

Presented By: HR Management Team



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MADT

Tech Recruitment Company

MADT 8102 : Seminar in Advanced Analytics System

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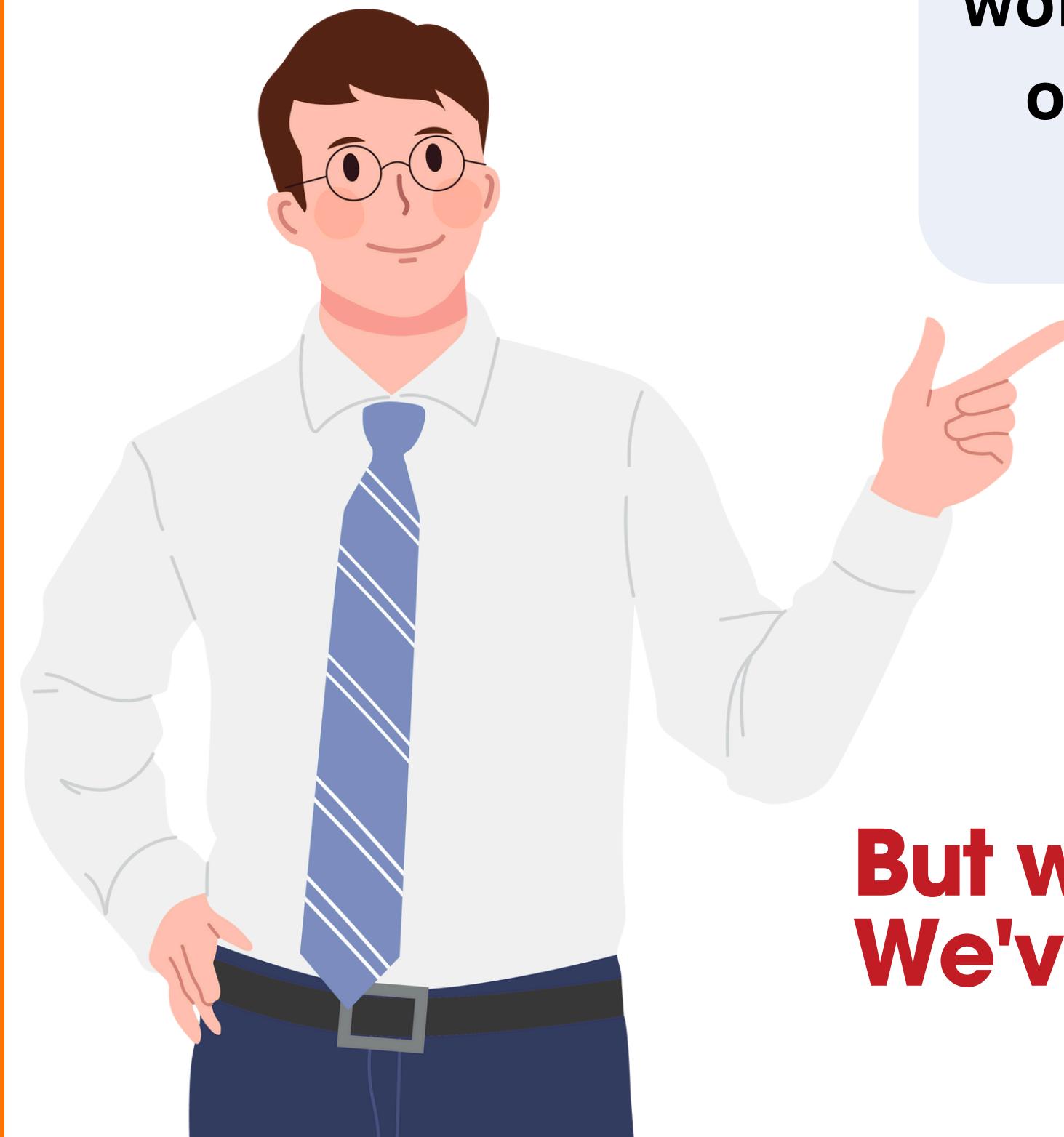


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Company Introduction

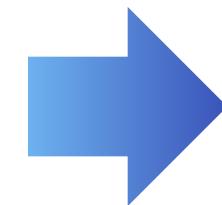
Tech recruiting company



“We are tech recruitment company which works on behalf of an organization to help fill open positions with qualified candidates, including sourcing”

**But wait!
We've got a little obstacle to tackle . . .**

Business Problem



Affected



Slower process



Missed hiring deadlines



Potential client dissatisfaction



Competitive advantage

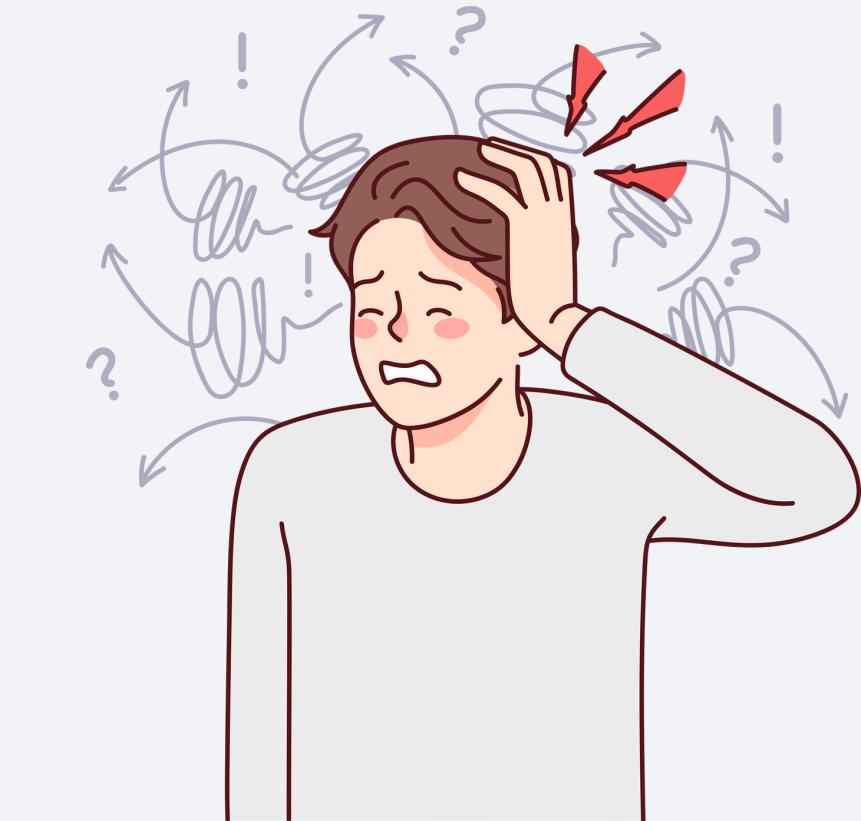
Reasons



Work Overload

Lack of visibility in task distribution

Bottlenecks from poor allocation



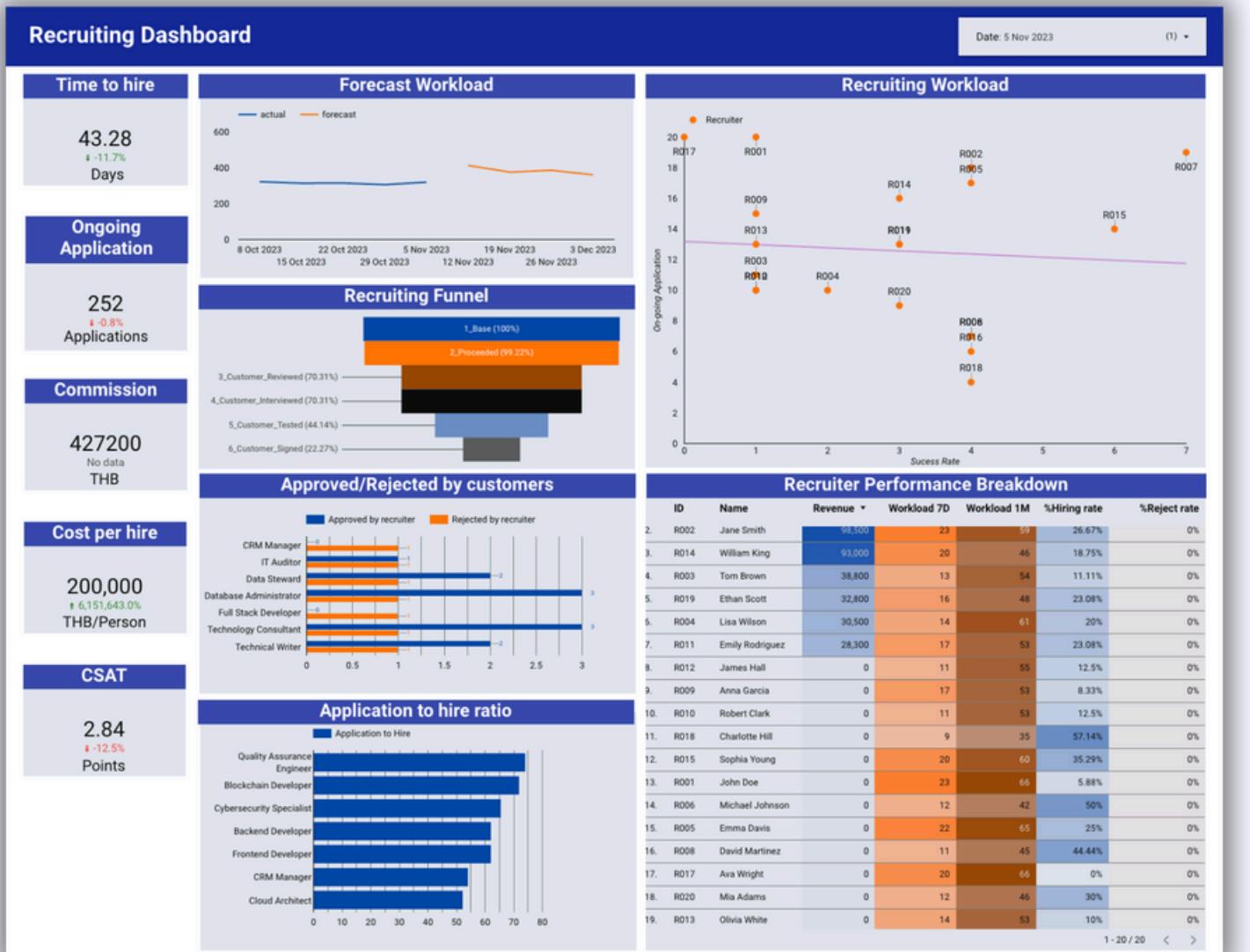
Recruiter Inefficiency

Frequent candidate mismatches

Low success/approval rates

Solution to Action

Dashboard



Enables efficient monitoring and management of team workload and allocate task effectively

