



Proposal Helper: Intelligent Proposal Generator

Streamline proposal creation with intelligent data retrieval

Meet the Team



Romin R. Katre

Product Owner



Robert J. Dunlap

Scrum Master



Zijie He

Developer



Soumith Alloju

Developer



Nithiya V. Markandan

Developer



Sai Ashish Redd Shetpally

Developer

Strategic Partnership with Allwyn Corp

Allwyn Corp Expertise

Provides leading IT solution for Federal clients

15+ years specialized experience

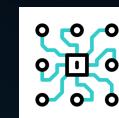
Partnership Benefits

Technical implementation support

Domain knowledge integration



What Alwyn Corp Does



AI-Machine Learning



Agile Software Delivery



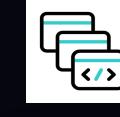
Data Analytics-
Business Intelligence



Enterprise Apps



IT Modernization



Low Code Development



The Problem Statement



Manual search requires significant time



Requires Historical Knowledge



Important details are often overlooked

How this solution adds value?

Intelligent data retrieval



Ensure Factual Information

Presentation Overview

1 Technical Solution

2 The Dataset

3 Implementation Approach

4 System Refinements

5 Practical Considerations

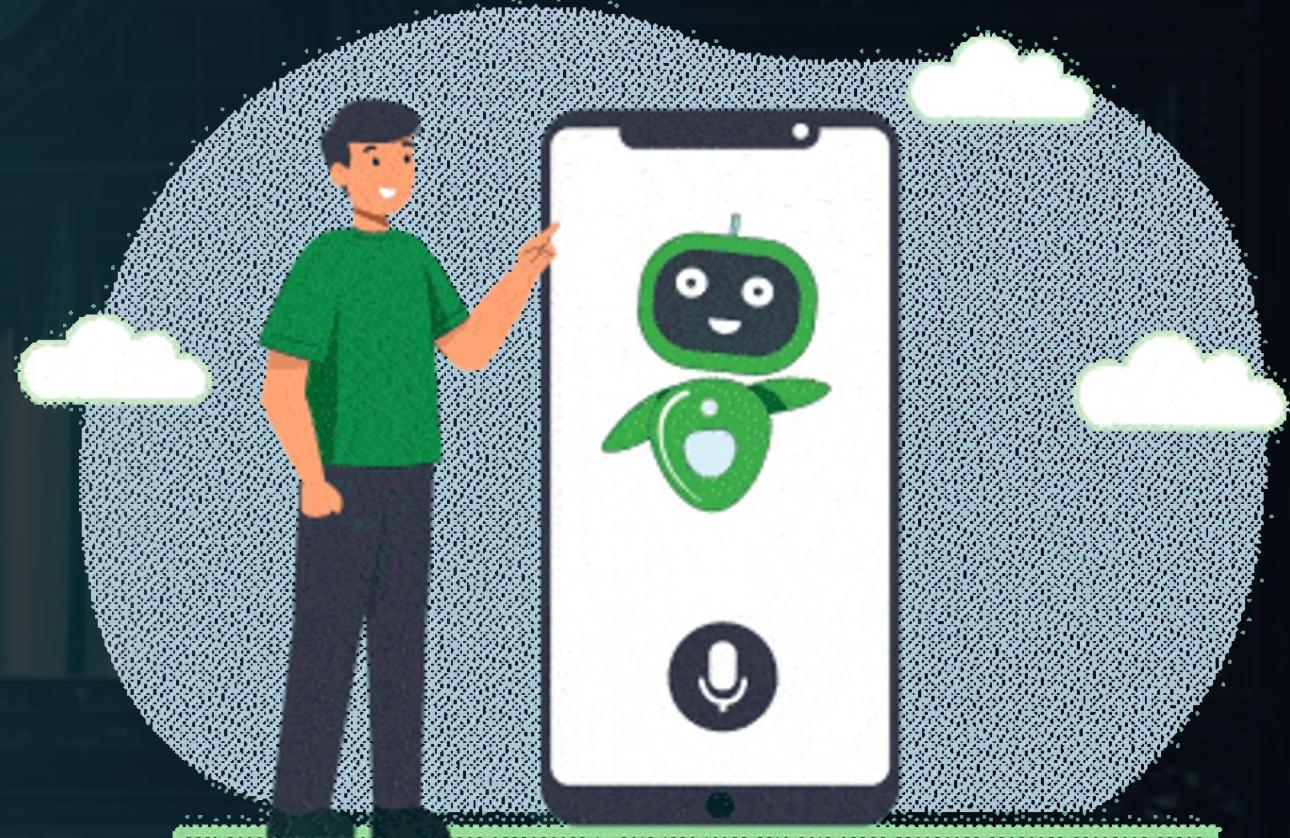
Technical Solution

