OneMagnify - Wayne State University
Team 2

Web Claims and Call Metrics Dashboard

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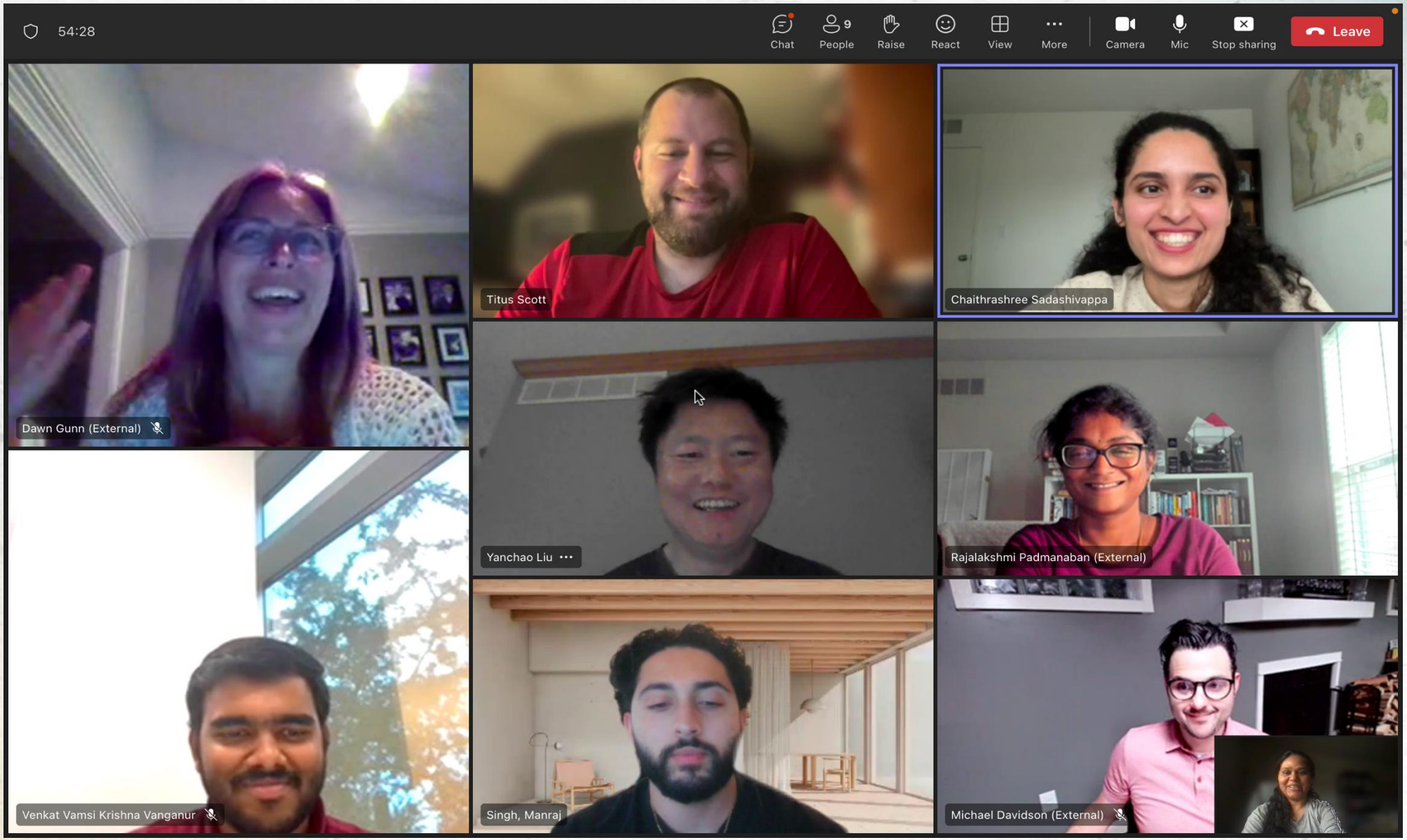
Final Presentation – Jul 29, 2023

OM – WSU Team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Raise
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Dawn Gunn (External)
Titus Scott
Chaithrashree Sadashivappa
Yanchao Liu
Rajalakshmi Padmanaban (External)
Venkat Vamsi Krishna Vanganur
Singh, Manraj
Michael Davidson (External)