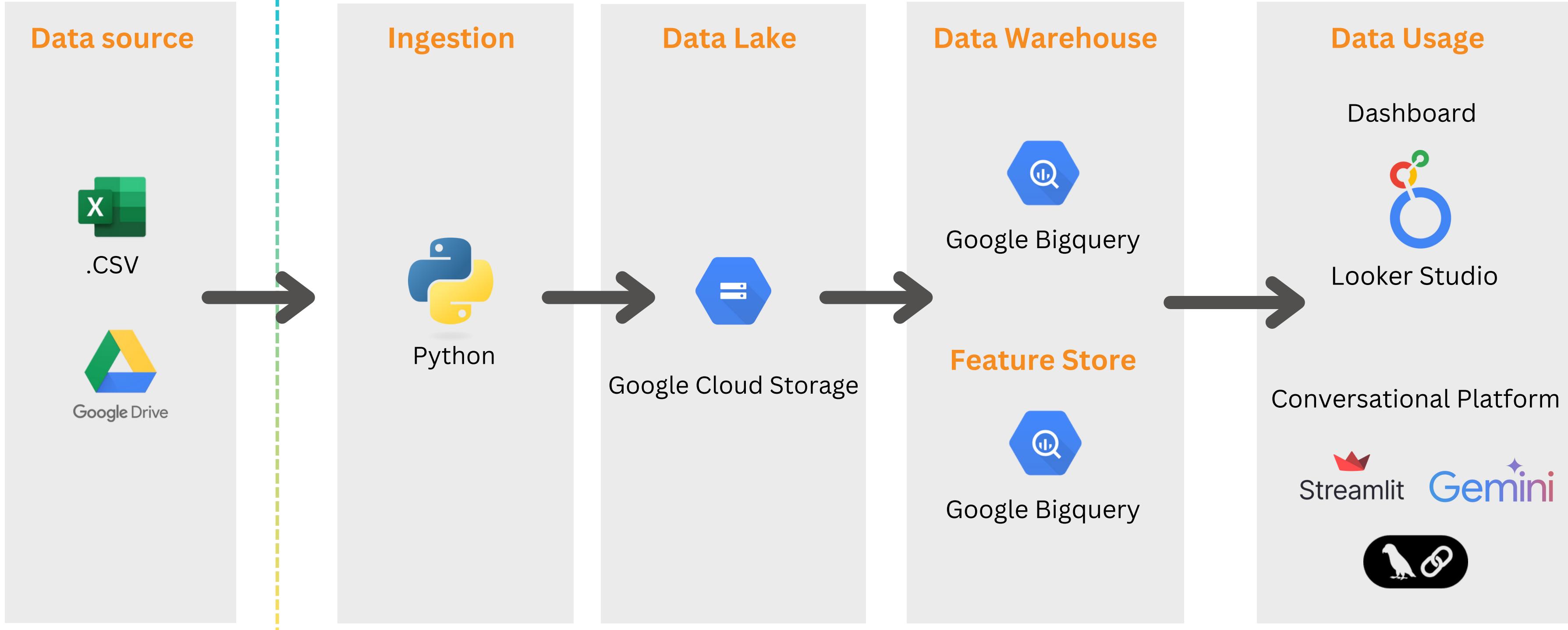
Chatbot

This chatbot interface allows users to interact with a Gemini model for candidate matching. It includes a message input field, a sidebar for assignment and candidate matching, and a history of interactions:

- User asks about a candidate's process status.
- Bot responds with the status of 184 candidates.
- User asks for average TOEIC scores.
- Bot provides the average score (687.18).
- User asks for the highest TOEIC score.
- Bot identifies Luis Frederick with a score of 990.
- User asks for Luis Frederick's current status.
- Bot replies that Luis Frederick is working at a company.
- User asks for Luis Frederick's contact information.
- Bot provides email (luis.frederick@example.com) and phone (080-3643-5510).
- User asks for Luis Frederick's job title.
- Bot confirms Luis Frederick's job title is Technology Consultant.

Assists in matching candidates to the right jobs and improving efficiency

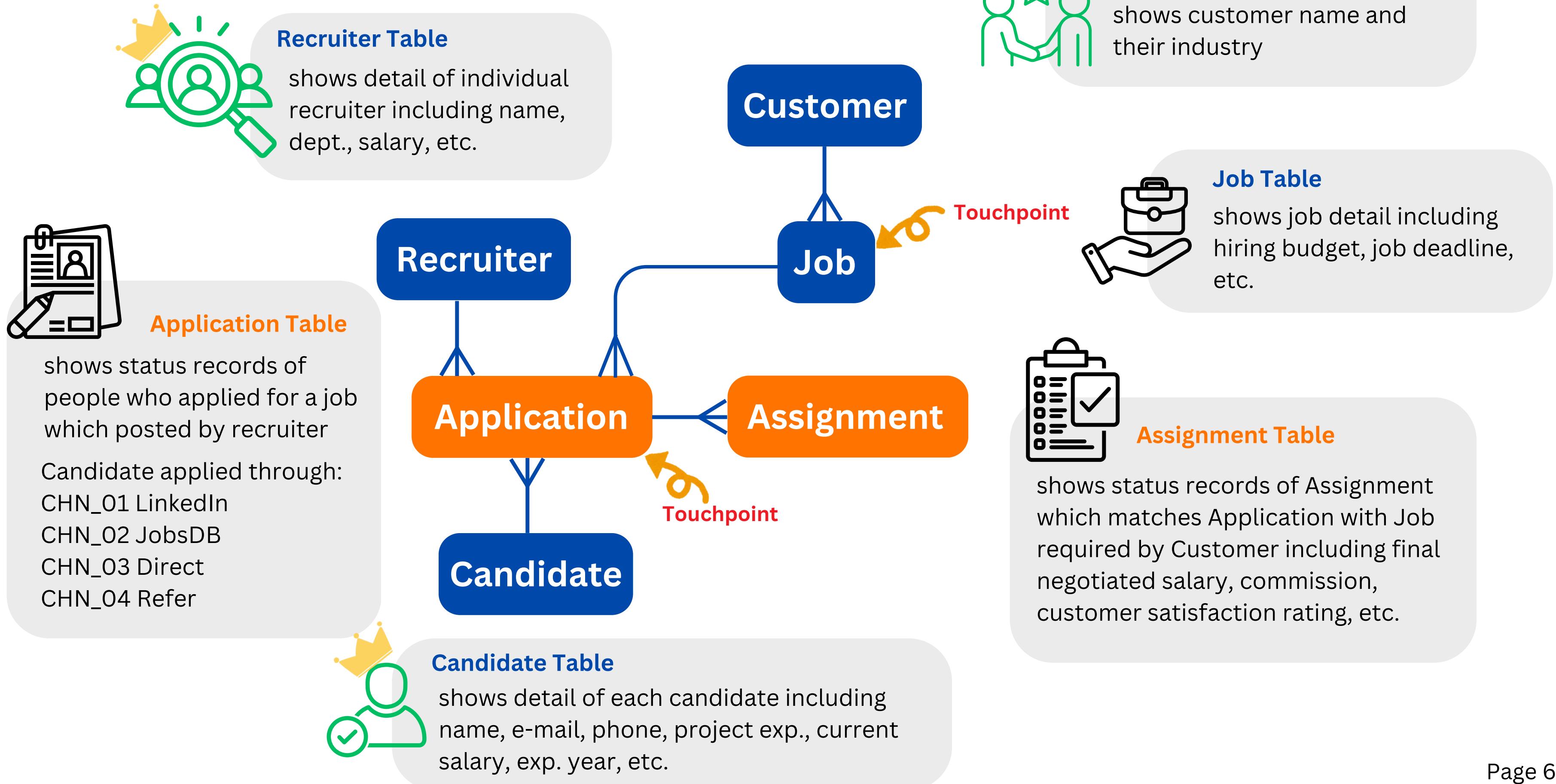
Platform Architecture



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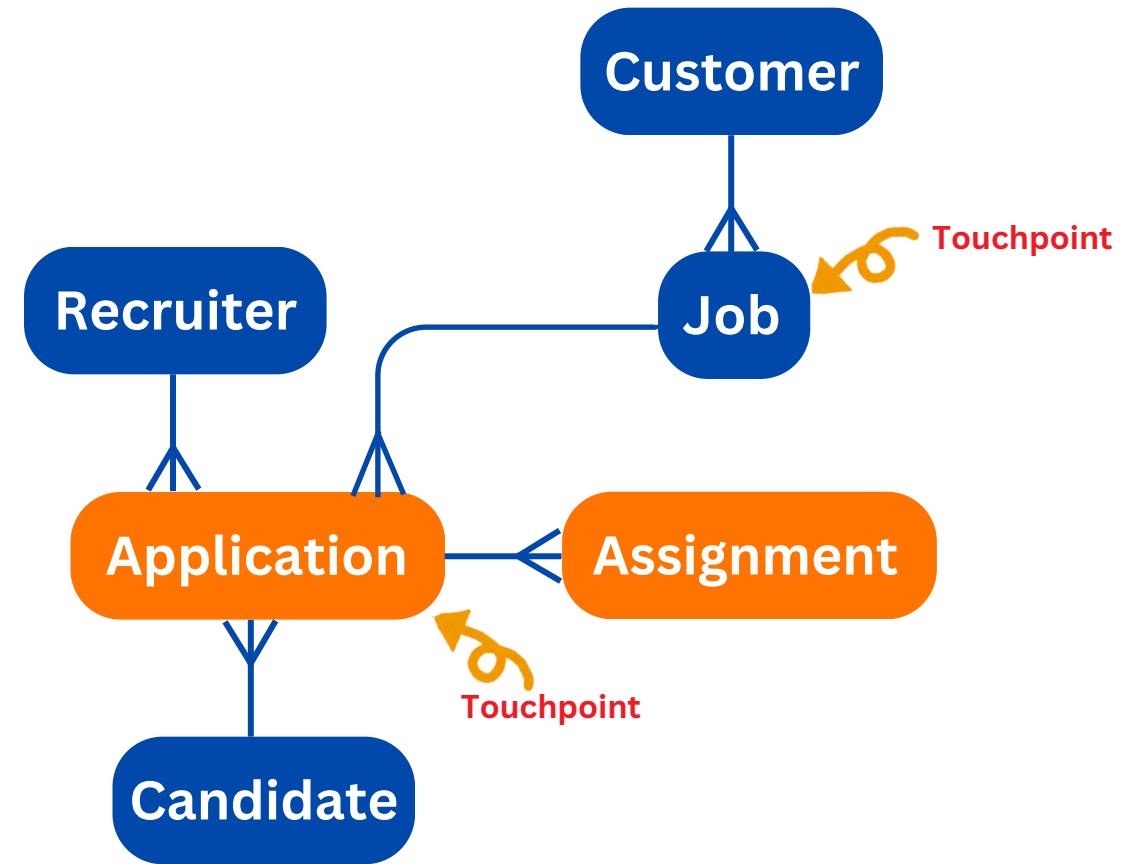
Data Source

