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Case Study

Lawn Squad: Designing Lawn Care Services

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1. About Lawn Squad

Lawn Squad is a Calgary-based service company dedicated to delivering high-quality lawn care and maintenance solutions to both **residential** and **commercial** clients. With a growing customer base, the company provides a variety of seasonal and year-round services aimed at enhancing outdoor spaces.

As part of its digital transformation initiative, Lawn Squad is moving away from manual record-keeping to a **data-driven system** that improves service delivery, scheduling, customer management, and performance analysis. The project focuses on designing and implementing a structured database system that supports business operations, enhances customer experience, and enables future scalability.

Services Offered:

- ♦ Lawn Aeration
- ♦ Power Raking
- ♦ Window Cleaning
- ♦ Fertilization

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2. Mission and Objectives

Mission:

“To design and implement a digital data system for Lawns Squad.”

Objectives:

- Streamline service management.
- Implement a digital database system.
- Enable data-driven decision making.

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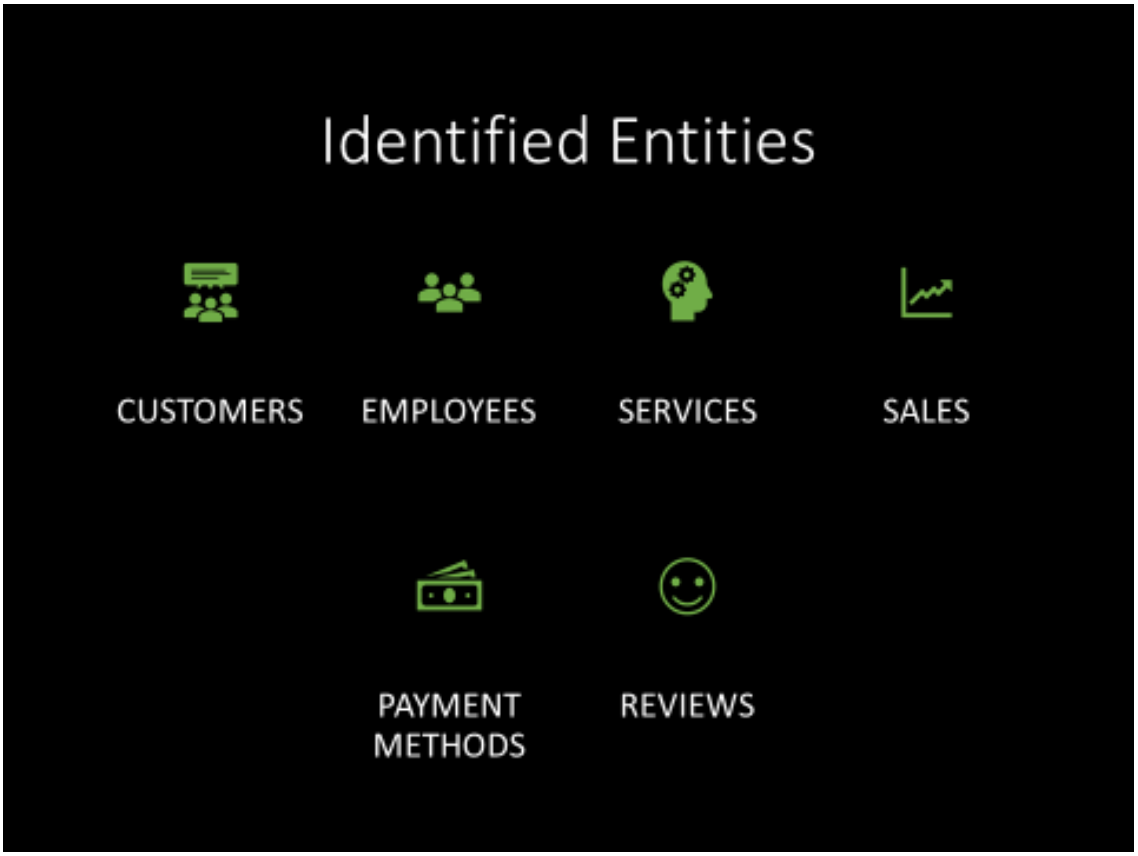
3. Identified Entities



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4. Entity Relationships

Definition:
Understanding how the entities relate to one another is crucial for building a normalized and relational database. Below are the key relationships used in Lawn Squad's database design:

- **Employees → Sales** : One-to-Many
- **Customers → Sales** : One-to-Many
- **Sales → Services** : Many-to-One
- **Sales → Payment Methods**: Many-to-One
- **Customers → Reviews** : One-to-Many

Employees Sales: One-to-Many

Definition: One employee can be associated with multiple sales, but each sale is linked to only one employee.
Why it matters: Tracks employee workload and performance based on assigned services.
Example: Alex (employee) is assigned to 5 different customer jobs—each of those sales is connected to Alex.