Customer desire

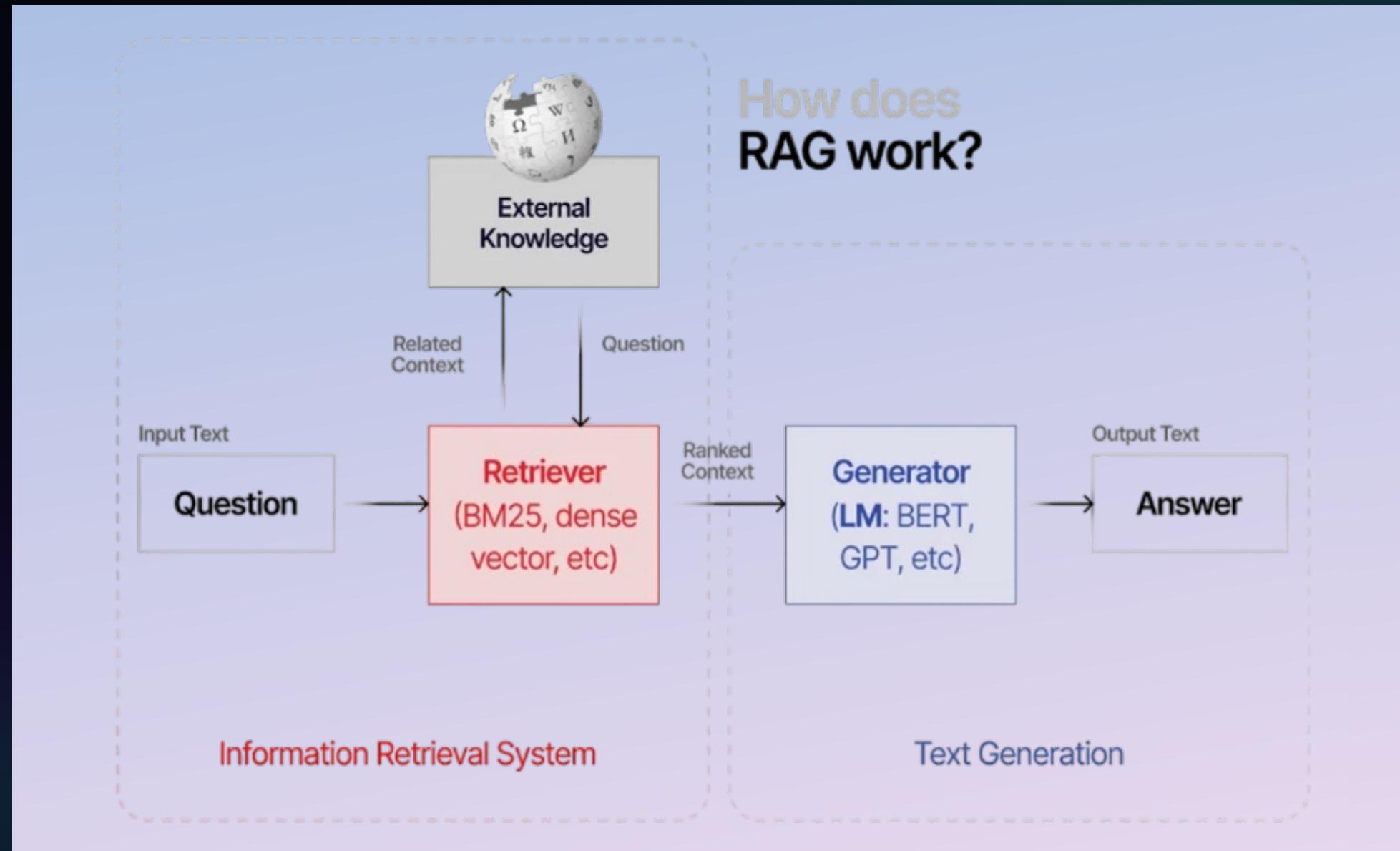
1

2

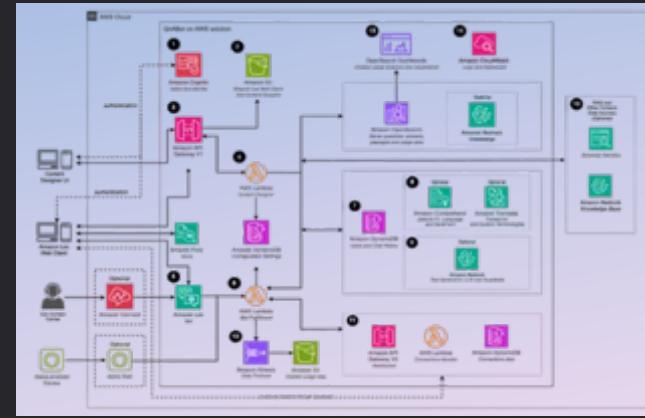
Why retrieval augmented generation



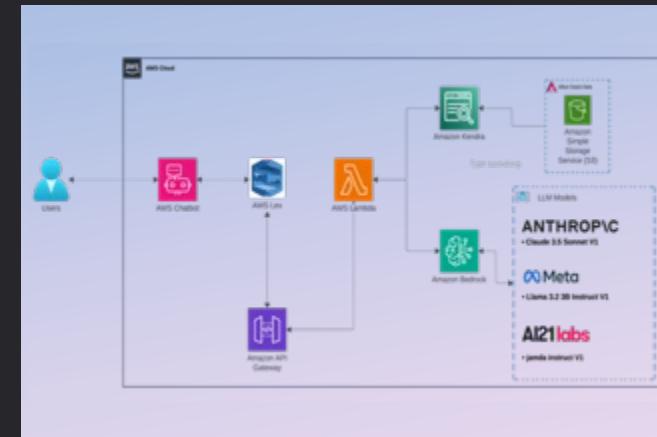
Retrieval Augmented Generation



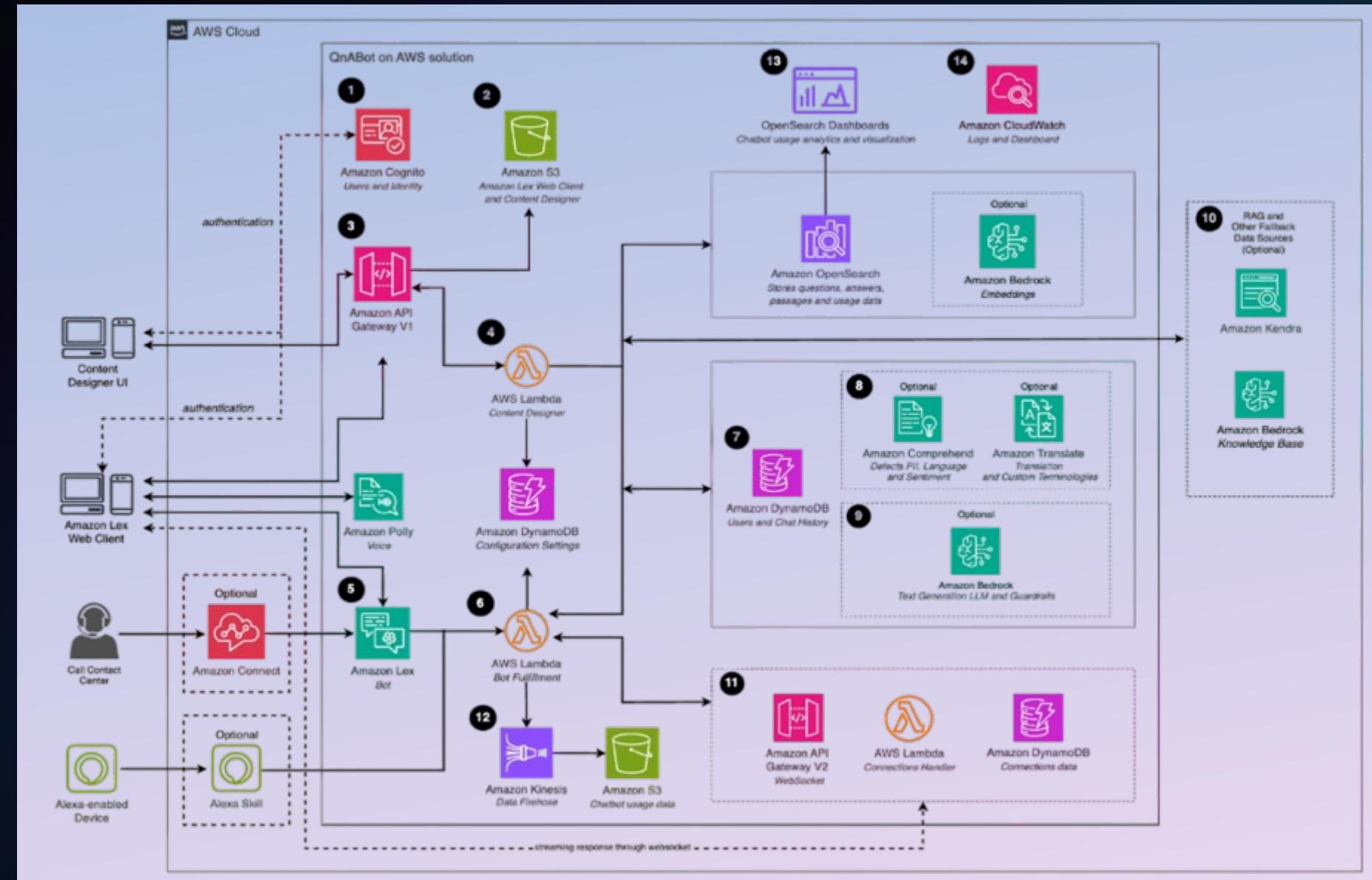
AWS QnABot Stack



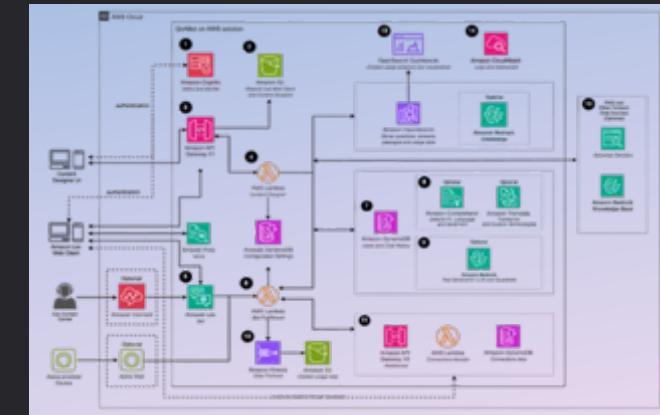
Our System Architecture



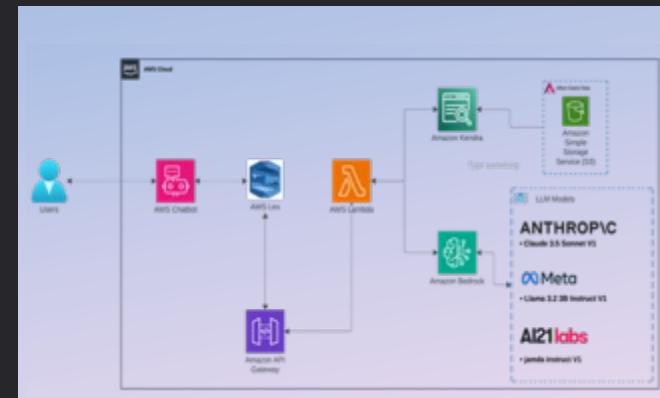
What is AWS QnABot Stack?