Data Source



Data Source

Mockup Data: Main Tables



Application	Type	Key
appli_id	String	PK
job_id	String	FK
rec_id	String	FK
cust_id	String	FK
data_date	Datetime	
status_id	String	FK
can_id	String	FK
channel_id	String	FK
expected_sar	Integer	
cv_location	Integer	

Candidate	Type	Key
can_id	String	PK
name	String	
last_name	String	
phone	String	
email	String	
current_pos_id	String	
experience_year	String	
current_sar	Integer	
toeic_score	Integer	
project_exp	String	
dl_data_dt	String	

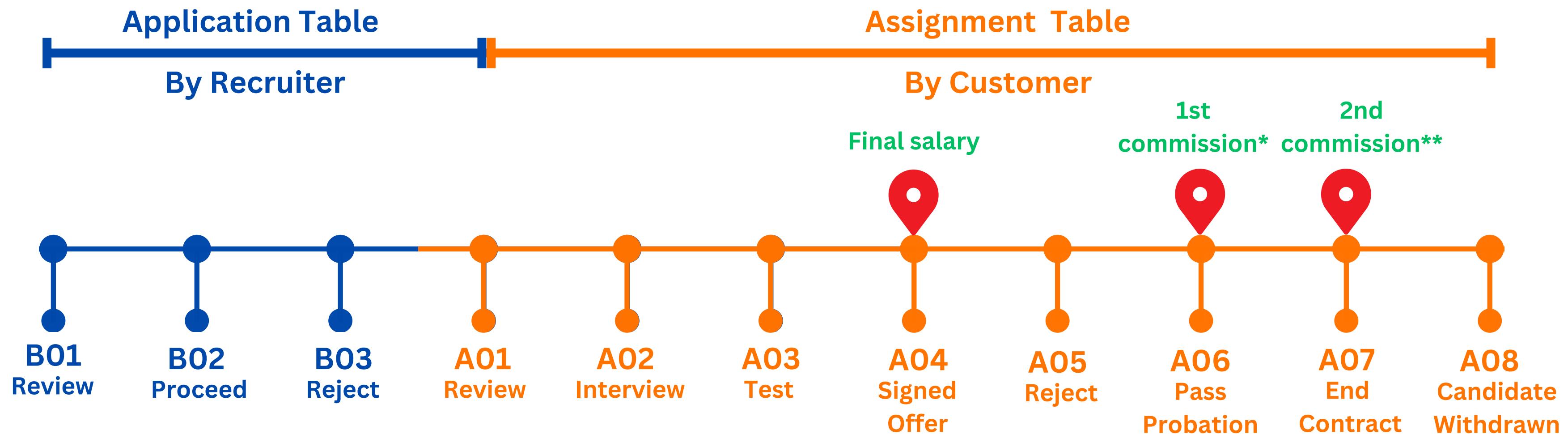
Assignment	Type	Key
assign_id	String	PK
appli_id	String	FK
status_id	String	FK
final_sar	Integer	
commission	Integer	
data_date	Datetime	

Job	Type	Key
job_id	String	PK
job_title_id	String	FK
job_created_dt	Date	
cust_id	String	FK
budget	Integer	
job_deadline_dt	Date	

Recruiter	Type	Key
rec_id	String	PK
name	String	
last_name	String	
phone	String	
department	String	
rec_sar	Integer	

Data Source

Status Timeline →

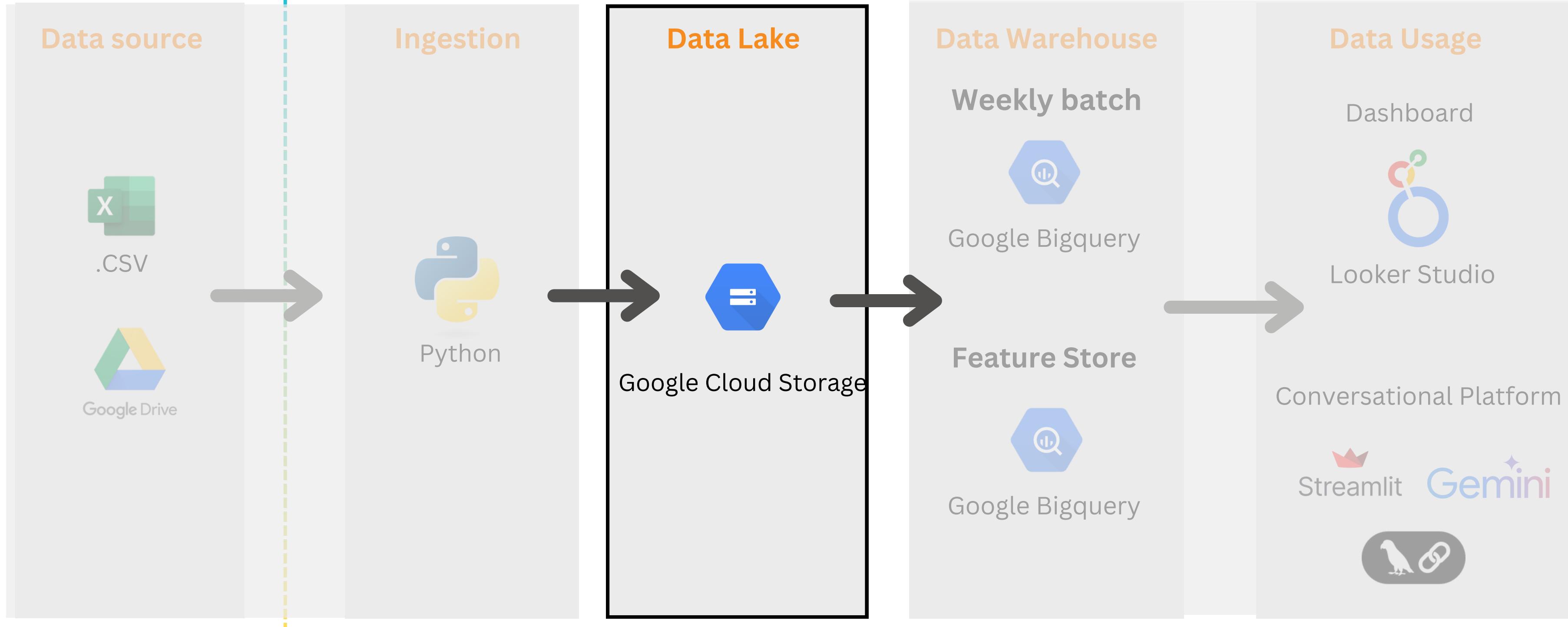


*1st commission = 10% of final salary x 4 months probation period
**2nd commission = 10% of final salary x 8 months until end contract

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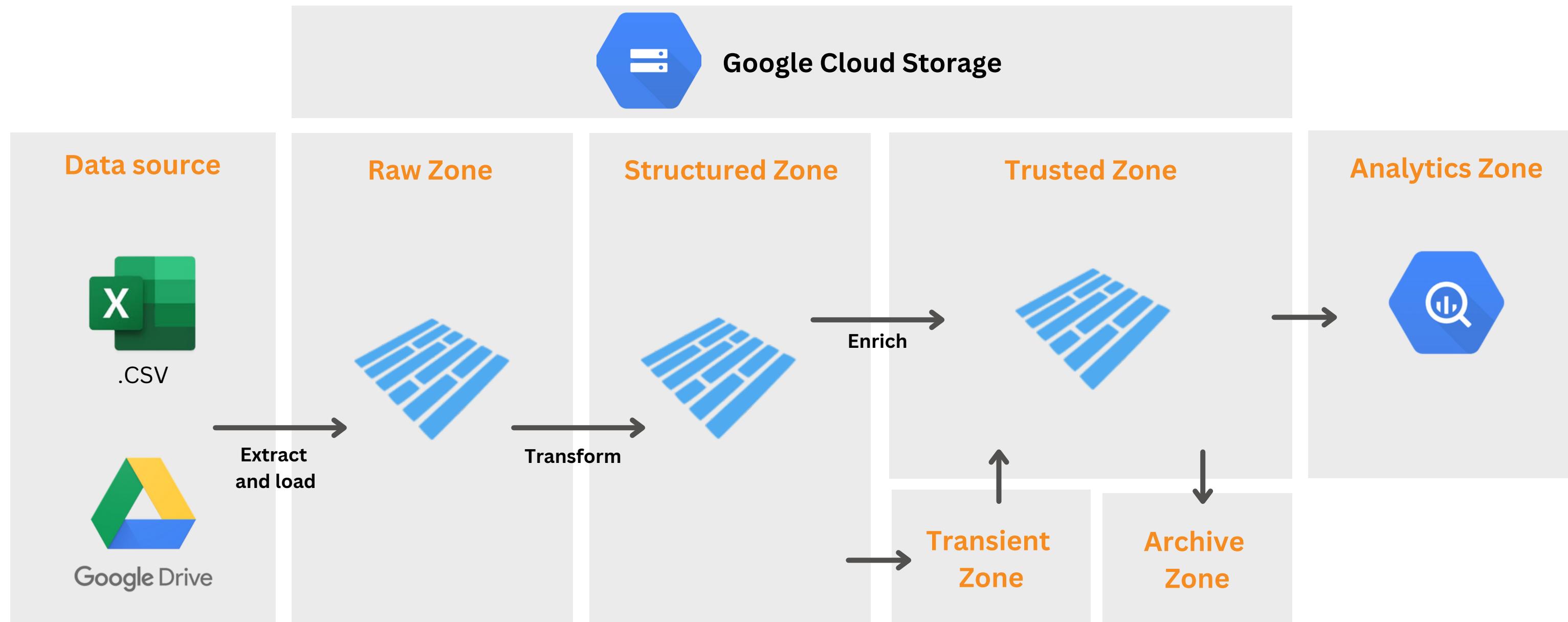
Data Lake & Data Warehouse

