

# AIRCRAFT SAFETY ANALYSIS



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# Business Understanding

- The company plans to enter the aviation industry.
- Aircraft accidents pose financial, legal, and safety risks.
- Management requires data-driven insights before investing.
- Historical aviation accident data is used to assess risk.

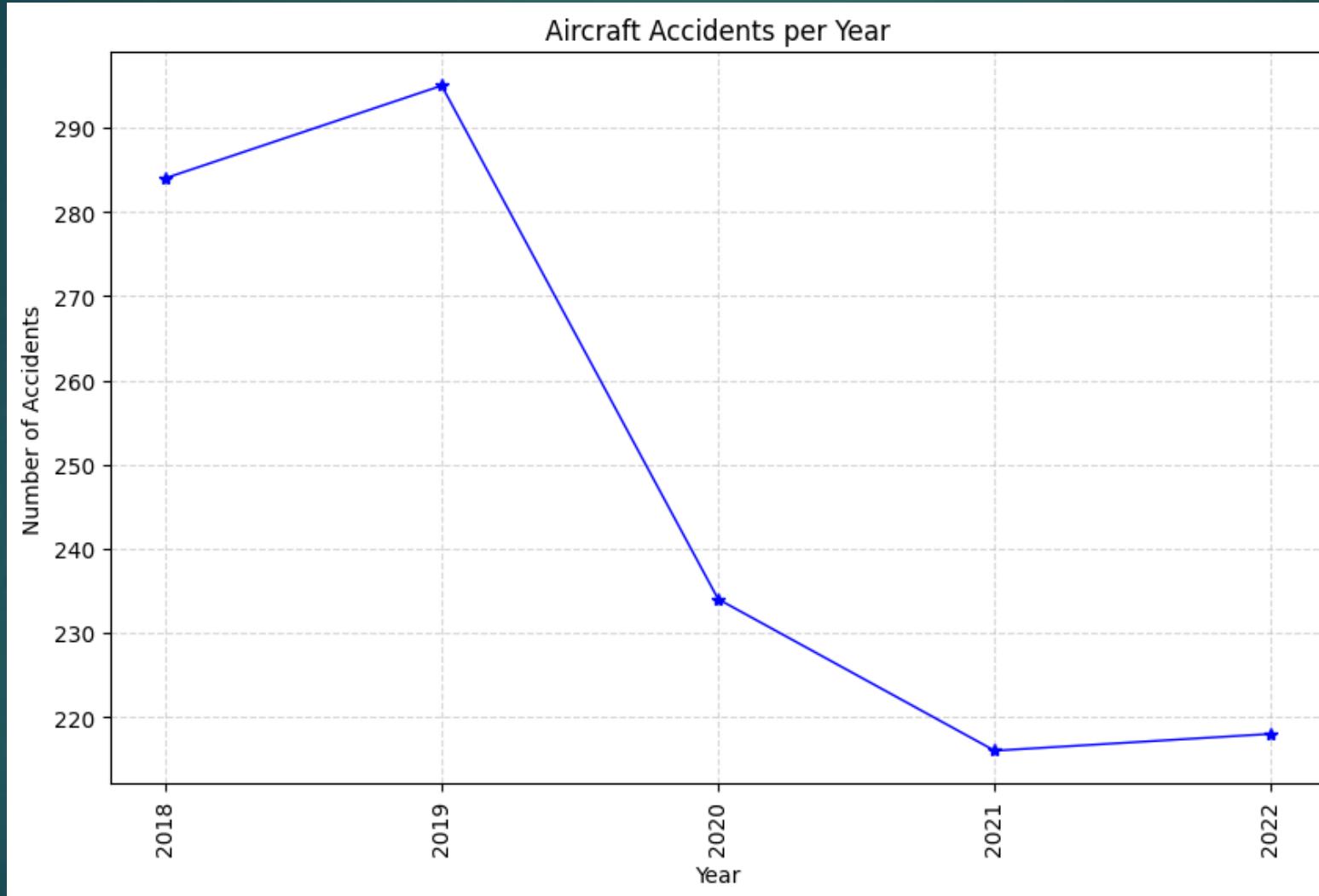
# OBJECTIVES OF THE PROJECT

- ▶ To analyze aircraft accident trends over time.
- ▶ To identify aircraft types with the highest accidents rates.
- ▶ .To evaluate which type of damage level has the most fatalities.
- ▶ To analyze which operator have the highest accidents.
- ▶ To generate insights and recommendations that management can use to guide aircraft purchasing decisions