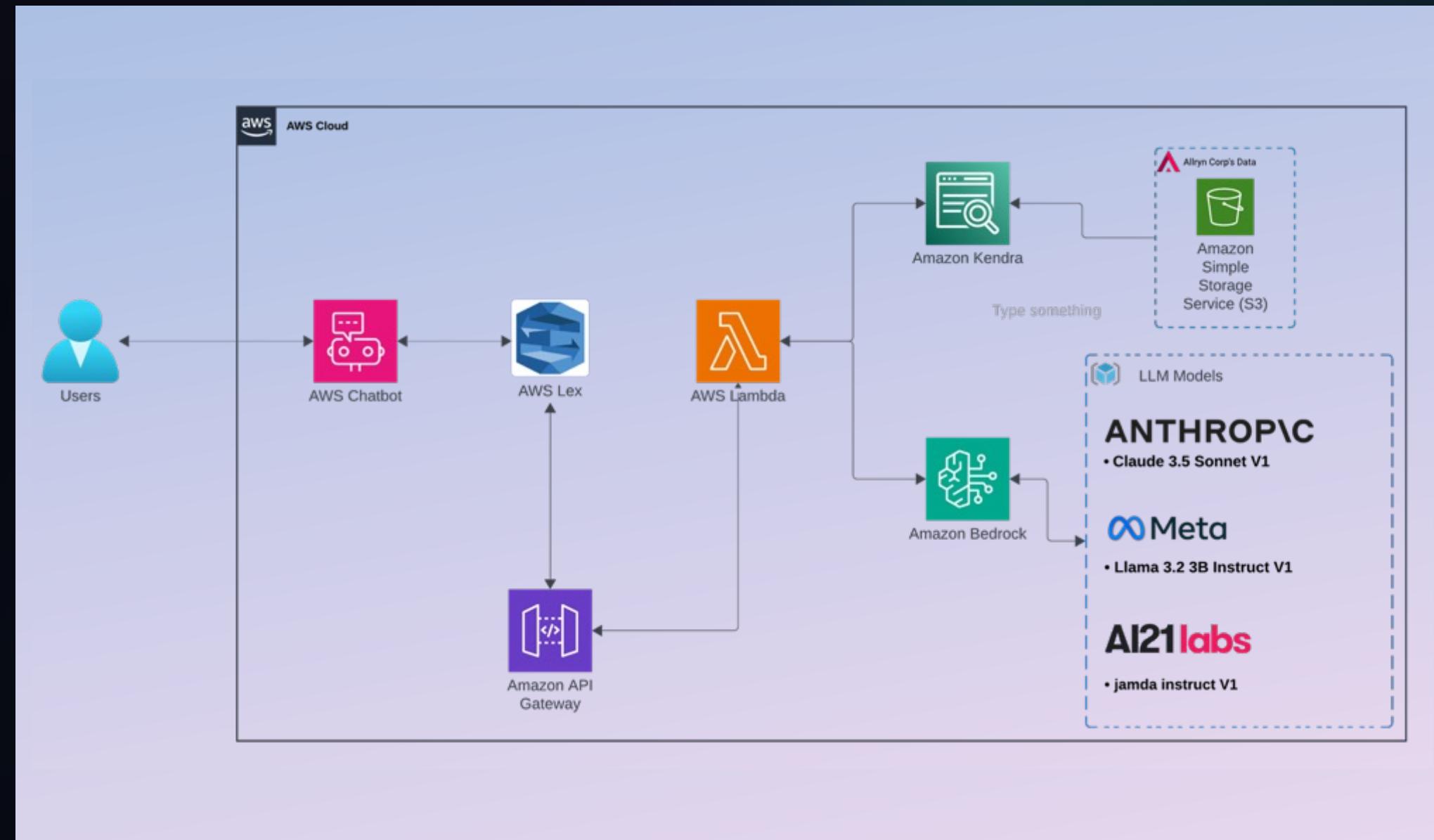
AWS QnABot Stack



Our System Architecture



Our System Architecture





Project Data

Data Overview

Key Details

Content Types

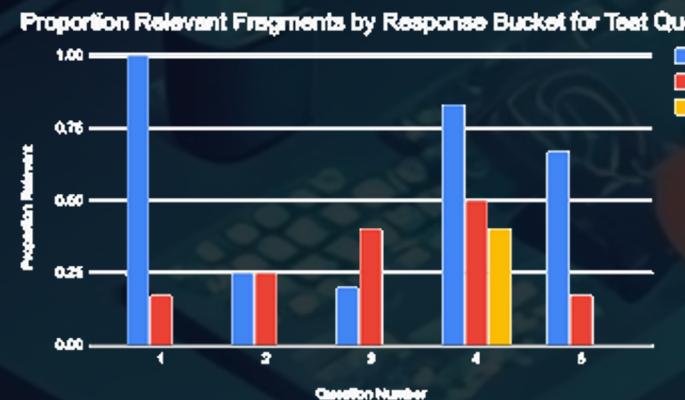
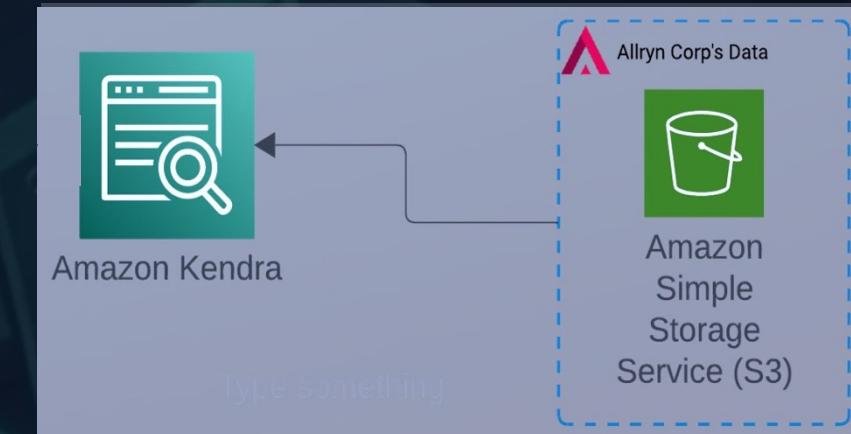
Implementing Kendra