Platform Architecture

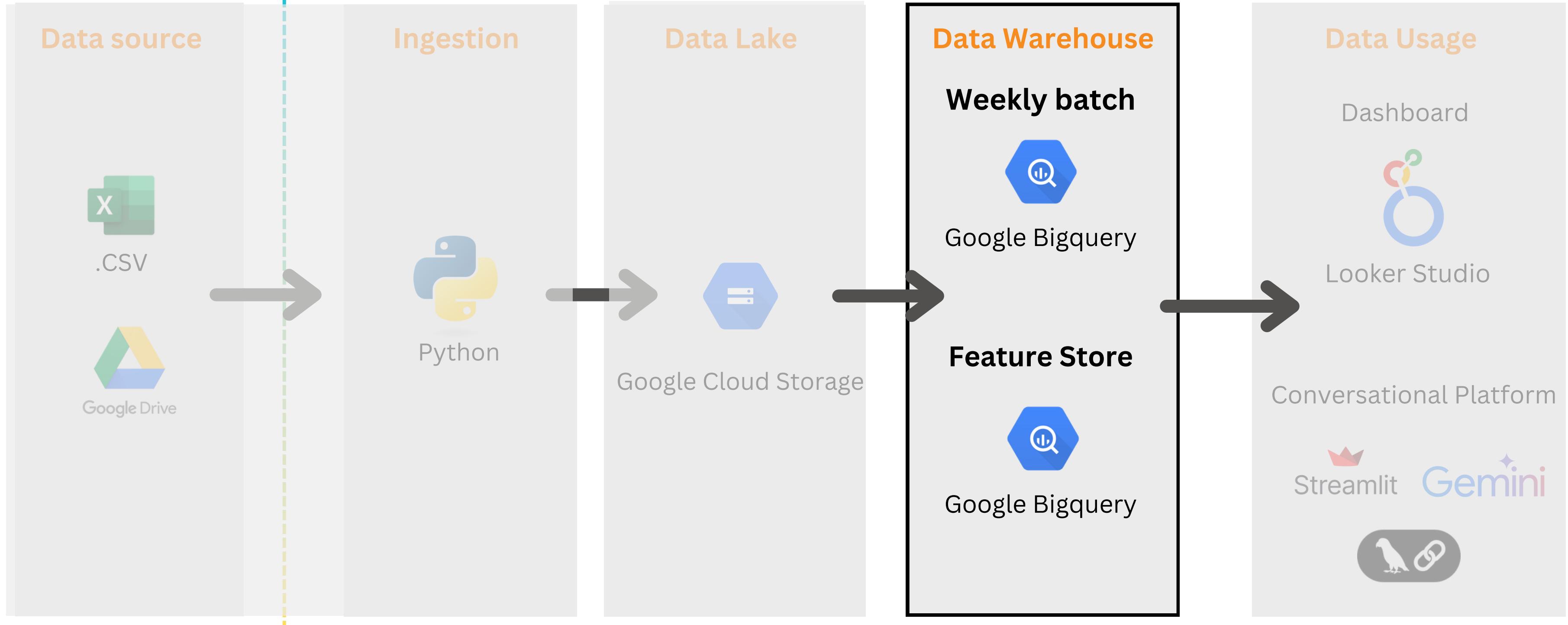


Data Lake and Data Ingestion

ELT Weekly Batch Processing



Platform Architecture





Data Warehouse

Data
Warehouse



Google
Bigquery

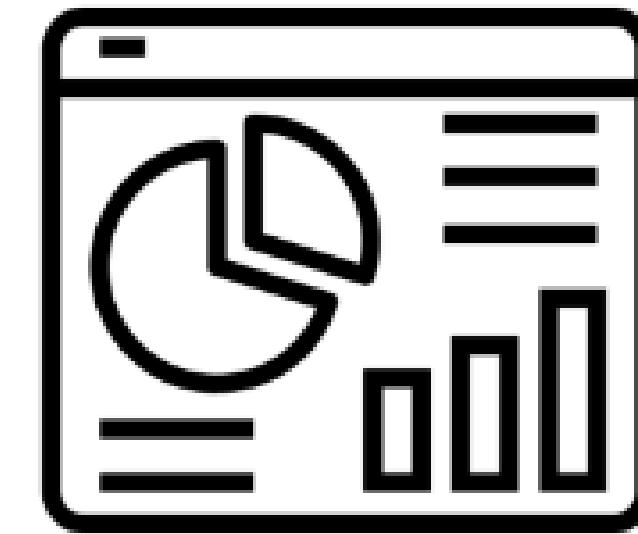
Feature
Store



Google
Bigquery

madt8102_db

- 13 tables
 - application
 - recruiter
 - assignment
 - job
 - status
 - candidate
 - skill_name
 - skill_candidate
 - skill_job
 - job_title_id
 - customer
 - industry
 - channel
- Rag for Chatbot

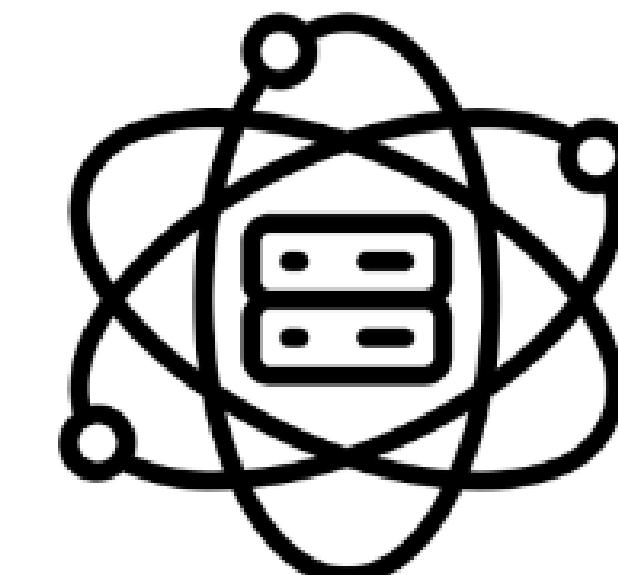


dashboard_db

- Aggregated data for the dashboard
 - dashboard_feature_table
 - dashboard_feature_funnel table

feature_db

- feature store table for ML
 - ml_count_workload_prediction table
 - ml_count_workload_feature_store table



Data Warehouse

SCD Type1 : Candidate Table

can_id	exp_year	dl_data_dt
1	5	2023-04-05
2	2	2023-05-31
2	3	2024-07-01

SCD Type2 : Skill table

skill_id	can_id	skill_name	created_date	expired_date
1	1	Python	2023-04-05	
2	2	SQL	2023-05-31	2023-06-30
3	2	PowerBI	2024-07-01	
4	2	SQL	2024-07-01	

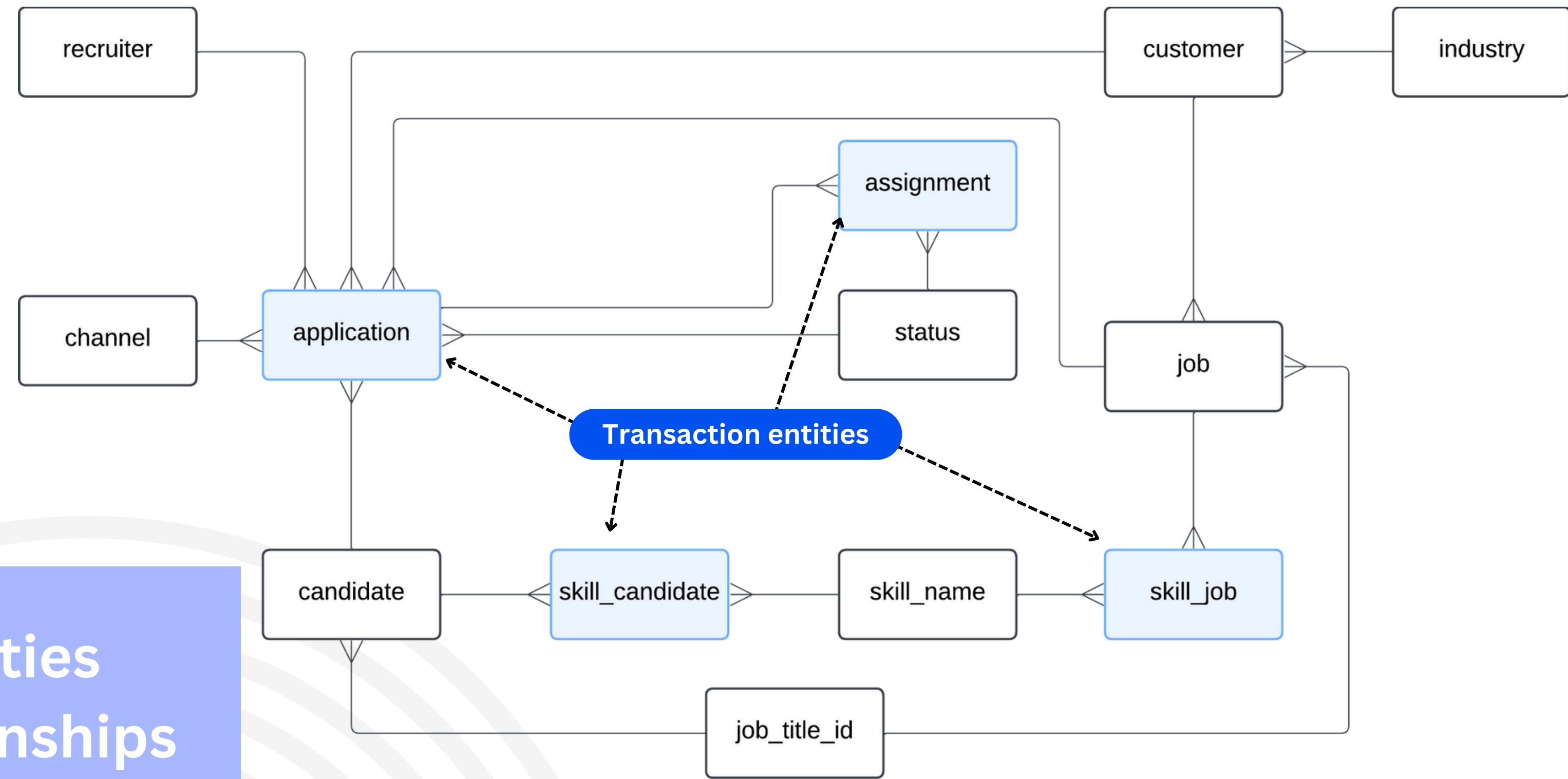
- Overwrite experience year in case the same candidate applied again