Business Case

Ability to leverage Snowflake technology and use Streamlit to create interactive dashboards

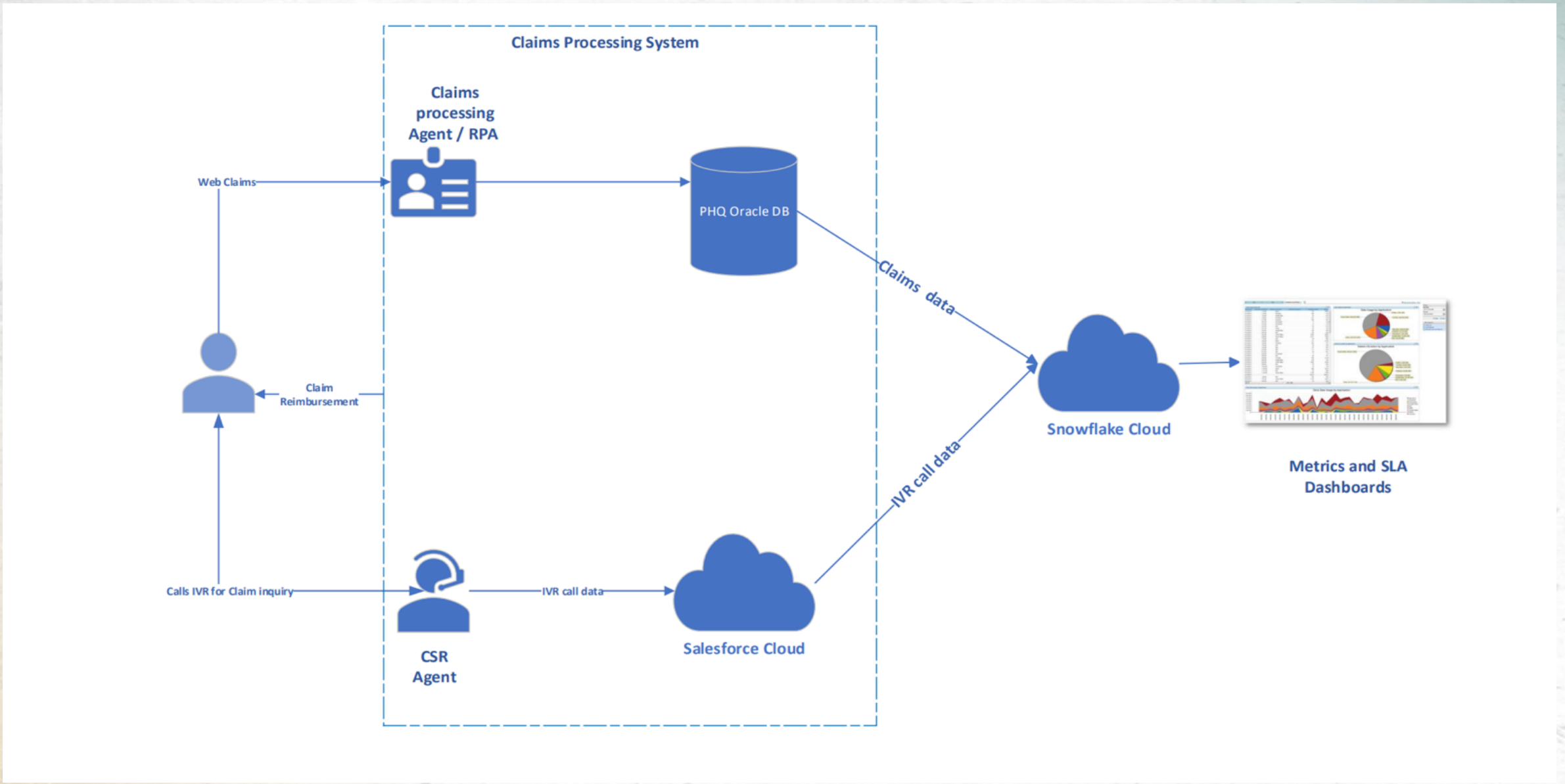
Ability to integrate PHQ SLA claims data and Salesforce Case data and create views

Ability to monitor compliance with agreed upon service levels (SLA) between OneMagnify and Clients