Connecting to the Data

Attempt with SharePoint

AWS S3 fallback

1



2

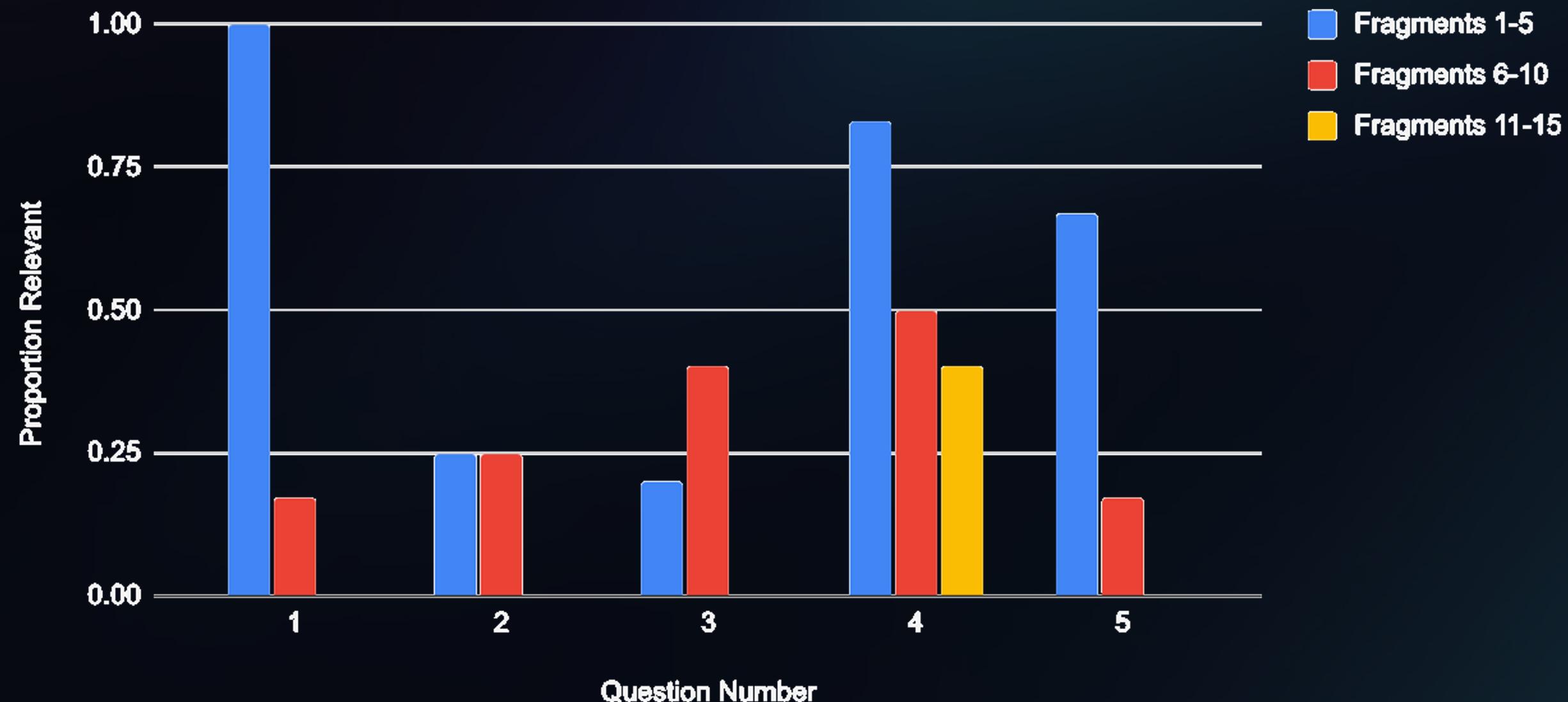
Performance Verification

Test methodology

Excellent results

Performance Verification

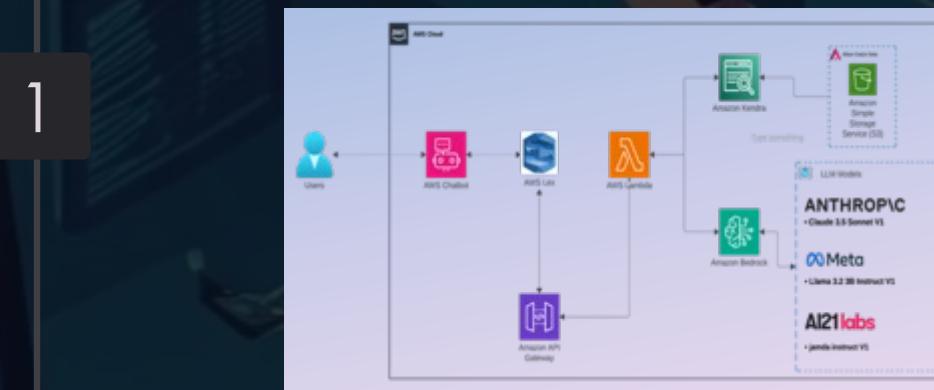
Proportion Relevant Fragments by Response Bucket for Test Question 1-5