- Add new rows if candidate applied once again
- Stored historical data for further analysis



Data Warehouse

madt8102_db: Normalization 3NF (Third Normal Form)





Data Warehouse

dashboard_db

dashboard_feature table

Aggregate level			feature list		batch level	
rec_id	job_title_name	industry_name	count_status_A01	count_status_A02	avg time to hire	dl_data_dt
1	DA	Oil	5	5	30	8-Oct-23
1	DS	Oil	6	6	50	8-Oct-23
1	DA	Oil	1	2	20	15-Oct-23
1	DS	Oil	3	4	10	15-Oct-23

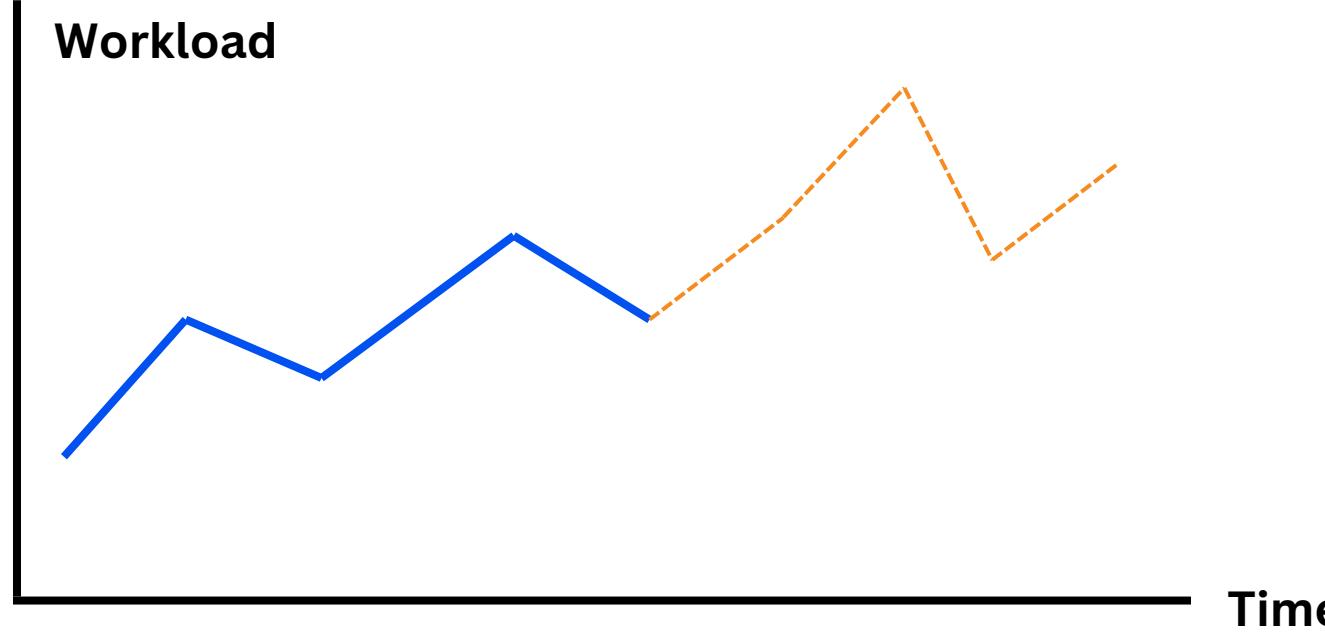
dashboard_feature_funnel table

Aggregate level				feature list	batch level
rec_id	job_title_name	industry_name	status	count	dl_data_dt
1	DA	Oil	base	5	8-Oct-23
1	DA	Oil	review	3	8-Oct-23
1	DA	Oil	interview	1	8-Oct-23
1	DS	Oil	base	8	8-Oct-23
1	DS	Oil	review	6	8-Oct-23
1	DS	Oil	interview	1	8-Oct-23

