CAPSTONE 2024:: EXPENSE CLAIM ANOMALIES DETECTION

ABOUT

Grab is Southeast Asia's leading superapp. It provides everyday services such as Deliveries, Mobility, Financial Services, and More.

Through rigorous analysis and advanced methodologies, we detect anomalies within employees' expense claims data, identifying irregularities that may pose risks to the company's financial integrity. Our ongoing efforts aim to refine and optimize the system to enhance financial accuracy and organizational trust..

BUSINESS CHALLENGE

While the Internal Audit diligently reviews expense claims as part of the audit plan, the process remains cyclical and manual. Validating transactions can be laborious, given the high volume of activity and diverse categories involved. Consequently, continuous risk monitoring, incorporating real-time tracking, may be constrained. This increases the risk of errors, fraud, or non-compliance slipping through the cracks.

PROBLEM STATEMENT

As the traditional review process for reimbursed expenses proves labour-intensive, our vision is to **develop an efficient, automated** solution. This aims to reduce manual dependencies and **enhance the effectiveness of anomaly detection.**

APPROACH

1. **DATA CLEANING**
   - Removing irrelevant and incomplete columns

2. **DATA PROCESSING**
   - Running multiple tests based on focus areas to label data and run Unsupervised learning (Clustering) to identify anomalies.

3. **VISUALISATION**
   - Utilising Power BI to construct dashboards that facilitate comprehensive insights, encompassing both broad overviews and specifics.

FOCUS AREAS

1. Extension of work trips over weekends & charging the company for the hotel stays
2. Employees claiming airfare/hotel expenses under Concur
3. Trend of employees exceeding & maximising meal claims
4. Detecting suspicious transaction amounts
5. Detecting anomalies in receipt numbers, flagging possible duplicate claims, and miscategorisation of expenses
6. Employees overspending on a particular Vendor

INSIGHTS

Overview - Dashboard provides insights into employees who may have violated the company's expense claims policy, offering a tool for identifying potential instances of employee abuse within the claims system

Insight About Individual Employee - Obtain valuable insights and zoom in on employees with high risk of expense claim fraud, providing information on specific areas where breaches have occurred.
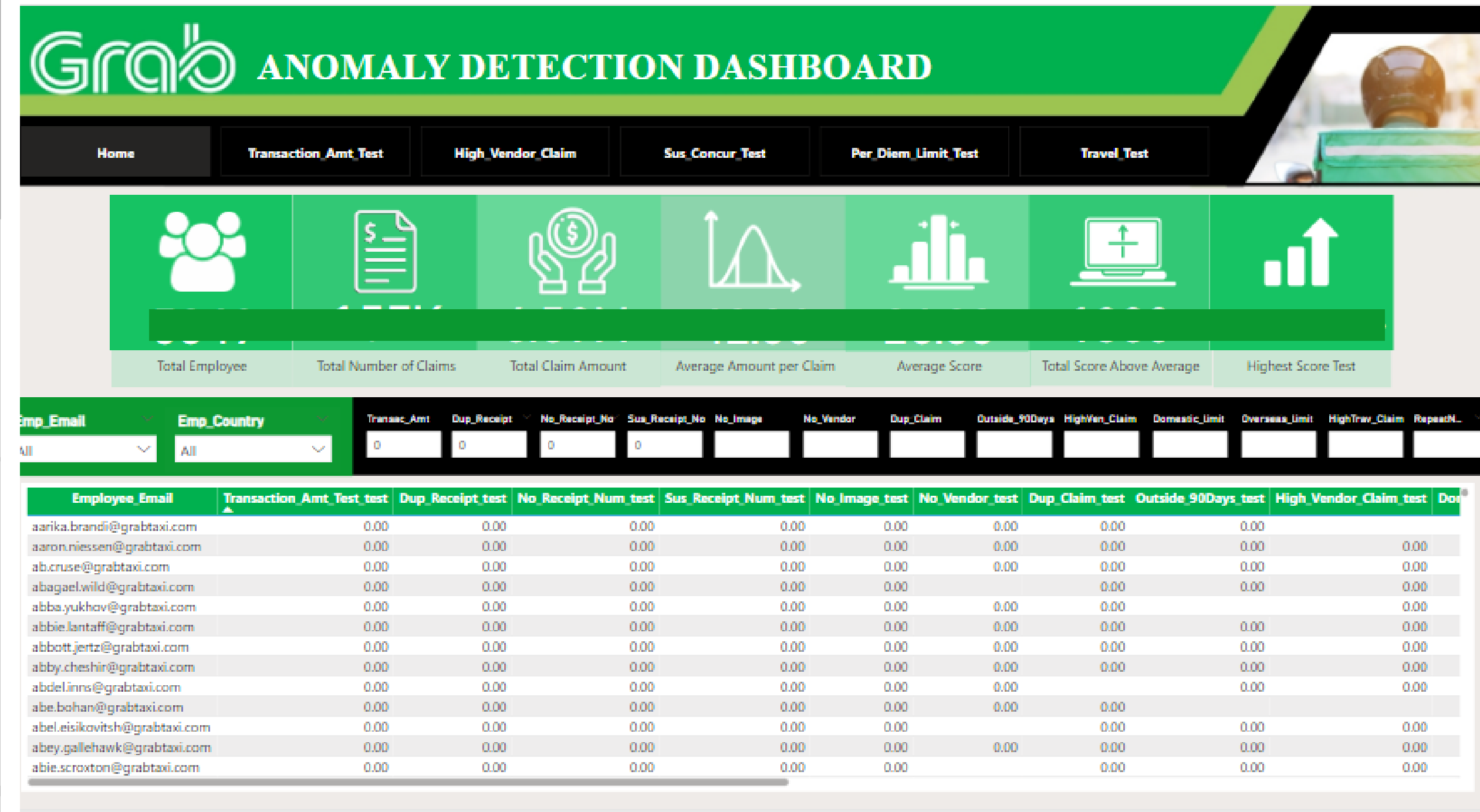
Insight About Branch Claims - Examine branch-specific Trends for Suspicious claims

Insight About High Risk Areas - Identify key factors for the company's attention

ILLUSTRATIVE DASHBOARDS

These are sample dashboards from our models. All visuals and charts shown here are hypothetical and based on proxy data.
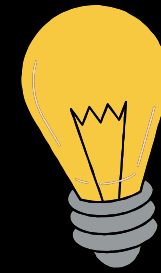

CONCLUSION

Our project addresses the challenge of manual and cyclical expense audits by implementing advanced analytics and automation. With a focus on enhancing efficiency and effectiveness, we target various aspects of expense anomalies through thorough data analysis and innovative techniques. Through streamlined data processing and utilisation of machine learning, we aim to identify irregularities and trends accurately. The insights generated from our approach enable proactive decision-making and focused attention on high-risk areas, contributing to improved compliance and operational efficiency.

TEAM

- Chen Wenqie
- Choy Li Teng
- Khor Sin Ying
- Ruth Priya Ramani
- Serene Lim Yin Cheng
- Woo Hui En