**First, I arrange the data in Excel in Proper format**

* **Ctrl + T** (Turn data in Table)
* Arrange Height width of table **( Alt + H + O + I )**
* Remove Duplicate **(ALT + A + M)**
* Check Blanks missing Data **( Ctrl + G)** Blanks

**How to Fill Blanks with Proper Data**

Instead of "Unknown", we’ll use **context-aware imputations**:

**1. Gender**

* If Resident Name looks male/female, infer gender (e.g., “William Moore” → Male).
* If not obvious, distribute proportionally (e.g., 50/50 split).

**2. Dementia**

* If resident is **High Risk / Bedridden / Frequent Falls** → more likely "Yes".
* Otherwise → "No".

**3. Mobility Category**

* If **Assist Type = Double Assist** → "Bedridden" or "Wheelchair".
* If **Assist Type = Single Assist** → "Walker".
* If **Assist Type = None** → "Walking Stick" or "Independent".

**4. State**

* Fill blanks with the most common state in dataset (mode imputation).

**5. Date of Admission**

* Use a realistic admission date: random between 2015 and 2024.

**6. Assist Type**

* If **Mobility = Bedridden/Wheelchair** → "Double Assist".
* If **Mobility = Walker** → "Single Assist".
* If **Mobility = Walking Stick** → "None".

**7. Country of Birth**

* Fill blanks with realistic countries (Vietnam, Italy, UK, India, China, etc.) based on aged care population diversity in Australia.

**8. Fall Location**

* If resident has **falls** → fill with "Bathroom" or "Bedroom" (common in aged care).
* If no falls → "Not Applicable".

**9. Preferred Language**

* Link to Country of Birth (e.g., Vietnam → Vietnamese, Italy → Italian, UK → English).

**Standardize Categorical Values**

* **Gender column** → values like MALE, male, NaN  
  ✅ Convert to consistent format (e.g., Male, Female).  
  ✅ Handle missing gender values (fill as Unknown or drop if few).
* **Dementia column** → values like YES, yes, NO  
  ✅ Standardize to Yes / No.
* **Mobility Category** → WALKER, walker, Bedridden  
  ✅ Standardize case (capitalize first letter: Walker, Wheelchair, Bedridden, Walking Stick).
* **Assist Type** → DOUBLE ASSIST, Single Assist, NONE  
  ✅ Standardize to (Single Assist, Double Assist, None).
* **State** → NT, nt, VIC  
  ✅ Convert to proper Australian state codes (NSW, VIC, QLD, etc., all uppercase).
* **Country of Birth** → VIETNAM, italy, NaN  
  ✅ Standardize case (e.g., Vietnam, Italy).  
  ✅ Replace blanks with Unknown.

**Format Columns**

* Date of Admission → convert all to a standard date format (YYYY-MM-DD).
* Age → ensure numeric, check for outliers (e.g., age > 110 → likely error).
* Fall Incident Count → ensure numeric (fill blanks with 0).

**Sheet 1: Overall (Facility Overview)**

👉 This is your **landing page** – shows everything at a glance.

**Key Visuals & KPIs**

* **Total Residents** (card)
* **High-Risk Residents** (card)
* **Total Fall Incidents** (card)
* **Residents with Dementia %** (card)
* **Fall Incident Trend (line chart)** → by year/month of admission
* **Residents by Age Group (column chart)**
* **Residents by State (map visual)**
* **Preferred Language & Country of Birth (treemap/pie)**

**Possible Filters:**

* Date Range (Admission Year/Month)
* State
* Age Group

**⚠️ Sheet 2: Risk Analysis**

👉 Deep dive into **risk levels and fall incidents**.

**Visuals**

* **Risk Level Distribution** (donut chart: Low, Medium, High)
* **Fall Incidents by Risk Level** (stacked bar)
* **High-Risk Residents with Dementia %** (KPI card)
* **Fall Incidents by Location** (pie chart: Bathroom, Bedroom, Hallway, Lifter)
* **Mobility vs Risk Level** (heatmap or matrix)
* **Assist Type vs Risk Level** (clustered column chart)

**Filters:**

* Risk Level
* Dementia Status
* Location of Fall

**🧑‍🤝‍🧑 Sheet 3: Residents Profile**

👉 Focus on **who the residents are**.

**Visuals**

* **Resident Demographics Table** (Name, Age, Gender, Dementia, Risk Level, Assist Type)
* **Fall incident**
* **Age Distribution of Residents** (histogram)
* **Gender Breakdown** (donut chart)
* **Residents by Country of Birth** (bar chart/treemap)
* **Residents by Preferred Language** (treemap/pie chart)

**Filters:**

* Gender
* Risk Level
* Assist Type
* Country of Birth

**🚑 Sheet 4: Care & Assistance**

👉 Focus on **care needs and support**.

**Visuals**

* **Assist Type Distribution** (single assist, double assist, none – pie chart)
* **Mobility Categories of Residents** (bar chart: walker, bedridden, wheelchair, walking stick)
* **Risk Level by Assist Type** (stacked column chart)
* **Table:** High-Risk Residents needing Double Assist (filter applied)

**Filters:**

* Assist Type
* Risk Level
* Mobility Category

**📉 Sheet 5: Trends & Insights**

👉 Designed for **managers/decision-makers** to see patterns.

**Visuals**

* **Fall Incidents Over Time (line chart)** → by month/year
* **Admission Year vs Risk Level** (stacked column)
* **Fall Incidents by Age Group (bar chart)**
* **Top 10 Residents with Most Falls** (table)
* **Correlation Matrix (if possible in Power BI)**: Dementia vs Risk vs Mobility

**Filters:**

* Year of Admission
* Age Group
* Dementia Status
* Risk Level

**Suggested Global Filters for All Sheets:**

* **Date range**
* **Risk Level**
* **Mobility Status**
* **Dementia Status**
* **State**
* **Age Group**