Part_2

In [1]:
```
import pandas as pd
```

In [2]:
```
sales_target = pd.read_excel(r"C:\Users\PRANAV\OneDrive\Desktop\JAR\Sales_target_1.xlsx")
```

In [3]:
```
print(sales_target.head())
```

```
  Month of Order Date   Category  Target
0          2025-04-18  Furniture   10400
1          2025-05-18  Furniture   10500
2          2025-06-18  Furniture   10600
3          2025-07-18  Furniture   10800
4          2025-08-18  Furniture   10900
```

In [18]:
```
target_col = "Target"
```

In [13]:
```
month_col = "Month of Order Date"
category_col = "Category"
```

In [14]:
```
furniture_df = sales_target[sales_target[category_col].astype(str).str.lower().str.contains("furniture", na=F
```

In [15]:
```
furniture_df[month_col] = pd.to_datetime(furniture_df[month_col], errors="coerce")
```

In [16]:
```
furniture_df = furniture_df.sort_values(month_col)
```

In [19]:
```
furniture_df[target_col] = pd.to_numeric(furniture_df[target_col], errors="coerce")
furniture_df["pct_change"] = furniture_df[target_col].pct_change() * 100
furniture_df["significant_fluctuation"] = furniture_df["pct_change"].abs() > 20
```

In [20]:
```
print(furniture_df)
```

```
   Month of Order Date   Category  Target  pct_change  significant_fluctuation
9           2025-01-19  Furniture   11500         NaN                    False
10          2025-02-19  Furniture   11600    0.869565                    False
11          2025-03-19  Furniture   11800    1.724138                    False
0           2025-04-18  Furniture   10400  -11.864407                    False
1           2025-05-18  Furniture   10500    0.961538                    False
2           2025-06-18  Furniture   10600    0.952381                    False
3           2025-07-18  Furniture   10800    1.886792                    False
4           2025-08-18  Furniture   10900    0.925926                    False
5           2025-09-18  Furniture   11000    0.917431                    False
6           2025-10-18  Furniture   11100    0.909091                    False
7           2025-11-18  Furniture   11300    1.801802                    False
8           2025-12-18  Furniture   11400    0.884956                    False
```

In [23]:
```
from pathlib import Path
strategies = [
    "Smoothen target projections using a 3-month moving average to reduce volatility.",
    "Investigate months with large drops or spikes — align targets with seasonal demand patterns.",
    "Integrate past sales data to create data-driven, realistic monthly goals.",
    "Coordinate with marketing and supply chain to handle high-target months efficiently.",
    "Monitor variance between actual vs. target sales to adjust forecasting models regularly."
]

out_dir = Path(r"C:\Users\PRANAV\OneDrive\Desktop\JAR")

furniture_df.to_excel(out_dir / "Furniture_Target_Trend.xlsx", index=False)
pd.DataFrame({"Suggested_Strategies": strategies}).to_excel(out_dir / "Furniture_Target_Strategies.xlsx", ind

print("✅ Target Achievement Analysis complete!")
print(furniture_df[[month_col, target_col, 'pct_change', 'significant_fluctuation']])
print("\nFiles saved at:")
print(out_dir / "Furniture_Target_Trend.xlsx")
print(out_dir / "Furniture_Target_Strategies.xlsx")
```

```
✅ Target Achievement Analysis complete!
   Month of Order Date  Target  pct_change  significant_fluctuation
9           2025-01-19   11500         NaN                    False
10          2025-02-19   11600    0.869565                    False
11          2025-03-19   11800    1.724138                    False
0           2025-04-18   10400  -11.864407                    False
1           2025-05-18   10500    0.961538                    False
2           2025-06-18   10600    0.952381                    False
3           2025-07-18   10800    1.886792                    False
4           2025-08-18   10900    0.925926                    False
5           2025-09-18   11000    0.917431                    False
6           2025-10-18   11100    0.909091                    False
7           2025-11-18   11300    1.801802                    False
8           2025-12-18   11400    0.884956                    False

Files saved at:
C:\Users\PRANAV\OneDrive\Desktop\JAR\Furniture_Target_Trend.xlsx
C:\Users\PRANAV\OneDrive\Desktop\JAR\Furniture_Target_Strategies.xlsx
```

In [ ]: