1. Project Overview & Timeline

- **Objective:** Discover how the clock-time of your meals affects your self-rated energy (1–10) afterward, and how skipping meals factors in.

- **Duration: 14 days** (two full weeks captures both weekday and weekend patterns).

- **Daily Routine:**

  - Log each **eating event** (or planned event you skipped) in Excel as it happens.

  - At a consistent time (~1 hr post-meal), record your **EnergyRating**.

2. Excel Logging

Create a simple workbook—one sheet, these columns:

Column	Example	Notes
Date	2025-07-21	The calendar date of the meal.
MealTime	08:15:00	Clock time you ate, in HH:MM:SS or HH:MM format.
EnergyRating	7	How energized you feel 1 hr after eating (1–10).
SkipFlag	0 or 1	1 if you skipped this scheduled meal, else 0.

- **Tip:** Pre-fill rows for your usual meals (e.g. breakfast at 8 AM, lunch at 12 PM, dinner at 6 PM). For any you miss, mark `SkipFlag=1` and leave `EnergyRating` blank or zero.

- **Save As:** After Day 7 and Day 14, export this sheet as **CSV** for your SQL step.

3. SQL: Import, Clean & Transform

Use PostgreSQL, MySQL, or SQLite—whichever you prefer.

a. Create Database & Table

```
-- In psql or your SQL client:
CREATE DATABASE meal_energy;
\c meal_energy

CREATE TABLE meals (
  id            SERIAL PRIMARY KEY,
  log_date      DATE,
  meal_time     TIME,
  energy_rating INTEGER,
  skip_flag     BOOLEAN
);
```

b. Load Your CSV

```
-- Adjust path as needed:
\copy meals(log_date, meal_time, energy_rating, skip_flag)
  FROM '/path/to/meal_log.csv' WITH CSV HEADER;
```

c. Add Derived Columns

```
-- Extract hour-of-day for grouping:
ALTER TABLE meals ADD COLUMN meal_hour INTEGER;
UPDATE meals
  SET meal_hour = EXTRACT(HOUR FROM meal_time);

-- (Optional) Flag weekend vs. weekday:
ALTER TABLE meals ADD COLUMN day_type TEXT;
UPDATE meals
  SET day_type = CASE
    WHEN EXTRACT(DOW FROM log_date) IN (0,6) THEN 'Weekend'
    ELSE 'Weekday'
  END;
```

d. Create a View for Tableau

```
CREATE VIEW v_meal_energy AS
SELECT
  log_date,
  meal_hour,
  AVG(energy_rating)         AS avg_energy,
  SUM(CASE WHEN skip_flag THEN 1 ELSE 0 END) AS skips,
```

```
  COUNT(*)              AS total_records
FROM meals
GROUP BY log_date, meal_hour;
```

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4. Tableau Dashboard

Connect Tableau Desktop to your `meal_energy` database (or use the view as a custom SQL source), then build three worksheets:

4.1 Energy vs. Time-of-Day Scatter

- **Columns:** `meal_time` (continuous)

- **Rows:** `energy_rating`

- **Detail/Color:** `skip_flag` (to hide or gray out skipped points)

- **Tooltip:** Show `log_date` & exact `energy_rating`.

4.2 Meal-Time Distribution Histogram

- **Columns:** `meal_hour` (binned by hour)

- **Rows:** `COUNT(meal_time)`

- **Dual-Axis (optional):** Overlaid line of `SUM(skip_flag)` by the same bins.

4.3 Avg Energy by Hour-of-Day Line

- **Columns:** `meal_hour`

- **Rows:** `AVG(energy_rating)`

- **Color (optional):** `day_type` to split Weekday vs. Weekend.

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5. Assemble & Polish

1. **Dashboard Layout:**

   - **Top Row:** Scatter (wide)

   - **Bottom Left:** Histogram

   - **Bottom Right:** Line chart

2. **Global Filters / Controls:**

   - **SkipFlag** (show/hide skipped points)

   - **DayType** (weekday vs. weekend)

   - **Time-of-Day Slider:** restrict to morning/afternoon/evening hours

3. **KPI Banner (optional):**

   - Overall Avg Energy

   - Total Skips

4. **Styling:**

   - Consistent fonts and color palette (e.g. Tableau 10)

   - Clear titles ("Post-Meal Energy by Clock Time") and tooltips.

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6. Analysis & Next Steps

- **Interpret:** Look for your "energy peak" hour and any big dips when you skip meals.

- **Extend:** If results look promising, log for 30 days or add fields (e.g. MealType) to refine insights.

- **Share:** Publish to Tableau Public or export as PDF/PNG to review your own habits.