**Power BI Case Study: Inventory Analysis for WarmeHands Incorporated**

**Description**

This case study demonstrates the application of Power BI for inventory analysis in a fictional company, WarmeHands Incorporated. As a consultant, you are tasked with analyzing inventory data and recommending optimal inventory levels for specific items.

**Data and Methodology**

* **Fictitious Dataset:** Inventory data from WarmeHands Incorporated was utilized for analysis.
* **Data Cleaning and Integration:** The data was cleaned and merged for a centralized and reliable source.
* **Snowflake Model Design:** A snowflake schema was implemented to optimize data organization and performance.
* **DAX Calculations:** Calculated columns and tables were created using DAX formulas for detailed analysis.

**Objectives**

WarmeHands Incorporated sought to:

* Identify the most suitable items for inventory restocking or increase.
* Understand the influence of product categories and countries on inventory management.

These objectives were addressed through analysis by category and country.

**Key Metrics**

* COGS (Cost of Goods Sold)
* Gross Profit
* Revenue
* Inventory Turnover
* Average Inventory
* ABC Classification

**Key Insights**

* **Product Analysis:**
  + Decoration and Jewelry categories had the highest average COGS per item (around $5).
  + Home & Accessories achieved the largest profit in 2020 ($110,000).
  + "Grow a Flytrap or Sunflower" was a top seller (16,000 units sold) representing 10.85% of total inventory in 2021.
  + Advertisement had the highest cost across all categories.
  + Only Toys & Edibles experienced a sales increase (7%) in 2021.
  + Decorative, Toy & Edibles, and Home Accessory sales peaked in Q4 and early months.
  + Office & School had the highest average Inventory Turnover (1.45).
  + Jewelry had the lowest average Profit margin (36%).
* **Item-Level Analysis (Examples):**
  + "Grow a Flytrap" had high sales volume.
  + "Doughnut Lip Gloss" had a faster inventory turnover (sells faster).
  + "Set of 6 Soldier Skittles" saw the highest sales increase from 2020 to 2021.
  + All three items belonged to ABC Class A, indicating high revenue contribution despite their differences.

**Conclusion**

This Power BI case study demonstrates valuable insights gained through comprehensive inventory analysis. WarmeHands Incorporated can leverage these insights to optimize inventory management by prioritizing high-demand items, identifying potential overstock, and understanding seasonal trends. This project exemplifies the effectiveness of Power BI in data visualization and exploration for informed business decisions.