**Project Title:** Analyzing LEGO Set Metrics

**Project Goal:** The goal of this project is to analyze the extensive history of LEGO sets, covering themes, piece counts, recommended age groups, and retail prices across five decades. The aim is to present valuable insights in a clear and informative report, contributing analyses that deepen our understanding of the long-lasting popularity and evolution of LEGO sets.

The following steps were undertaken to achieve this goal:

**The project steps included:**

1. **Data Acquisition:** Started the project by getting the dataset from the Maven Analytics website, setting the stage for a thorough analysis of LEGO set data.
2. **Data Connection**: Imported the dataset into Power BI, establishing a connection for subsequent exploratory efforts.
3. **Exploratory Data Analysis**: Applied Exploratory Data Analysis techniques in the Query Editor to gain insights into the data quality, structure, and distribution.
4. **Data Cleaning:** Addressed missing values**.** Certain columns presented a challenge due to a high percentage of missing values, especially in the earlier years. This impacted the analysis, particularly in examining price trends due to the limited pricing data for those years.
5. **Comprehensive Analysis**:Utilized Data Analysis Expressions (DAX) measuresto generate new data insights and enhance analytical capabilities.
6. **Report Design:** Developed a comprehensive three-tab report to convey vital insights "LEGO Set Overview", "LEGO Set Price Analysis” and “Key Insights”.

Key Findings:

1. **Theme Evolution:** Over the span of 53 years, the number of LEGO themes has grown significantly, surging from 8 in 1970 to 34 in 2022. This expansion is mirrored in the increase of sets from 41 to 967. Notably, the top 5 themes by set count are Gear, Duplo, Star Wars, City, and Collectable Minifigures. Duplo and Gear have stood the test of time with 51 and 39 years on the market. City and Collectable Minifigures exhibit high counts despite shorter market durations (18 and 13 years, respectively). This likely signals their enduring popularity, driving continuous releases. However, a more detailed analysis is needed to uncover the underlying trends.Top of Form
2. **Age Analysis Challenges:** Challenges in age data availability, particularly before 1975 and in later years, result in numerous gaps, affecting the accuracy of trend analysis. The dataset's overall average minimum age is 6.6, with a notable shift observed from 7.1 in 2019 to 8.1 in 2022. This shift likely suggests a trend towards designing products for older age groups, specifically 7-10 years old.
3. **Themes with Exceptional Features:** Certain themes boast remarkably high piece counts, ranging from 6-12K, including Art, Legend of Chima, Icons, Star Wars, and Harry Potter. Star Wars and Icons also feature highly-priced sets at $850 and $680, respectively.
4. **Price Data Limitations:** Limitations in price data availability before 1991, in specific years like 1994-95, and later years until 2004 introduce challenges to accurate trend analysis. The dataset's overall median price is $19.99, with an average of $37.53. Outliers, particularly in Licensed, Educational, Model Making, and Technical Categories, significantly impact the average price. In 2022, the Median Price stands at $29.9, with the Average Price reaching $52.6 in comparison.
5. **Price Trends in Top Themes:** Over the last decade, the average prices of top themes have shown a consistent upward trend. Duplo and Star Wars prices nearly doubled, while Collectible Minifigures experienced a substantial increase from $3.99 in 2017 to $14.35 in 2022.
6. **Expensive Theme Groups:** Among theme groups, the Licensed group stands out with the most expensive sets, followed by Educational, Model Making, and Technical. The price range spans from $500 to $850. While average group prices are generally lower, the Educational Group's average price is notable at $172.

In summary, the analysis of LEGO data offers valuable insights into the brand's evolution, age dynamics, and pricing trends. The enduring popularity of certain themes and the consistent rise in prices highlight significant aspects of the LEGO market. These findings serve as a useful guide for future considerations and decision-making.