Customers Sales: One-to-Many

Definition: A single customer can request multiple services over time, resulting in multiple sales records.

Why it matters: Helps maintain a history of customer interactions and supports repeat service tracking.

Example: John Doe (customer) books lawn aeration in April and window cleaning in June—both sales link back to John.

Sales Services: Many-to-One

Definition: Many sales can be associated with a single type of service, but each sale pertains to only one service.

Why it matters: Simplifies service classification and reporting (e.g., most requested services).

Example: 20 sales records for "Fertilization" all point to the same "Fertilization" entry in the Services table.

Sales Payment Methods: Many-to-One

Definition: Each sale uses one payment method, but one payment method can be used in many sales.

Why it matters: Enables analysis of how customers prefer to pay (credit, cash, e-transfer, etc.).

Example: Out of 100 sales, 65 were paid using credit card—all referencing the same "Credit Card" method.

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Customers Reviews: One-to-Many

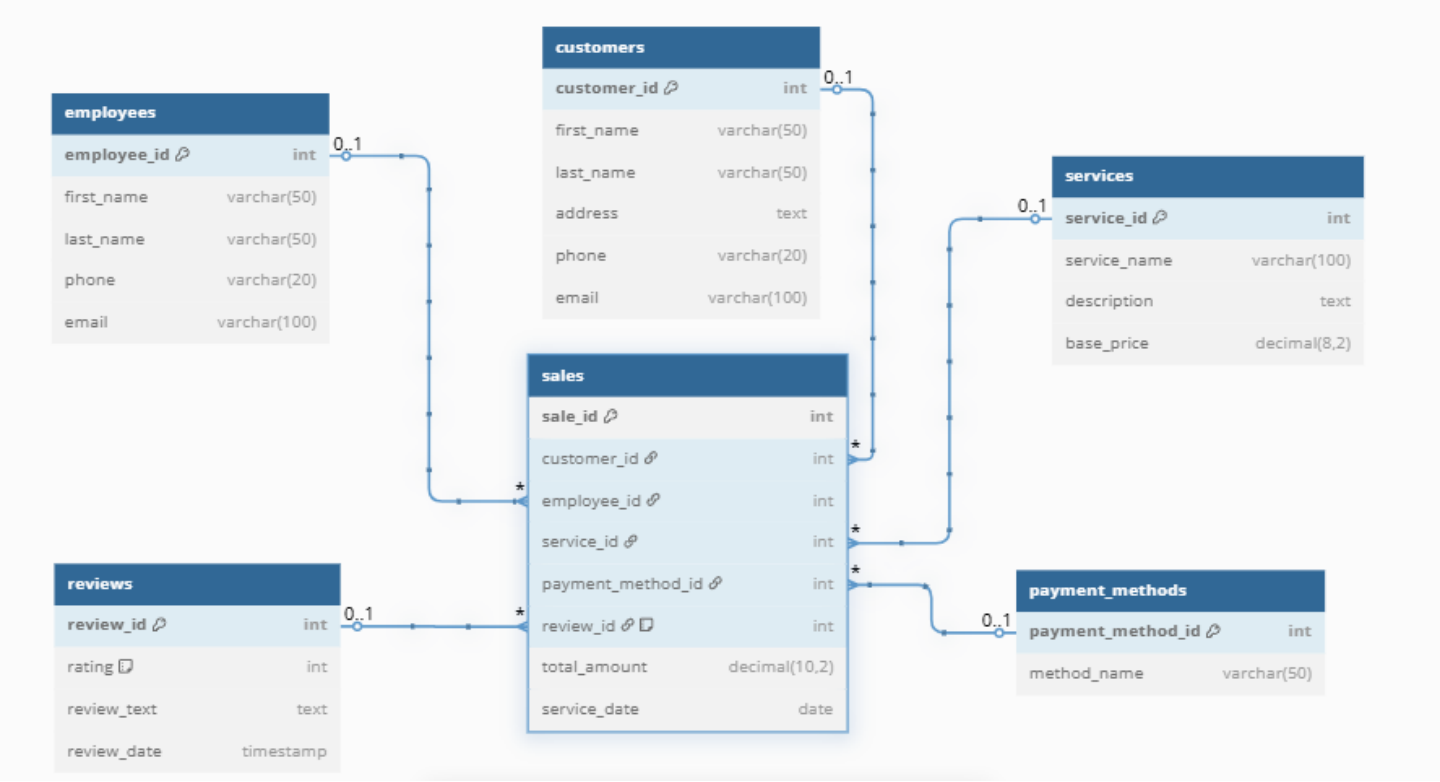
Definition: One customer may leave multiple reviews, each connected to a different service experience.