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MLOps and Feature Stores

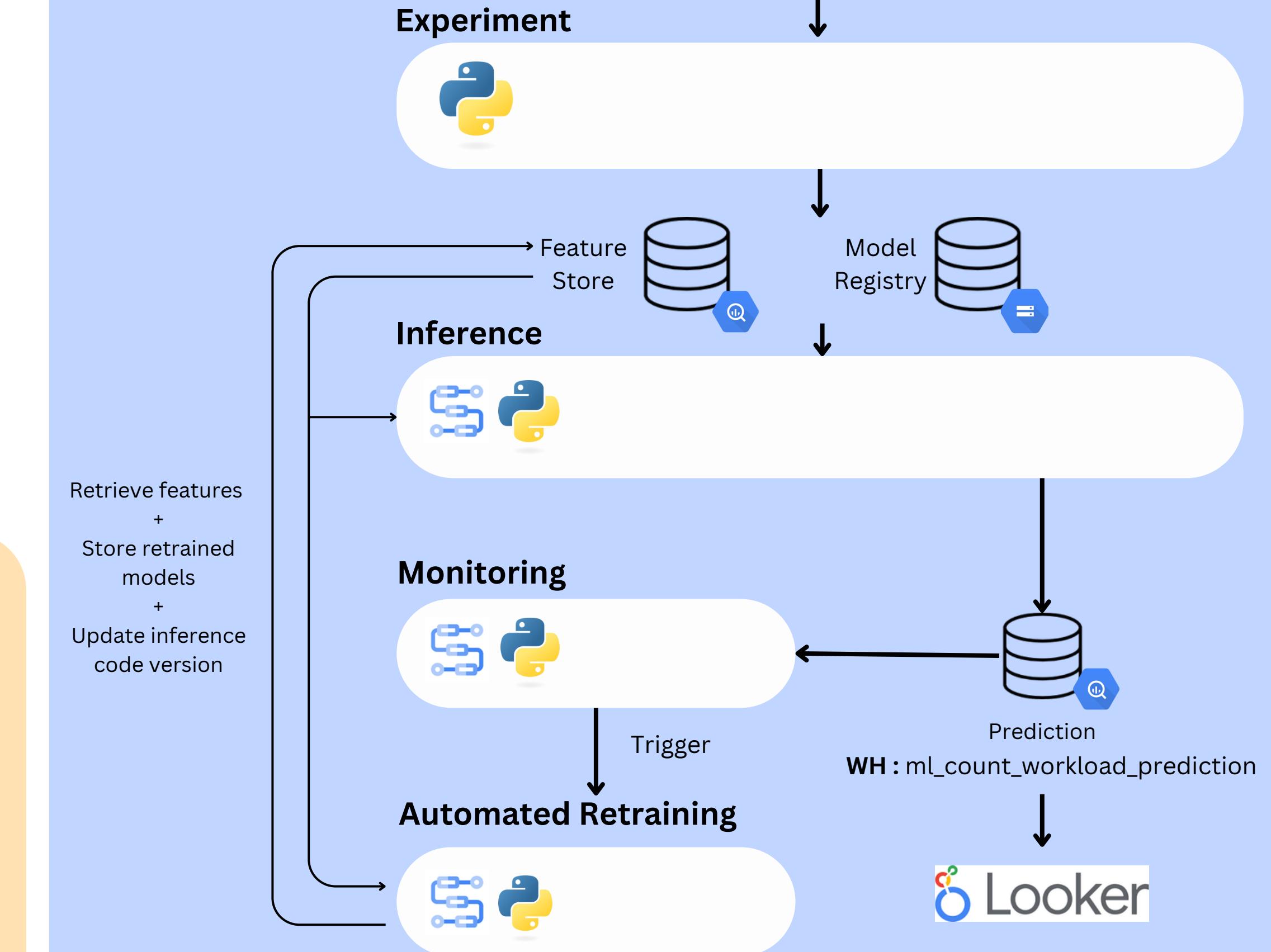
MLOps

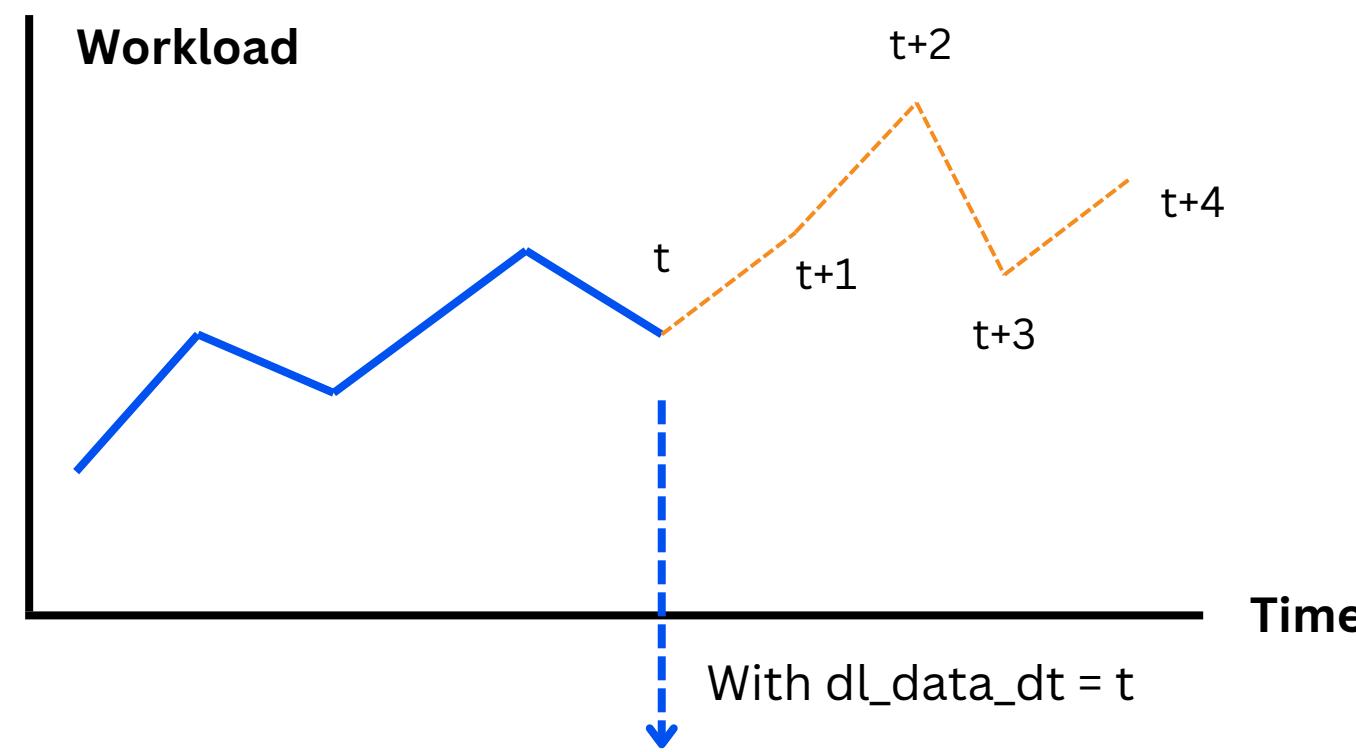


Workload Prediction

- To forecast workload in next 4 weeks
- To utilize forecast to make decision on dashboard

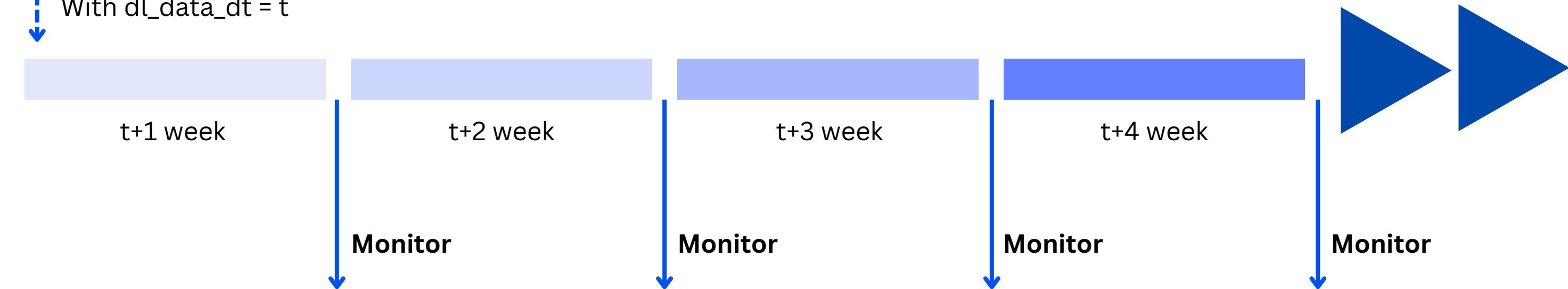
MLOps Ecosystem





MLOps : Monitoring

Perform monitoring in each time step



Accuracy-based

$RMSE > Threshold$

Stability-based

OR

$PSI > Threshold$

Prediction

$\leq 100\text{ k}$

$100 - 200\text{ k}$

$200 - 500\text{ k}$

$> 500\text{ k}$

Average Actual

Jan

Feb

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Dashboard

Dashboards

Recruiting dashboard mainly focusing on improving the recruiter working efficiency by tracking on the major key performance indicators and breakdown on each bottleneck and workload of each recruiters

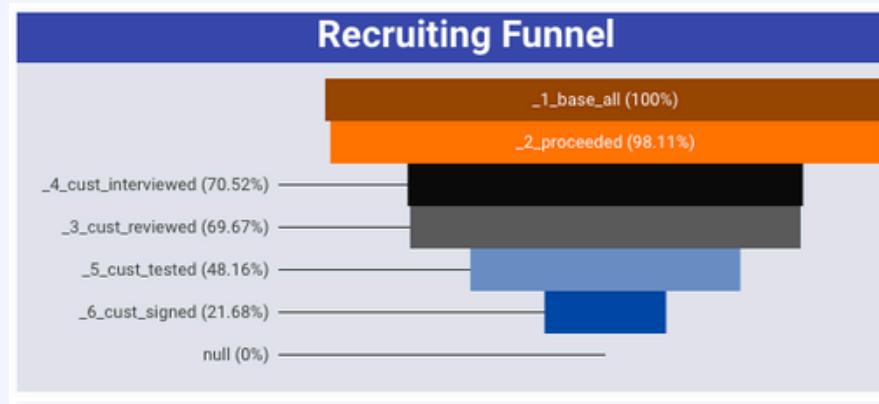
Key Performance Indicators (KPIs) helps manager to see the overall performance



Dashboards

Recruiting dashboard mainly focusing on improving the recruiter working efficiency by tracking on the major key performance indicators and breakdown on each bottleneck and workload of each recruiters

Performance Breakdown Detail which will help manager manage team



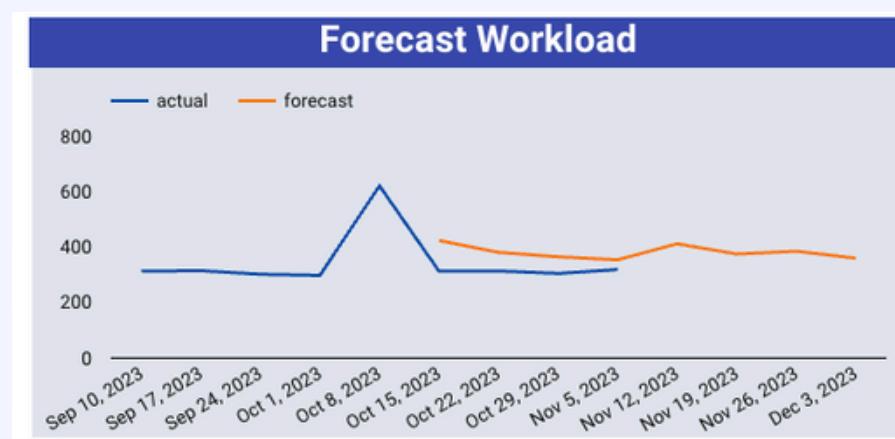
Indicate bottleneck process showing status in funnel



Indicate quality of candidate



indicate workload for individual recruiter



Overall workload prediction (4W)



Indicate how long it take to close each position

ID	Name	Revenue...	Workload ...	Workload ...	%Hiring rate	%Reject rate
1. R005	Emma Davis	2,246,600	396	1,339	146.5	81.5
2. R019	Ethan Scott	2,106,700	384	1,274	146	79
3. R011	Emily Rodriguez	2,065,500	426	1,426	158	89
4. R012	James Hall	2,039,900	383	1,318	142	79
5. R001	John Doe	2,023,400	390	1,334	146.5	82.5
6. R007	Sarah Lee	2,012,200	445	1,460	167	94
7. R002	Jane Smith	1,876,800	401	1,352	152.5	85

