**Housing analytics dataset** with **500 records**. The dataset includes key fields such as:

* **Tenant\_ID**: Unique identifier for each tenant.
* **Location**: City where the tenant resides (e.g., Glenrothes, Edinburgh, Dundee).
* **Property\_Type**: Type of housing (Apartment, Detached, Semi-Detached, Terraced).
* **Maintenance\_Type**: Type of issue reported (Plumbing, Heating, Electrical, Structural, Other).
* **Request\_Date**: Date when the maintenance request was submitted.
* **Resolution\_Time\_Days**: Number of days taken to resolve the issue.
* **Satisfaction\_Score**: Tenant's rating (1-5) on service received.
* **Monthly\_Rent (£)**: Rent paid by the tenant.
* **Income\_Bracket**: Categorized as Low, Medium, or High

Here are **five key visualizations** to support your **presentation insights**:

1. **Most Common Maintenance Issues** – Helps identify which issues occur most frequently.
2. **Average Resolution Time by Maintenance Type** – Shows how long different issues take to resolve.
3. **Distribution of Tenant Satisfaction Scores** – Highlights overall tenant feedback.
4. **Impact of Resolution Time on Satisfaction** – Indicates if longer resolution times lead to lower satisfaction.
5. **Average Monthly Rent by Income Bracket** – Helps analyze housing affordability

**1. Structuring Your Presentation**

Since you have **15 minutes**, aim for **8-10 slides**, ensuring a balance between **clarity, depth, and engagement**.

**Suggested Outline for Your Presentation:**

**Slide 1: Title Slide**

* Your name
* Job title (**Data Analyst**)
* Date of presentation
* Kingdom Housing Association logo (optional)

**Slide 2: Introduction & Overview**

* Brief introduction about yourself and your experience in data analytics.
* Summary of what will be covered:
  + Understanding business & users
  + Solving problems with data
  + Making recommendations
  + Building data capability & maturity

**Slide 3: Case Study Introduction**

* Select a **real-world case study** (from your past experience) OR create a relevant example related to **housing associations, tenants, rent trends, or maintenance requests.**
* Define the **problem statement**: What issue did the business face?

**Example Case Study Idea (if you don’t have one already):**

📌 **Optimizing Tenant Satisfaction & Reducing Maintenance Costs**

* Issue: High volume of tenant complaints about repairs.
* Goal: Improve service response time and reduce maintenance costs.

**Slide 4: Understanding the Business & Users**

* Describe **how you used data to analyze user behavior**.
* What **data sources** did you use? (e.g., tenant complaints, maintenance logs, survey data)
* Example KPIs:
  + Number of maintenance requests per property
  + Average response time to complaints
  + Tenant satisfaction scores

**Slide 5: Solving the Problem Using Data**

* Explain your **methodology**:
  + **Data Collection**: Where did the data come from? (e.g., housing database, surveys, call logs)
  + **Data Cleaning & Preparation**: Handling missing data, outliers, merging datasets.
  + **Analysis Techniques**: Used **SQL, Python, Excel, Power BI/Tableau**?
  + **Visualization & Insights**: Example visual (bar charts, heatmaps).

**Slide 6: Key Insights from the Data**

* What **patterns or trends** did the data reveal?
* Example insights:
  + **Certain locations had more frequent maintenance issues.**
  + **Some contractors had slower response times.**
  + **Tenant satisfaction dropped when response time exceeded 48 hours.**

**Slide 7: Recommendations & Business Impact**

* Based on your findings, what **actionable recommendations** did you provide?
* Example:
  + **Prioritizing urgent maintenance tickets using predictive analytics.**
  + **Switching contractors with slow response times.**
  + **Using an automated tenant request system to streamline processes.**
* How did these recommendations impact the business?

**Slide 8: Building Data Capability & Maturity**

* **How did this case study improve data-driven decision-making?**
* Talk about:
  + Implementing **automated dashboards** for better visibility.
  + Training stakeholders on **data literacy**.
  + Encouraging a **culture of data-driven decisions**.

**Slide 9: Conclusion**

* Summarize key takeaways:
  + **Data helps understand business & users.**
  + **Solves real problems & drives actionable insights.**
  + **Building data capability ensures long-term growth.**
* End with: **"I'm happy to take any questions!"**

**Slide 10: Q&A (Optional)**

* Prepare for potential questions like:
  + "How did you ensure data accuracy?"
  + "What challenges did you face?"
  + "How would you apply this to Kingdom Housing Association?"

**2. Data & Visuals to Include**

For a **housing-focused case study**, you can create mock data or use open-source datasets:

📊 **Suggested Data Points:**

* Tenant complaints dataset (request types, time to resolve, satisfaction scores)
* Property maintenance logs (costs, frequency of repairs)
* Demographics of tenants (age, income, household size)
* Monthly rent trends vs. affordability

📈 **Visualization Ideas:**

* **Bar charts**: Complaint categories by frequency
* **Heatmaps**: Maintenance issues across locations
* **Line charts**: Tenant satisfaction trends over time
* **Pie charts**: Breakdown of issue types (e.g., plumbing, heating)

**3. Final Steps Before Submission**

✔ **Design a clean PowerPoint deck** (use Kingdom Housing Association’s color theme if possible).  
✔ **Practice the timing** – 15 minutes max!  
✔ **Submit by 1 PM the day before** (email: hrteam@kha.scot).  
✔ **Prepare for Q&A** – anticipate follow-ups on methodology, challenges, and impact.