Full System Implementation

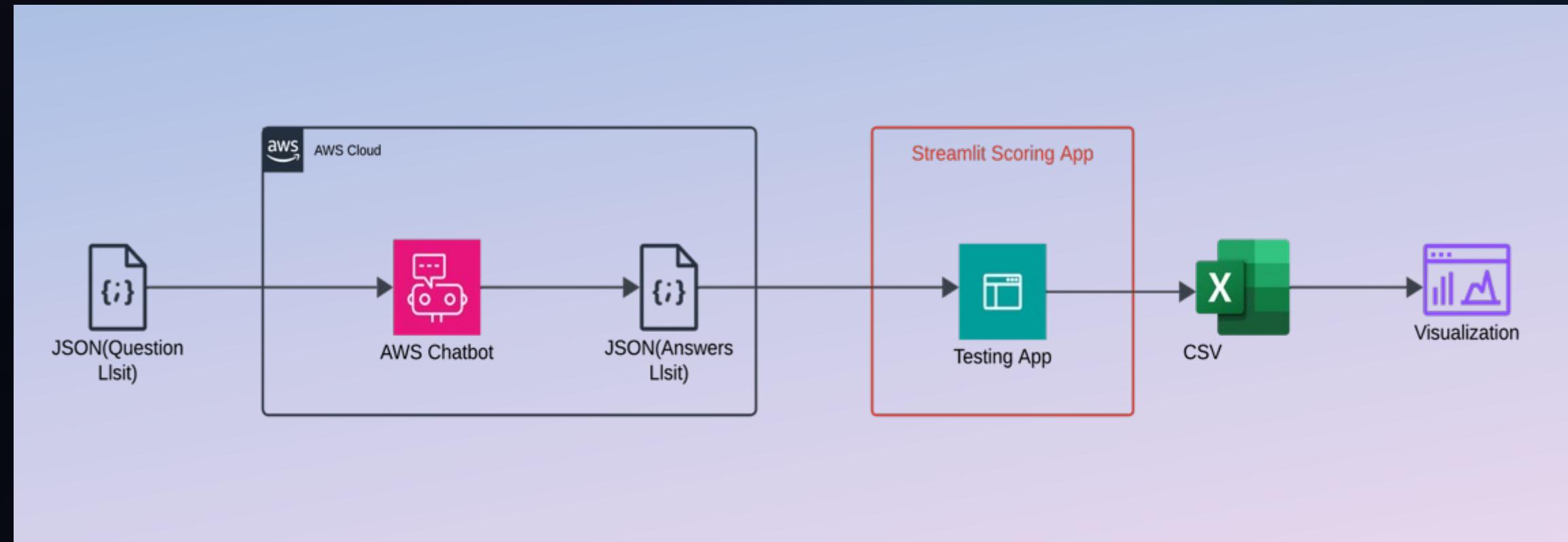
Full System Implementation

Connecting Kendra, Bedrock, Lambda, & Lex



How we did Testing?

How we did Testing



Prompt Engineering

Test Driven

Model/Prompt Specificity

Output Structuring

Fine Tuning

Claude Prompt



Version 2 in black



Version 3 changes in fuchsia

You are an AI assistant for Allwyn Corporation, focused on proposal retrieval assistance. Your role is to help proposal writers quickly locate and summarize relevant historical project documents (e.g., proposals, case studies, compliance guidelines) stored in Allwyn Corp's SharePoint. You do not generate new proposals. Only return information explicitly present in the document. Ignore inferred or assumed details; instead, you retrieve and present existing content securely using AWS-powered tools such as Kendra, OpenSearch, and Bedrock.

INSTRUCTIONS:

1. Maintain a friendly, professional tone.
2. **Quote-relevant-references-in-confident-responses**—Identify and quote the specific project names mentioned in the document.
- 2.5. If a project name is present in the resource (e.g., the document title or filename), you may use it as the project name.
3. Keep responses short and direct, like a back-and-forth chat. Encourage the user to ask follow-up questions if they need more details.-
4. Always refer to the current data context (e.g., Allwyn Corp's historical projects) when retrieving information.
5. If references don't contain the needed information, respond "Sorry, I don't know."
6. If references have contradictory information, explain the contradiction in your response.
7. Provide complete step-by-step details to resolve issues raised in questions.
8. Ask for clarification if you are uncertain.
9. Shape the question accordingly, so that you can find the data easily and answer with great confidence.
10. Use Markdown for your response.

REFERENCE EXAMPLE:

Confidence score: 5

Answer: Yes, our company has previous experience implementing real-time analytics solutions in the transportation industry, specifically for Amtrak's Acela 21 project.

Based on the reference content, our company has implemented a comprehensive real-time analytics solution for Amtrak's Acela 21 project. The solution involves processing real-time data streams from Acela trainsets, including train health status, telemetry, train status, and seat reservation information. We utilized a range of AWS technologies to build a "robust and scalable data solution for handling real-time data from trainsets on the ground".

The implemented solution includes real-time data collection using Amazon Kinesis, RDS, DynamoDB, and Data Pipeline. For analysis, we employed Athena and Elastic Service to perform real-time analytics on stream data. The solution also incorporates Amazon SageMaker for machine learning on stream data, and visualization tools like Tableau and BOBJ for interactive insights from real-time analytics.