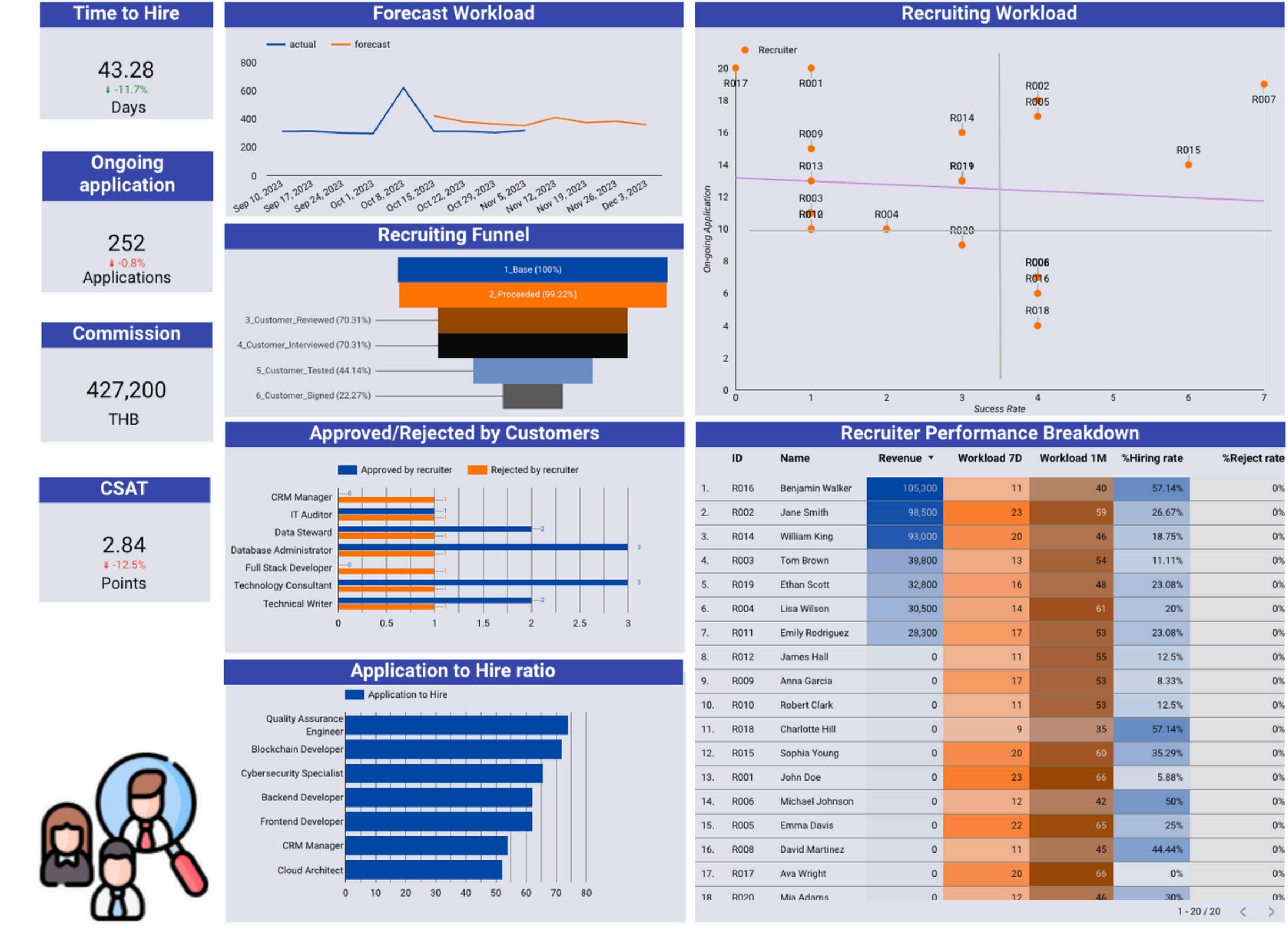
Performance breakdown by recruiter

Dashboards

Recruiting Workload Management Dashboard

Date: Nov 5, 2023

(1) ▾



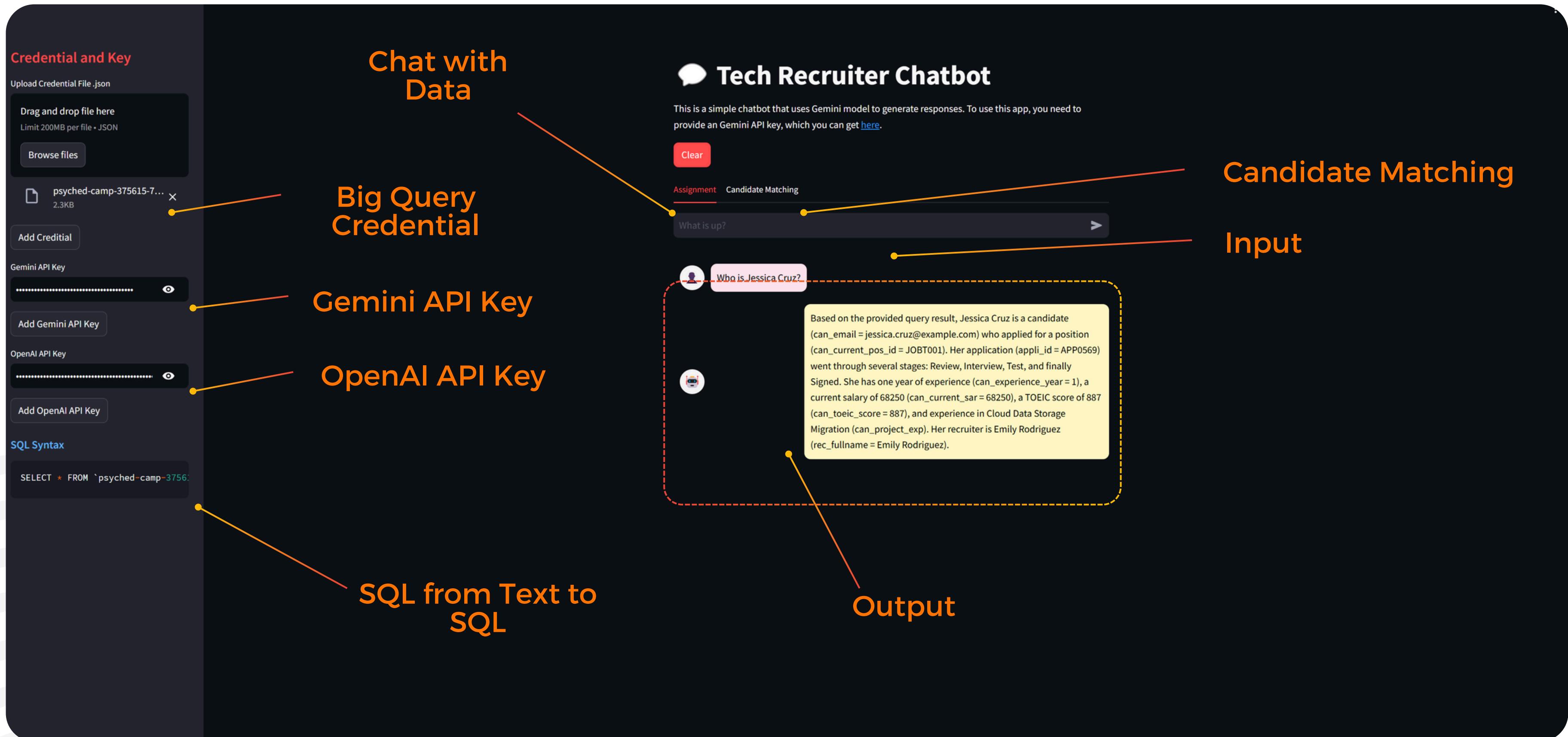
LINK



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Conversational Platform

Conversational Platform



Conversational Platform

 **Tech Recruiter Chatbot**

This is a simple chatbot that uses Gemini model to generate responses. To use this app, you need to provide an Gemini API key, which you can get [here](#).

Clear

Assignment Candidate Matching

What is up? >

 มี candidate ที่อยู่ process status ผ่าน probation กี่คน
 มี candidate ที่อยู่ process status ผ่าน probation 184 คน

 What is average TOEIC score of all candidate?
 The average TOEIC score of all candidates is 687.18.

 candidate คนไหน ได้คะแนน TOEIC เยอะสุด
 The candidate with the highest TOEIC score is Luis Frederick, with a score of 990.

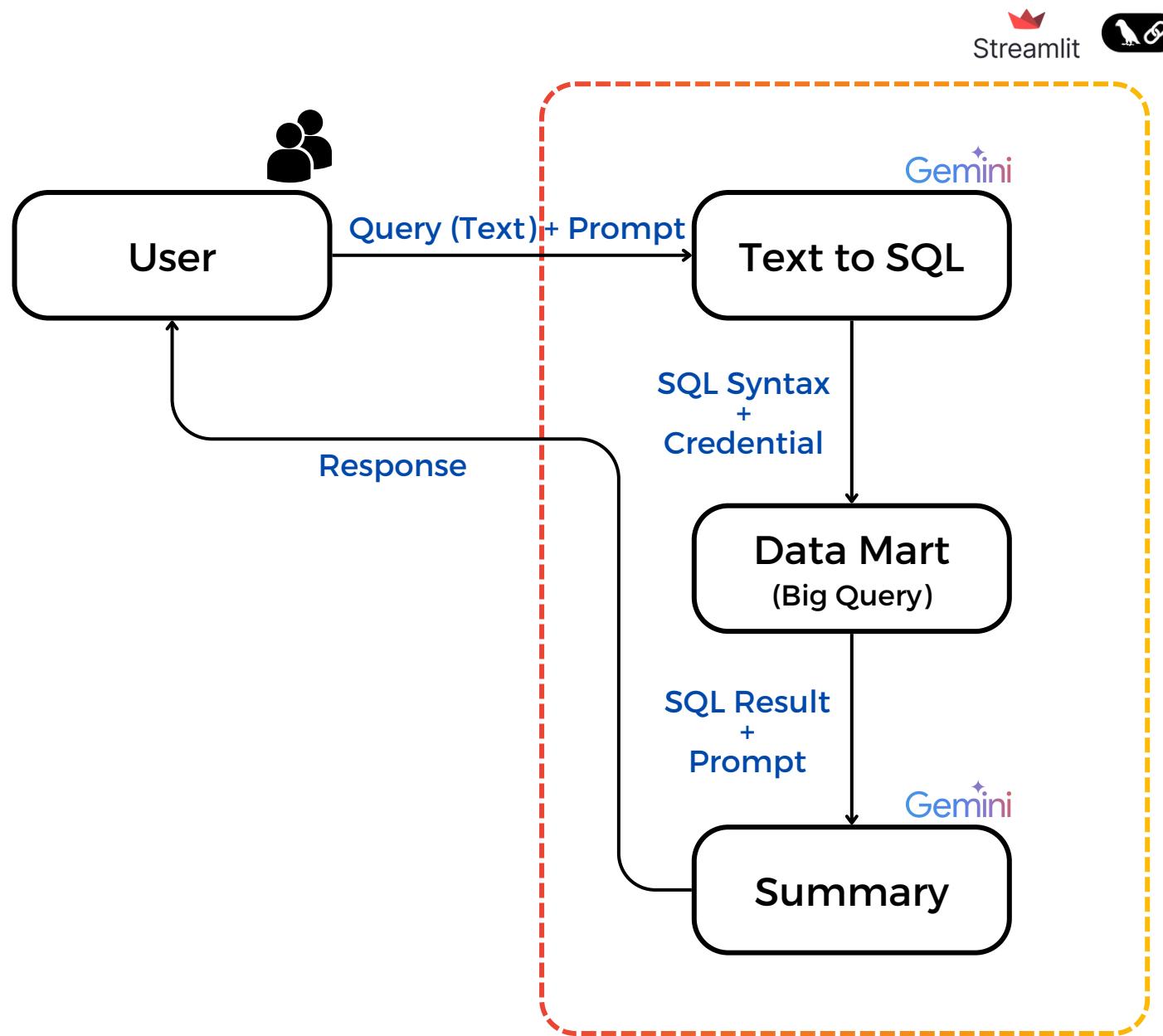
 Luis Frederick ทำงานตำแหน่งอะไร ขอเบอร์โทรศัพท์
 ขออภัย ฉันไม่พบข้อมูลของ Luis Frederick ในฐานข้อมูล จึงไม่สามารถระบุตำแหน่งงานและเบอร์โทรศัพท์ได้

 ขอ email กับ เบอร์โทรศัพท์ของ Luis Frederick หน่อย
 Email: luis.frederick@example.com Phone: 080-3643-5510

 What is job title of Luis Frederick?
 The job title of Luis Frederick is Technology Consultant.

