Revenue
1	P_EB01	Exercise Ball	100
2	P_FR01	Foam Roller	40
3	P_FW01	Fitness Watch	1350
4	P_HG01	Hand Gloves	120
5	P_JR01	Jump Rope	180
6	P_PP01	Protein Powder	80
7	P_PR01	Protein Bar	54
8	P_RB01	Resistance Bands	100
9	P_TR01	Trouser	800
10	P_TS01	T-Shirt	150
11	P_YM01	Yoga Mat	180

Query executed successfully.   omissql4.niunt.niu.edu (15.... NIUNT\z1977614 (57) z1977614

15. List all customers who have available coupons to use.

```sql
SELECT c.Customer_ID, c.FirstName, c.LastName
FROM Customer c
JOIN Customer_Coupon cc ON c.Customer_ID = cc.Customer_ID
WHERE cc.Usage_status = 'available'
```

89 %

Results | Messages

	Customer_ID	FirstName	LastName
1	10000	Landon	Weiss
2	10001	Noah	Benitez
3	10002	Hanna	Lynch
4	10020	Joey	Tribbiani

Query execute... | omissql4.niunt.niu.edu (15.... | NIUNT\z1977614 (57) | z1977614 | 00:00:00 | 4 rows

16. List all the gyms along with their maximum customer capacity.

```sql
SELECT g.Gym_ID, z.city, z.state, g.Max_Cust_Capacity
FROM Gym g
JOIN Zipcode z ON g.zipcode = z.zipcode;
```

89 %

Results | Messages

	Gym_ID	city	state	Max_Cust_Capacity
1	FFG_1	New York	NY	50
2	FFG_2	Beverly Hills	CA	75
3	FFG_3	Chicago	IL	100
4	FFG_4	Miami Beach	FL	60
5	FFG_5	San Francisco	CA	80

Query execute... | omissql4.niunt.niu.edu (15.... | NIUNT\z1977614 (57) | z1977614 | 00:00:00 | 5 rows

17. List all the equipment in each gym along with their quantity.

```sql
SELECT g.Gym_ID, e.equip_name, e.qty
FROM Gym g
JOIN Equipment e ON g.Gym_ID = e.Gym_ID;
```

89 %

Results | Messages

	Gym_ID	equip_name	qty
1	FFG_1	Dumbbell Set	20
2	FFG_2	Dumbbell Set	30
3	FFG_3	Dumbbell Set	25
4	FFG_4	Dumbbell Set	18
5	FFG_5	Dumbbell Set	17
6	FFG_1	Elliptical	8

Query execut... | omissql4.niunt.niu.edu (15.... | NIUNT\z1977614 (57) | z1977614 | 00:00:00 | 25 rows

18. List all the customers who have given rating more than 4 along with their comment.

```sql
SELECT c.Customer_ID, c.FirstName, c.LastName, f.rating, comment
FROM Customer c
JOIN Order_Header oh ON c.Customer_ID = oh.Customer_ID
LEFT JOIN Order_Item oi ON oh.order_id = oi.order_id
LEFT JOIN Feedback f ON oi.product_id = f.product_id
WHERE f.rating>4;
```

89 %

Results Messages

	Customer_ID	FirstName	LastName	rating	comment
1	10015	Tina	Flanning	5	Nice
2	10017	Monica	Geller	5	"The resistance bands are versatile and high qu...
3	10020	Joey	Tribbiani	5	"The protein bar is a great snack to have on han...
4	10022	Jorge	Gonzales	5	Nice
5	10024	Nicole	Doe	5	"The jump rope is lightweight and easy to use."
6	10026	Melissa	Smith	5	"The hand gloves feel a bit too bulky for me."

Query execut... omissql4.niunt.niu.edu (15.... NIUNT\z1977614 (57) z1977614 00:00:00 14 rows

19. Find the total number of customers who have registered for each membership type.

```sql
SELECT mt.TypeID, mt.Description, COUNT(mr.Customer_ID) as Total_Customers
FROM Membership_Type mt
JOIN membership_registration mr ON mt.TypeID = mr.Type_Id
GROUP BY mt.TypeID, mt.Description;
```

89 %

Results Messages

	TypeID	Description	Total_Customers
1	MT1	Family Annual Pass	10
2	MT2	Family Monthly Pass	4
3	MT3	Family Day Pass	7
4	MT4	Solo Annual Pass	2
5	MT5	Solo Monthly Pass	2
6	MT6	Solo Day Pass	2

Query execute... omissql4.niunt.niu.edu (15.... NIUNT\z1977614 (57) z1977614 00:00:00 6 rows

20. Find a query to get the list of customers who have purchased gym products and the total amount spent on gym products by each customer.

```sql
select c.Customer_ID, c.FirstName, c.LastName, SUM(p.Amount_Paid) as total_amt
from Customer c join Payment p
on c.Customer_ID = p.Customer_ID
group by c.Customer_ID, c.FirstName, c.LastName
```

89 %

Results Messages

	Customer_ID	FirstName	LastName	total_amt
1	10000	Landon	Weiss	1500
2	10001	Noah	Benitez	40
3	10002	Hanna	Lynch	20
4	10003	Reagan	Wilcox	125
5	10005	Angel	Arnold	600
6	10006	Drew	Knight	65
7	10007	Natasha	Kaling	12
8	10008	Simi	Kapoor	75
9	10009	Anushka	Verma	75
10	10010	Uzma	Khan	35
11	10011	Tejaswini	Mode	1420

Query executed successfully. omissql4.niunt.niu.edu (15.... NIUNT\z1977614 (53) z1977614 00:00:00 26 rows

21. Find a query to find the number of customers who have purchased gym products and have also registered for any gym membership.

```
Select count(Customer_ID) as CustomerCount from Order_header
WHERE Customer_ID in
(Select Customer_ID FROM MEMBERSHIP_REGISTRATION)
```

9 %

	CustomerCount
1	20

Conclusion:

In conclusion, the database management system of Fit Freak offers a wide range of features and functionalities, such as class management, membership management, employee management, inventory management and financial management. By implementing this system, gym owners and managers can efficiently manage their gym's resources, improve customer satisfaction, and enhance overall business performance.

The system also provides valuable insights through various reports, which can help in making informed decisions for the growth and success of the gym business. With regular updates and maintenance, the Gym Management System will continue to be an effective and efficient solution for managing Fit Freak's gym operations in the ever-evolving fitness industry.