# Explore

Problem Statement

The project uses data from the African insurance industry to understand how the industry can grow. I'm looking at where accidents happen most, which demographics are involved, seasonal trends, types of incidents, and fraud reports. By analyzing these factors, I aim to find opportunities to expand the insurance market in Africa.

#### Preprocessing Steps:

1. **Handling Missing Values:**
   * I addressed missing data by imputing values where possible. For fields with substantial missing information, I considered removing those records to maintain data integrity.
2. **Feature Engineering - Age Group:**
   * As part of preprocessing, I created an "age group" field based on age information. This categorization facilitated demographic analysis by grouping individuals into meaningful age brackets.

With the cleaned and processed data, I proceeded to analyse patterns and insights related to accident locations, demographic involvement, seasonal variations, incident types, and fraud reports.

I analyzed the data to find out:

* Where accidents happen the most across different cities and regions.
* Which demographics (like age groups and genders) are most involved in accidents.
* When accidents are more likely to occur during different seasons.
* What types of incidents are reported most frequently.
* Patterns and trends in fraud reports to improve risk management.

# Generate

**Power BI for Visualisation 😊**

Using Power BI, I created interactive dashboards to visualize my findings:

* **Geographical Insights:** Maps showing hotspots of accidents and incidents.
* **Demographic Analysis:** Charts and graphs comparing age groups and genders involved in accidents.
* **Seasonal Trends:** Visualizations showing when accidents peak during different seasons.
* **Incident Types:** Breakdowns of different types of incidents reported.
* **Fraud Detection:** Analysis of fraud patterns to improve detection and prevention strategies.

# Apply

**Strategic Insights**

From my analysis, I learned:

* Opportunities to expand insurance services in underserved regions based on incident data.
* Which demographics may benefit most from tailored insurance products and marketing.
* How seasonal variations impact insurance claims and product demand.
* Insights into fraud patterns to enhance security measures and build customer trust.

**Recommendations**

Based on my findings, I recommend:

* Developing targeted insurance products for high-risk areas and demographics.
* Adjusting marketing strategies to align with seasonal trends in insurance demand.
* Strengthening fraud prevention measures to protect customers and improve operational efficiency.

# Derive

**Impact and Conclusion**

This project shows how data analysis can help the African insurance industry grow by understanding accident patterns, demographics, seasonal influences, incident types, and fraud risks. By using Jupyter and Power BI, I made complex data easier to understand and found ways to make insurance services better for everyone.

**Recommendations**

I would recommend:

* Explore more and bigger insurance data sources to improve predictive models for growing the industry.
* Collaborate with insurance companies to implement recommended strategies and measure their impact on industry growth.