**Understanding the Tenant Satisfaction Score Results**

The **tenant satisfaction score** represents how satisfied tenants are with the **maintenance services** they receive. The score is rated from **1 to 5**, where:

* **1** = Very Dissatisfied
* **2** = Dissatisfied
* **3** = Neutral
* **4** = Satisfied
* **5** = Very Satisfied

**Step 1: Prepare Your Data**

1. **Open your cleaned dataset** (Cleaned\_Housing\_Data.xlsx).
2. **Ensure data is in tabular format**:
   * Each column has **headers** (Tenant\_ID, Location, Maintenance\_Type, etc.).
   * No merged cells or blank rows.
   * Data is properly formatted (dates in date format, numbers in numeric format).
3. **Convert Data into an Excel Table**:
   * Select the entire dataset.
   * Press Ctrl + T → Check **"My table has headers"** → Click **OK**.
   * This makes it easier to analyze and update.

**📌 Step 2: Insert PivotTables**

PivotTables allow you to **summarize and analyze data** dynamically.

**1. Create a PivotTable**

1. Click anywhere inside the dataset.
2. Go to **"Insert" → "PivotTable"**.
3. Select **"New Worksheet"** → Click **OK**.

**2. Create PivotTables for Key Insights**

**📊 PivotTable 1: Most Common Maintenance Issues**

* Drag **Maintenance\_Type** to **Rows**.
* Drag **Tenant\_ID** to **Values** (change to "Count" if needed).
* This shows **how many complaints were made for each issue**.

**📊 PivotTable 2: Resolution Time & Satisfaction Score**

* Drag **Resolution\_Time\_Days** to **Rows** (Group by 5 days).
* Drag **Satisfaction\_Score** to **Values** (Average).
* This shows **how resolution time affects tenant satisfaction**.

**📊 PivotTable 3: Rent vs Income Bracket**

* Drag **Income\_Bracket** to **Rows**.
* Drag **Monthly\_Rent (£)** to **Values** (Average).
* This shows **the average rent per income level**.

**📌 Step 3: Insert PivotCharts**

Once you have PivotTables, you can create **visual charts**.

1. Click on a PivotTable.
2. Go to **"Insert" → "PivotChart"**.
3. Choose a **bar chart or line chart**.
4. Click **OK**.

**Recommended Charts:**

* **Most Common Maintenance Issues:** Use a **bar chart**.
* **Resolution Time vs Satisfaction Score:** Use a **line chart**.
* **Income Bracket vs Rent:** Use a **column chart**.

**📌 Step 4: Build the Dashboard Layout**

1. **Create a New Sheet** → Rename it **Dashboard**.
2. **Move PivotCharts to the Dashboard Sheet**:
   * Cut & paste the **PivotCharts** into the **Dashboard**.
   * Resize them to fit neatly.
3. **Add Slicers (For Interactivity)**:
   * Click on any **PivotTable**.
   * Go to **"Insert" → "Slicer"**.
   * Choose **filters like Location, Maintenance Type, Income Bracket**.
   * Click **OK** → Move slicers to a side panel.
   * Now, clicking on a slicer **updates all charts dynamically**.

**📌 Step 5: Formatting & Final Touches**

* **Remove gridlines:** Go to **View → Uncheck "Gridlines"**.
* **Give charts proper titles.**
* **Use colors:** Right-click on charts → **Format Chart Area** → Change colors.
* **Ensure slicers are properly aligned** for a clean look.

**📌 Step 6: Save & Share the Dashboard**

* **Save as .xlsx file** to retain interactivity.
* **Enable Macros (if needed)** for advanced automation.
* **Share the file** with stakeholders for review.

**How to Create a Slicer for Your Dashboard in Excel 2010**

Slicers make your Excel dashboard **interactive**, allowing users to **filter data visually**.

**📌 Note:**

Slicers were **introduced in Excel 2010**, but they only work with **PivotTables & PivotCharts**.

**📌 Step 1: Select Your PivotTable**

1. Click **inside your PivotTable** on the Dashboard sheet.
2. Go to the **Insert** tab in the Excel Ribbon.
3. Click **"Slicer"** (If it’s grayed out, make sure you’ve clicked a PivotTable).
4. The **Insert Slicer window** will appear.

**📌 Step 2: Choose Slicer Fields**

1. In the **Insert Slicers** window, select fields you want users to filter:
   * ✅ **Location** → Filter by city (e.g., Glasgow, Dundee).
   * ✅ **Maintenance Type** → Filter by issue (e.g., Plumbing, Electrical).
   * ✅ **Income Bracket** → Filter by rent affordability.
2. Click **OK**.

**📌 Step 3: Move & Format the Slicer**

1. The slicer will appear as a **floating box** on your sheet.
2. **Move it to the Dashboard Sheet**:
   * Click and **drag it** to a **clean area on the dashboard** (e.g., top left).
3. **Resize for better visibility**:
   * Click the slicer → Drag the corners to adjust size.
4. **Style the slicer**:
   * Click on the slicer → Go to the **"Slicer Tools – Options"** tab.
   * Choose a **different slicer style** (e.g., colored borders).

**📌 Step 4: Connect Slicer to Multiple PivotTables**

By default, slicers **only filter one PivotTable**. To make it **control multiple PivotTables & PivotCharts**:

1. Right-click the **Slicer** → Select **"Report Connections"** (or "PivotTable Connections").
2. **Check all PivotTables** that should be filtered by the slicer.
3. Click **OK**.

**📌 Step 5: Test the Slicer**

* Click on a **slicer button** (e.g., "Plumbing").
* Watch as **all linked PivotCharts & PivotTables update automatically!** 🎉

**🚀 Final Touches for the Dashboard**

✅ Place **slicers neatly on the dashboard** (e.g., left or top section).  
✅ Ensure **all charts update dynamically** when a slicer is clicked.  
✅ **Save the file** as .xlsx to retain slicer functionality.

**Your Interactive Dashboard is Ready! 🎉**

Now, your stakeholders can **filter & analyze** data easily.