Ability to monitor KPIs and react to increase call/claim volume

Ability to accurately track and forecast call/document volume in order to improve and enhance PHQ processes, performance, and optimize staffing levels

High-Level Data Flow diagram



Technologies/Tools

Team upskilled on Snowflake

- OM provided training
- Created tables and imported data from csv files

SnowSight was initially used to create dashboards

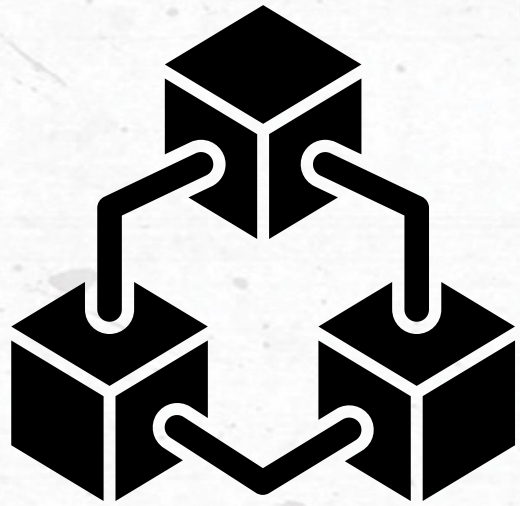
- Draft dashboards for analysis

Tableau

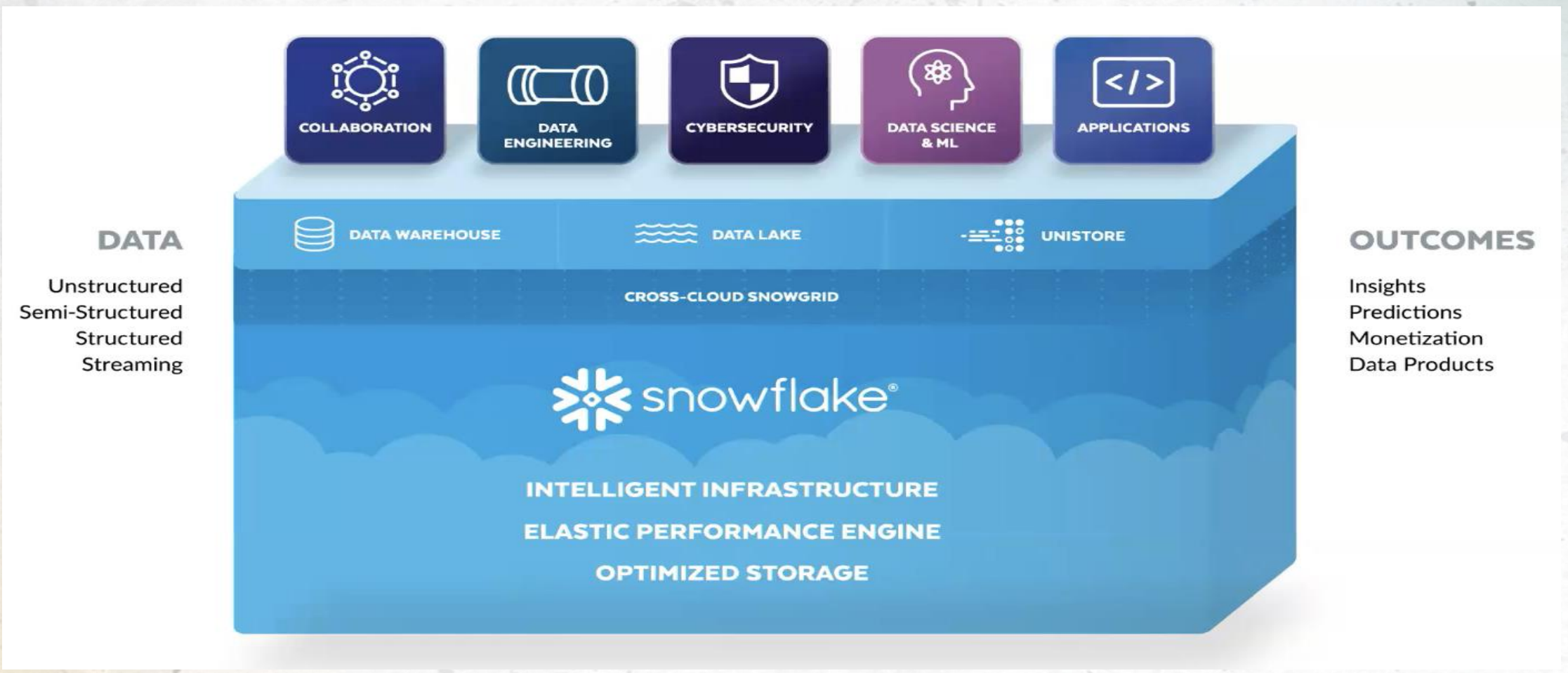
- Testing compatibility with Snowflake data

Team upskilled on Streamlit app

Connected dynamically with Snowflake to create interactive dashboard



Snowflake Architecture



Streamlit

Simplicity & Ease of Use: Rapid prototyping with minimal effort.

Native Python Environment: Seamless integration with Python data analysis, ML, and visualization code.

Interactive Widgets: Real-time data interactivity with various widgets.

Data Visualization Integration: Incorporate libraries like Plotly, Matplotlib, and Altair.

Fast Iteration: Live reloading feature for accelerated development.

Sharing & Deployment: Easy app sharing and deployment on platforms like Streamlit Shari ng, Heroku, and AWS.

Open Source & Extensibility: Integrated with Data Science tools.

Streamlit

Data Import and Gap Analysis

Imported the CSV files extracted from Salesforce database

Handled file volume issue

Handled Data issues in import

Analyzed the data in Claims and Salesforce data

Claim status definitions

Program sync between Claims and Case tables

Database views were created based on the project team's need

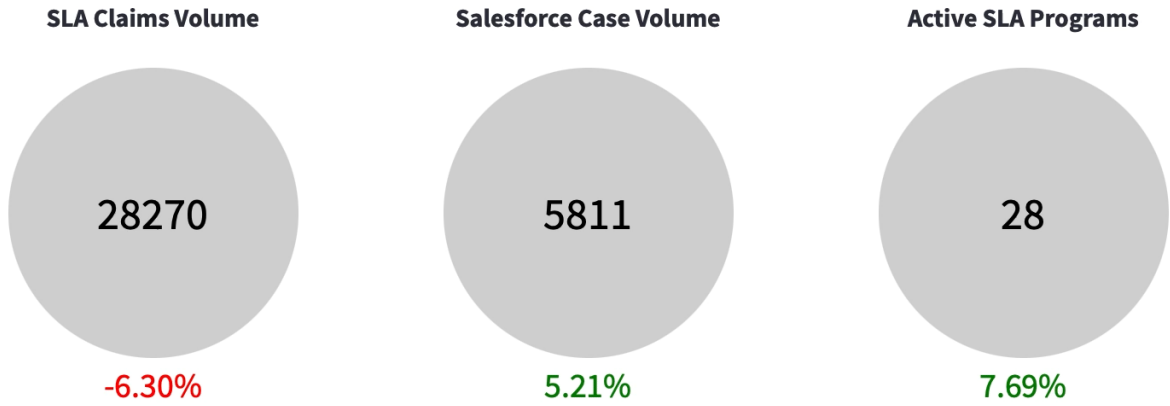
Dashboard

1. **Home page**
    I. Month on Month Trend
    II. Top 5 SLA programs with highest Claim volume
    III. PHQ claims past and forecasted trend
    IV. Top 5 Salesforce Cases with highest case volume
    V. Salesforce Cases past and forecasted trend
2. **SLA claims Dashboard**
3. **Case Dashboard**
4. **Voice Call Dashboard**
5. **Agent Performance Dashboard**
    I. Individual agent performance
    II. Comparative agent performance
6. **SLA claim status**
7. **Proof of Concept**
    I. Time travel
    II. Salesforce to Snowflake data flow

Home Page
SLA Dashboard
Case Dashboard
Voice call Dashboard
Agent performance dashboard
SLA Claim Status
Proof of Concept