Feature 1: Chat with Data

Easy and quick to query data with no need tech skill



Conversational Platform

Tech Recruiter Chatbot

This is a simple chatbot that uses Gemini model to generate responses. To use this app, you need to provide an Gemini API key, which you can get [here](#).

Clear

Assignment Candidate Matching

Type here ...

Design, implement, and maintain cloud-based solutions to support scalable and secure applications. Collaborate with teams to optimize cloud performance, manage infrastructure as code, and ensure high availability. Proficient in cloud platforms (AWS, Azure, GCP), CI/CD pipelines, and system monitoring. Strong knowledge of networking, security, and automation tools (e.g., Terraform, Kubernetes).

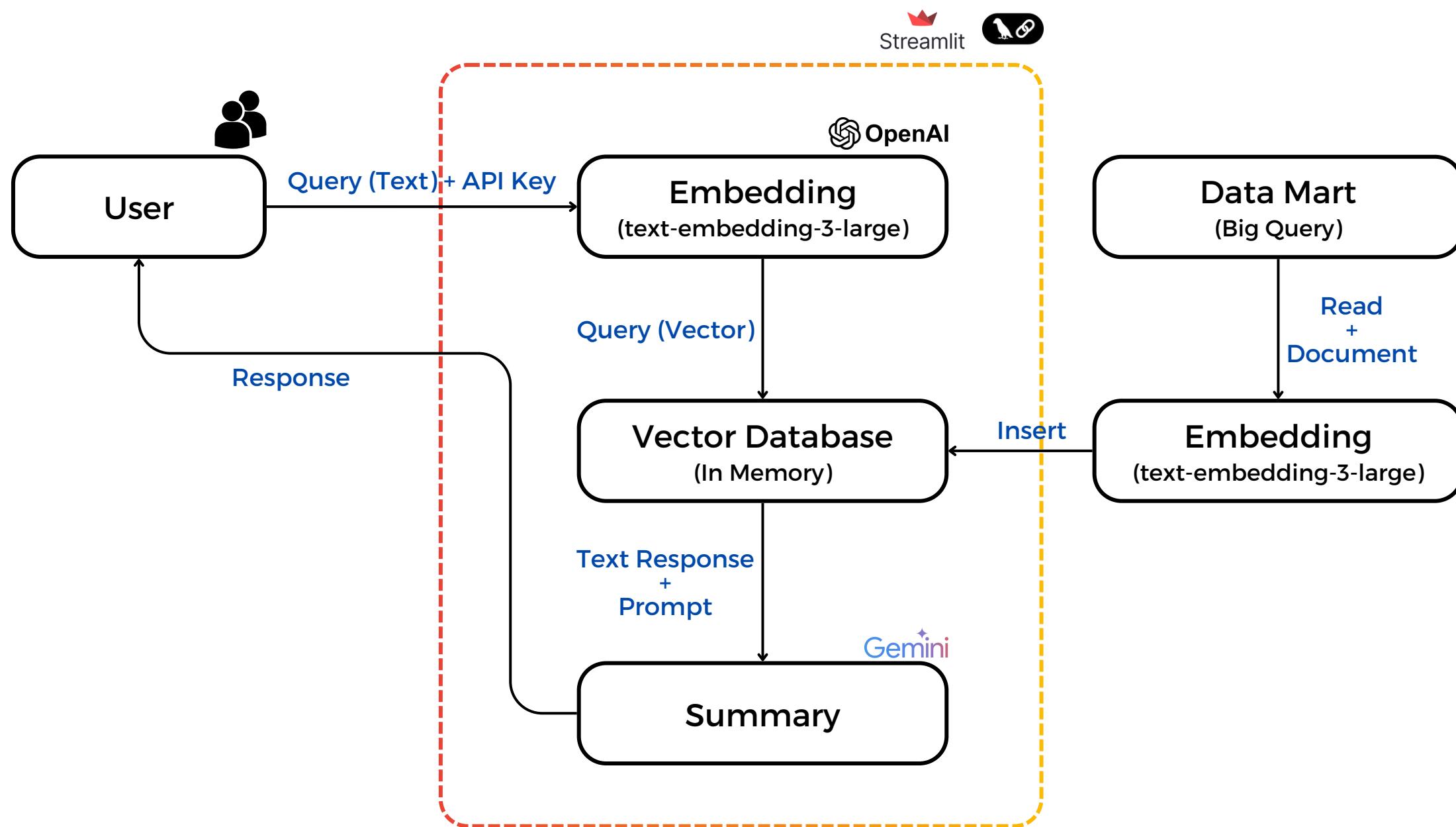
* Name: Jessica * Last Name: Cruz * Phone: 080-9814-7961 * Email: jessica.cruz@example.com * Current Salary: 68250 * Experience: Cloud Data Storage Migration (1 year experience) * Skill: Communication Skills, Cloud Platforms, Cloud Security, Stakeholder Communication

Recommendation:

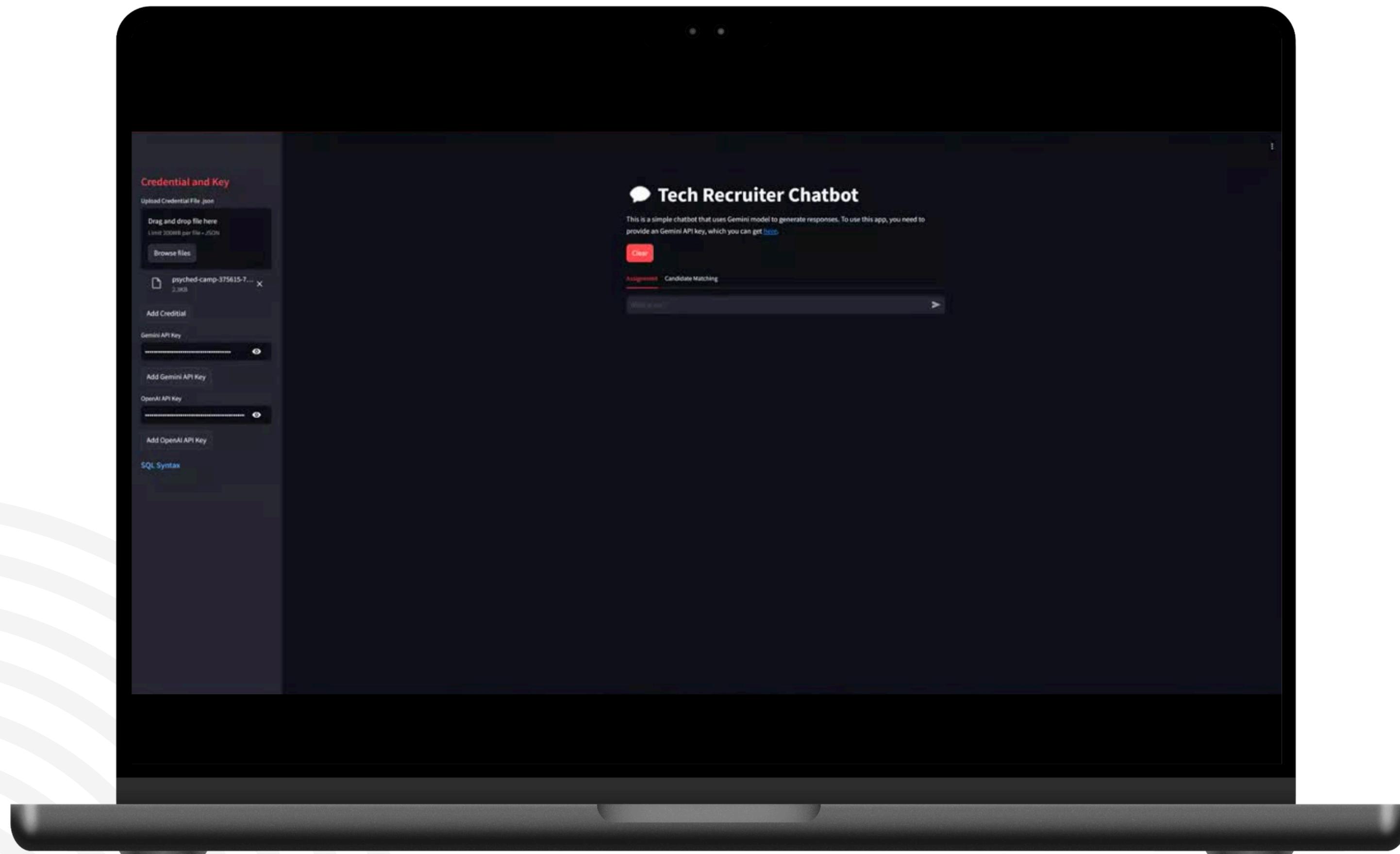
Jessica Cruz is a potential candidate for the Financial Consultant position (JOB0465) at WealthCare. While her current salary is significantly higher than the offered salary (68250 vs 36300), her skills in Cloud Platforms and Cloud Security align somewhat with the required skills. However, there's a significant mismatch between her listed skills and the job requirements. The job posting emphasizes database management, API development, Java, Microservices, and financial expertise, none of which are explicitly mentioned in her skillset. Further investigation is needed to determine if her cloud experience translates to the required financial modeling and other technical skills. Given the salary discrepancy and skill gap, she may not be the ideal candidate without further clarification on her transferable skills and willingness to negotiate salary. Consider contacting her to discuss her experience in more detail and assess her potential fit for the role. Exploring other candidates might be a more efficient use of time given the current information.

Feature 2: Candidate Matching

Reduce time to search the correct candidate



Conversational Platform



••• Members •••



6610414007

Kawin A.



6610424008

Pimchanok P.



66104240015

Surapat V.



6610424020

Tipsuda P.



6610424022

Sorrapon M.



6610424023

Tanapon T.



6610424024

Tawan V.



6610424027

Chokpipat W.