Why it matters: Supports quality assurance and service improvement through feedback tracking.

Example: Sarah (customer) leaves a review after lawn aeration and another after window cleaning—both reviews are tied to her profile.

5. Entity Relationship Diagram

Refer to the attached ER diagram slide in the original presentation.



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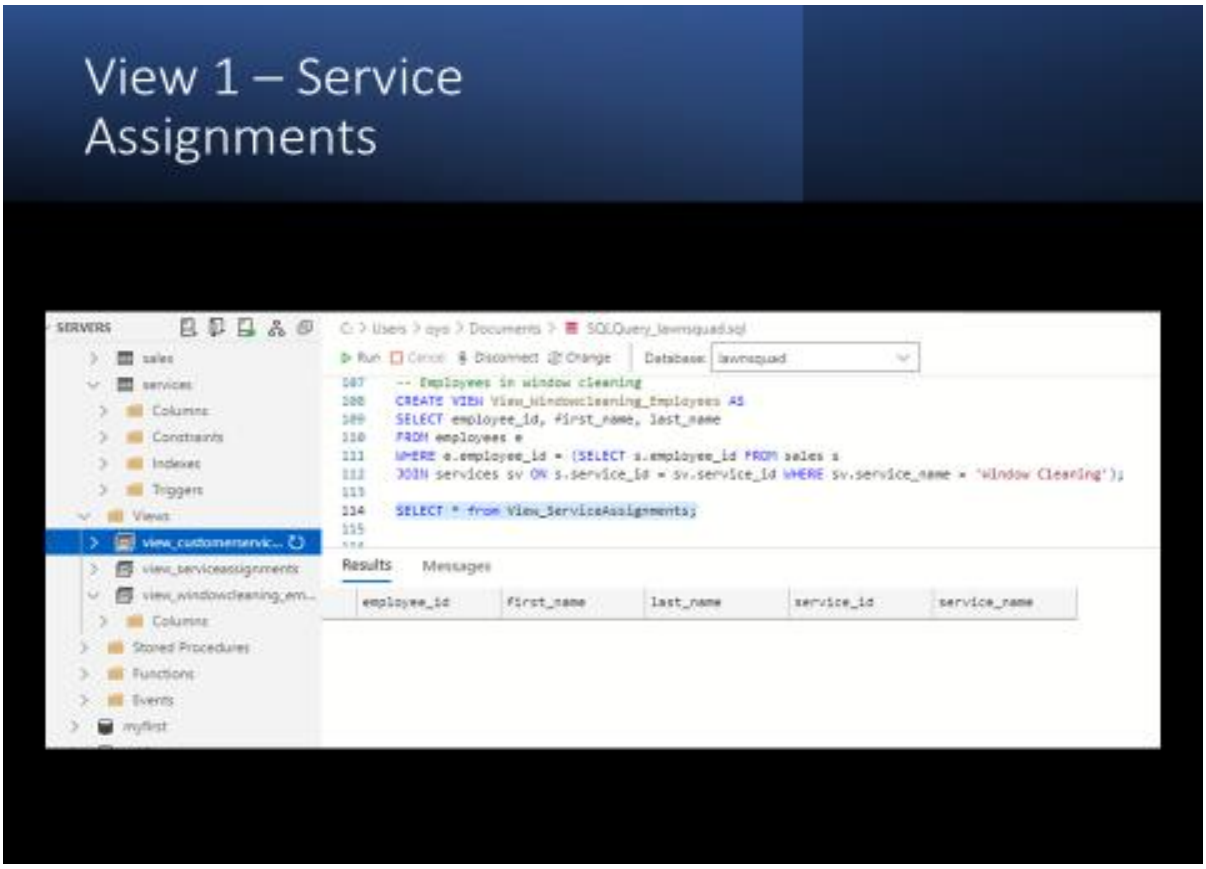
6. Data Views