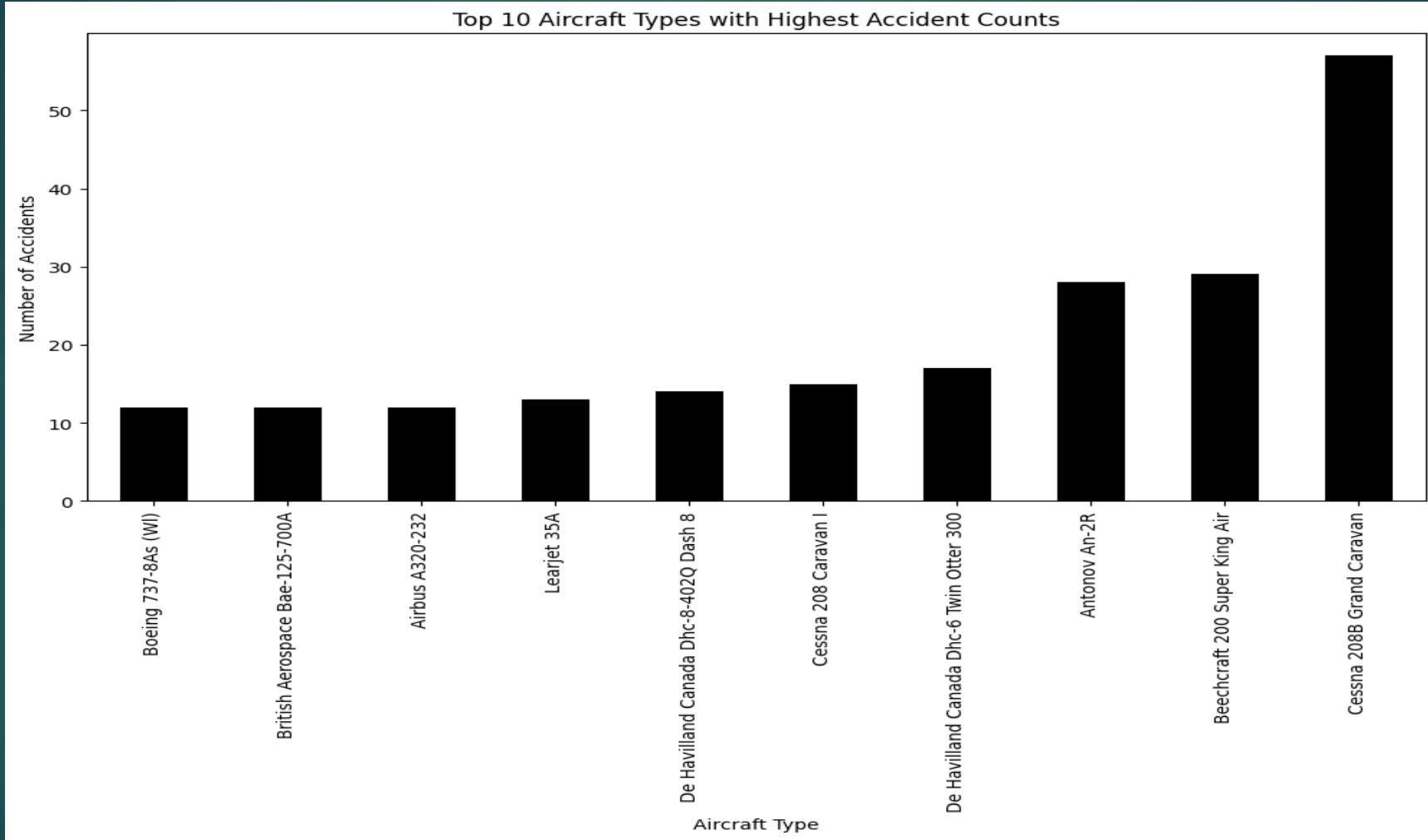
# DATA PREPARATION

- Removed missing and invalid values.
- Standardized aircraft and operator names.
- Converted accident date to datetime format.
- Created a year column.
- Exported cleaned dataset to for Tableua

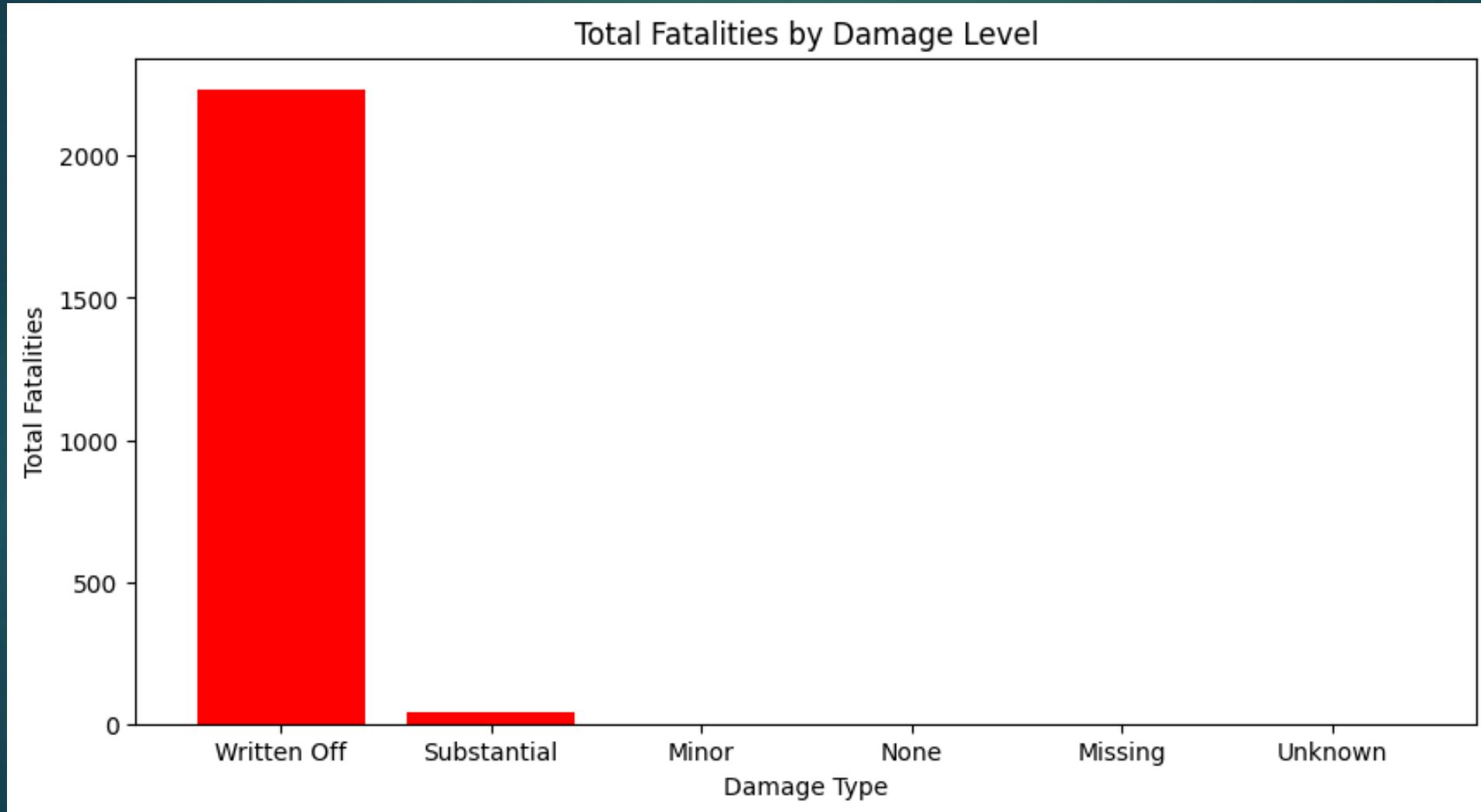
# Accident Trends Over Time



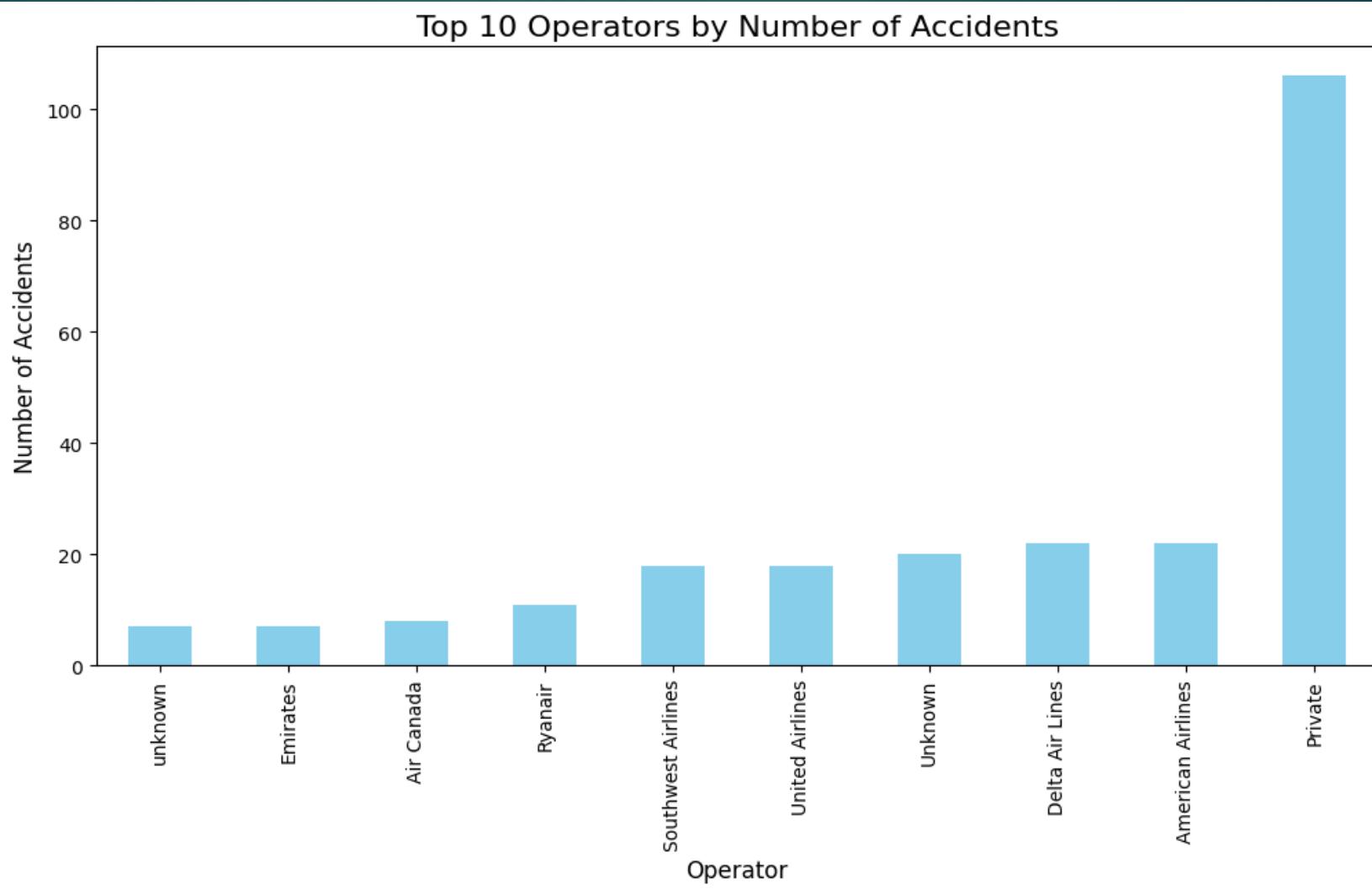
# Aircraft with Most Accidents Top 10



# Fatalities and damage severity



# Accidents by Operator



# Findings

- ▶ 1.The highest number of accidents were in 2019, followed by 2018.Accidents dropped significantly in 2020-2021,due to COVID-19 lockdowns, with a slight increase in 2022 as aviation operations resumed.
- ▶ 2.The Cessna 208B Grand Caravan experienced most accidents, followed by Beechcraft 200 Super King Air, Antonov An-2R, De Havilland Canada DHC-6 Twin Otter 300, and Cessna 208 Caravan I.
- ▶ 3.Aircraft classified as ‘written off’ show the highest fatality rates, while accidents with ‘substantial’ damage resulted in relatively few fatalities.
- ▶ 4.Private operators experienced the highest number of accidents, highlighting a potential area for strict safety oversight.

# Recommendations

- Avoid aircraft models associated with high fatality rates.
- Prefer aircraft with low severity accident history.
- Implement strict safety oversight for private operations.
- Use historical data in all procurement decisions.

# THE END

► THANK YOU Q& A SECTION