Photography Business Database — EER & Sample Data

Files included

- EER_Diagram_Photography.png: Enhanced ER diagram with entities, PK/FK labels, and cardinalities.
- Sample_Data_Photography.xlsx: 8 sheets with ~40 rows each (synthetic, realistic values).
- Normalization_Report.pdf: Documentation of normalization to 3NF with analysis and scenarios.
- README.md: brief design explanation and queries.

Design Summary

This database models a small photography studio's core operations. The main entities are Clients, Packages, Locations, Staff, Bookings, Invoices, Deliveries, and the junction BookingStaff. Bookings references one client, one package, and one location (all 1:M). Invoices are modeled 1:1 with bookings via a unique foreign key to simplify 'one bill per booking.' Deliveries are 1:M from bookings, allowing multiple deliverables (proofs, finals, prints). Staff participate in many bookings and each booking can include many staff, captured by BookingStaff with a composite PK (booking_id, staff_id) and role. Key constraints include non-null FKs on Bookings, invoice totals (amount + tax), and end_datetime > start_datetime.

The database has been normalized through 1NF, 2NF, and 3NF. Each attribute depends only on its PK, all partial dependencies were removed (e.g., package details separated from bookings), and no transitive dependencies remain (e.g., invoice tax rates isolated from bookings). This ensures data integrity and efficient querying. Sample data (~40 rows/table) provides realistic 2024–2025 values to support testing, reporting, and normalization.

Example SQL Queries

Query 1: Staff members and their roles for wedding sessions

```
SELECT
    b.booking_id,
    s.staff_id,
    s.first_name,
    s.last_name,
    bs.role
FROM Bookings b
JOIN BookingStaff bs ON b.booking_id = bs.booking_id
JOIN Staff s ON bs.staff_id = s.staff_id
JOIN Packages p ON b.package_id = p.package_id
WHERE p.package_type = 'Wedding';
```

Use Case: Answers "Which staff members worked on a wedding session, and what were their roles?"

Query 2: Client bookings with package, invoice, and delivery status

```
SELECT
    c.client_id,
    c.first_name,
    c.last_name,
    b.booking_id,
```

```
    p.package_type,
    i.total_amount,
    d.status AS delivery_status
FROM Clients c
JOIN Bookings b ON c.client_id = b.client_id
JOIN Packages p ON b.package_id = p.package_id
LEFT JOIN Invoices i ON b.booking_id = i.booking_id
LEFT JOIN Deliveries d ON b.booking_id = d.booking_id
WHERE c.client_id = 101;  -- Example client
```

Use Case: Answers “Show all bookings for a specific client, including package type, invoice amount, and delivery status.”