WEB CLAIM AND CALL METRIC DASHBOARD - HOMEPAGE

Month on Month volume and change



TOP 5 Programs with Highest Claim Volume Compared with previous year

select the year to compare

2023

Year 2023

PROGRAM_NAME	CLAIM_COUNT	CASE_COUNT
10632-COVP	67,866	0
10029-FCSD	43,844	0
10625	15,594	0
10648-Ford Pro COVP	14,593	873
10031-College ID.me	14,559	0

Year 2022

PROGRAM_NAME	CLAIM_COUNT	CASE_COUNT
10632-COVP	416,862	0
10008-ROVP	213,417	0
10029-FCSD	75,861	0
10017-MILITARY EXCEPTION	36,330	10
10025-FIRSTRESPONDER	22,757	6

POC – Salesforce to Snowflake connectivity

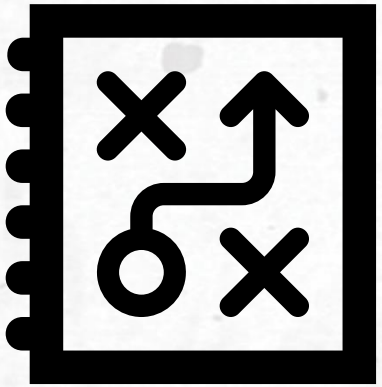
- Explored different options of setting up connection between salesforce and snowflake.
- **Option1**: Using Airbyte middleware to create a data pipeline between salesforce and snowflake to sync from SFDC to Snowflake in batch mode.(Min frequency : every 5 min)
- Set up Oauth security integration in snowflake to allow Oauth authentication from other systems. This is supported only in Interactive flow.
- **Option 2**: Explored options to authenticate from salesforce to snowflake directly and submitted results and issues in POC.
- Set up External Oauth security integration in snowflake for Azure AD.
- **Option 3:** Explored using Microsoft Azure AD to authenticate into snowflake from salesforce and submitted results and issues in POC.
- Identified which settings from snowflake are stopping us in connecting these two systems

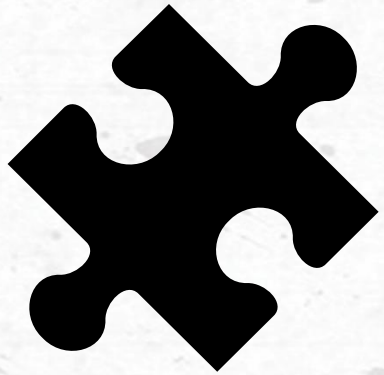
Accomplishments

1. **Streamlit & Snowflake**: Developed interactive dashboards.
2. **SSO Authentication**: Established secure connectivity from IDE to Snowflake.
3. **SLA Compliance**: Created visuals for monitoring.
4. **Claims & Cases**: Built dashboards for past volume and forecast analysis.
5. **Performance Assessment**: Developed visuals for individual and comparative agent performance.
6. **POC Development**: Created a POC for data extraction from Salesforce to Snowflake.
7. **Data Analysis**: Conducted detailed analysis to identify data issues in production.

Challenges

Learning Curve	Snowflake to Python IDE	Data import from Salesforce to Snowflake	4. Data mapping issues
• Team was new to Snowflake and Streamlit	• Team was able to establish SSO authenticated connectivity after trial and error	• Dealt with data issues and file size issues	• Program code mapping between Claims and cases





Recommendations

Airbyte middleware system to periodically load Salesforce data into Snowflake.

Data discrepancies fix (table had different values indicating same state – MI and Michigan)

Based on data analysis, the time travel feature (Data retention) may not be needed for Case /claim table.

However, if this feature must be applied, the attribute should be set during creation of the table, or it must be altered to add this property.

As part of this dashboard creation, the queries are fired on the go. However, it would be best to create summary tables and have nightly jobs populate these tables with the stats needed for the dashboards, to improve performance.

Lessons Learned

- Experience and proficiency in working with Snowflake, Snowsight, and Streamlit
- Importance of simple and clear Data Visualization
- Methods to deal with large data and the challenges of data cleaning and preparation
- Importance of continuous feedback and iteration
- Possible ways of connecting and importing data from Salesforce to Snowflake
- Time travel feature of Snowflake

Thank You

Best Practices

1

Weekly status reports in confluence

- Tasks completed
- Tasks planned
- Queries/Risks

2

Query log in Confluence

3

Trello – Agile task board

- WSR internal tracking for activities