View 1 – Service Assignments



SQL QUERIES

```
CREATE VIEW View_ServiceAssignments AS
SELECT s.employee_id, e.first_name, e.last_name,
s.service_id, sv.service_name
FROM sales s
INNER JOIN employees e ON s.employee_id =
e.employee_id
INNER JOIN services sv ON s.service_id =
sv.service_id;
```

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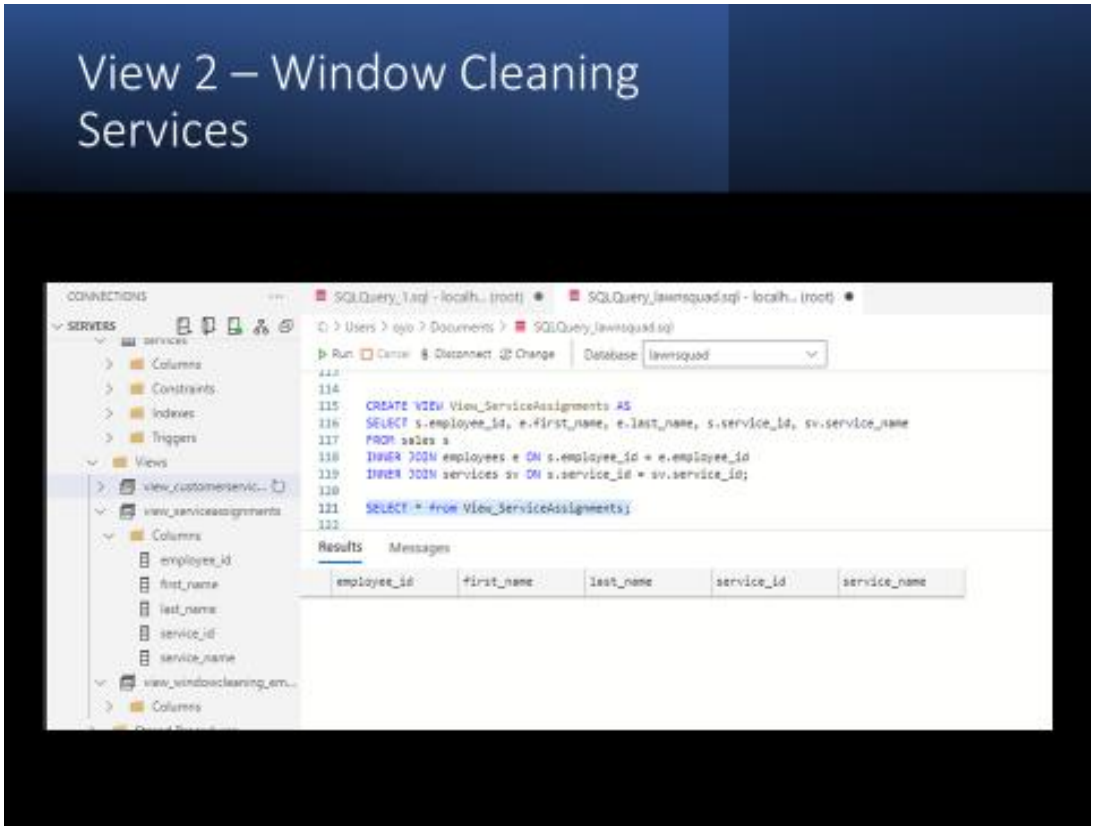
View 2 – Window Cleaning Services



SQL QUERIES

```
-- Employees in window cleaning
CREATE VIEW View_Windowcleaning_Employees AS
SELECT employee_id, first_name, last_name
FROM employees e
WHERE e.employee_id = (SELECT s.employee_id FROM
sales s
JOIN services sv ON s.service_id = sv.service_id
WHERE sv.service_name = 'Window Cleaning');
```

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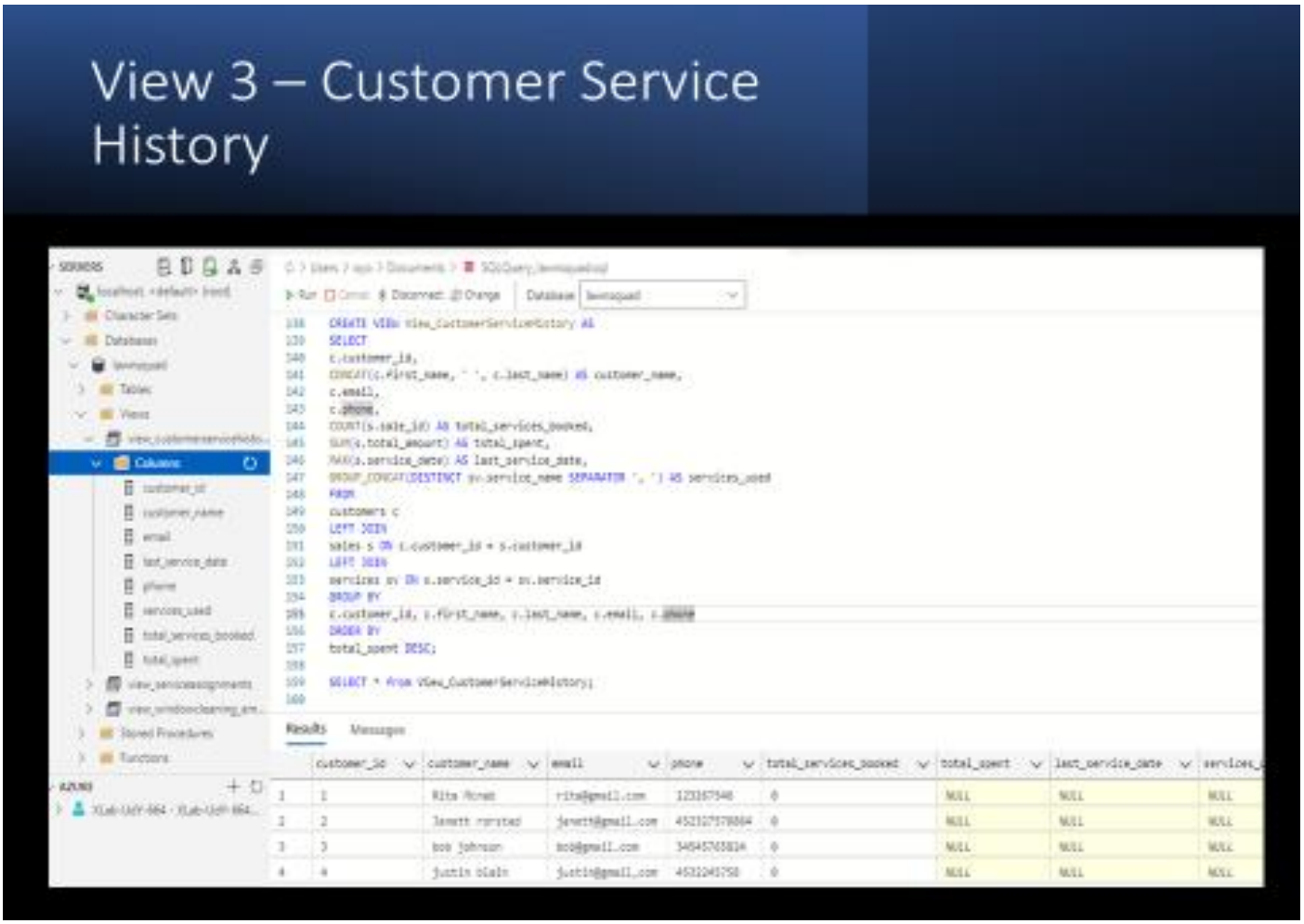
View 3 – Customer Service History



SQL QUERIES

```
SELECT
    c.customer_name,
    s.service_name,
    r.review_text,
    r.rating,
    r.review_date
FROM
    Reviews r
JOIN Customers c ON r.customer_id = c.customer_id
```

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```
JOIN Sales sa ON r.sale_id = sa.sale_id
JOIN Services s ON sa.service_id = s.service_id
ORDER BY
    r.review_date DESC;
```

7. Conclusion & Acknowledgment

Thank you for reviewing our project. We look forward to implementing the next stages of designing data for Lawn Squad.