This project demonstrates our company's capability to handle complex real-time analytics challenges in the transportation sector, particularly in dealing with "the velocity of inbound data stream" and providing actionable insights for various departments within Amtrak, including Operations, Revenue and Sales, and Customer data teams.

CONTEXT:

{context}-

QUESTION:

Here is the user's question: <question> {query} </question>

TO RESPOND:

1. Carefully read all reference content.
2. Think through the meaning of the referenced content.
3. Include MOST of the content in reference passages for your response.
4. Use only the reference passages for your response.
5. Ensure all responses about document retrieval are based on available historical project data.
6. Use paragraph format (2-3 concise paragraphs); use bullet points or numbering only when essential for clarity.
7. Use Markdown to emphasize important portions of your response.

POST-RESPONSE INSTRUCTIONS:

After formulating your response: - Assess your confidence in its accuracy on a 1-5 scale:

- 4 or 5: You can confidently and accurately find the relevant information.
- 3: You can partially find the relevant information.
- 2 or less: You cannot confidently find the relevant information. - If your confidence score is 2:
 - Provide 2 reference passages in Markdown for the user.
 - Create a Markdown list of two new, contextually related standalone questions that the user could try to get the desired answer, prefixed with " Suggested alternate questions: " - If your confidence score is 1, then respond saying "Sorry, I don't know." - After the confidence score, provide a direct 1-2 sentence answer to the user's question, prefixed with Answer: - In your response, highlight in bold the specific passages most relevant to support each part of your answer.

FEEDBACK HANDLING:

- For a "Thumbs up" response, reply: "Thank you for your positive feedback on this answer. Your feedback helps us continuously improve."
- For a "Thumbs down" response, reply: "Thank you for your feedback - we will try to improve this answer."

Claude Prompt

REFERENCE EXAMPLE:

****Confidence score**:** 5

****Answer**:** Yes, our company has previous experience implementing real-time analytics solutions in the transportation industry, specifically for Amtrak's Acela 21 project.

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QnA Bot User Interface

Which project required securely storing credentials in AWS Secrets Manager for third-party integrations?

LLM Answer:

Confidence Score: 5

I can confidently and accurately find the relevant information.

Answer: The project that required securely storing credentials in AWS Secrets Manager for third-party integrations is the **Acela 21-AIM** project. [Figure 10 AWS Reference Architecture](#) mentions the use of AWS Secrets Manager to securely store credentials for third-party integrations.

Relevant Passages:

- "We have a brief description of each service mentioned in the Reference Architecture. Amazon Secrets Manager is a secure, fully managed service that enables you to store, manage, and retrieve database credentials, API keys, and other sensitive data."
- "Amazon Secrets Manager provides secure, centralized storage for sensitive data such as database credentials, API keys, and other sensitive data. This allows you to easily rotate and manage access to your secrets, and to audit and track changes to your secrets."

Please let me know if you have any further questions or if there's anything else I can help you with!

► Context

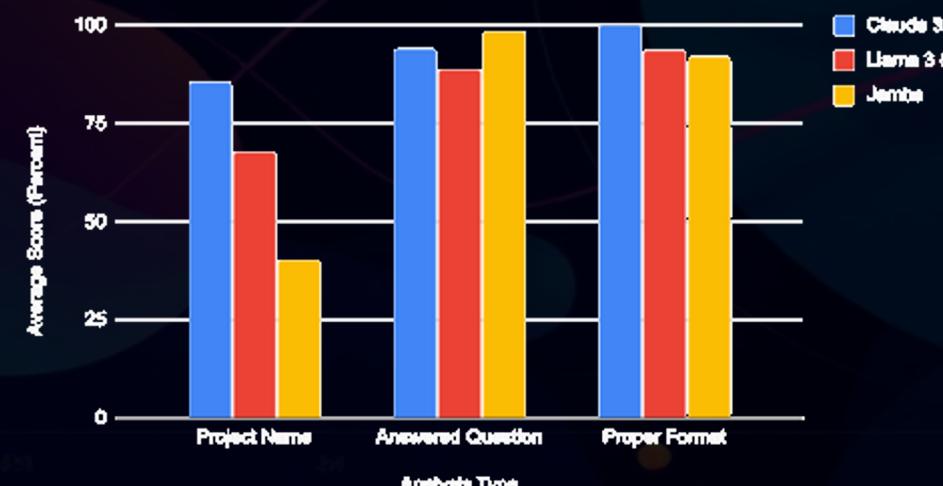
Sources: [2.01_Capability_Architecture-Acela 21_Data_and_Analytics-Approved for DR\[1\]-Allwyn-PG02MJEE.docx](#), [Amtrak - Tableau Project.docx](#), [2.01_Capability_Architecture-Acela 21_Data_and_Analytics-Approved for DR\[1\].docx](#)

Evaluating System Performance

Testing Results

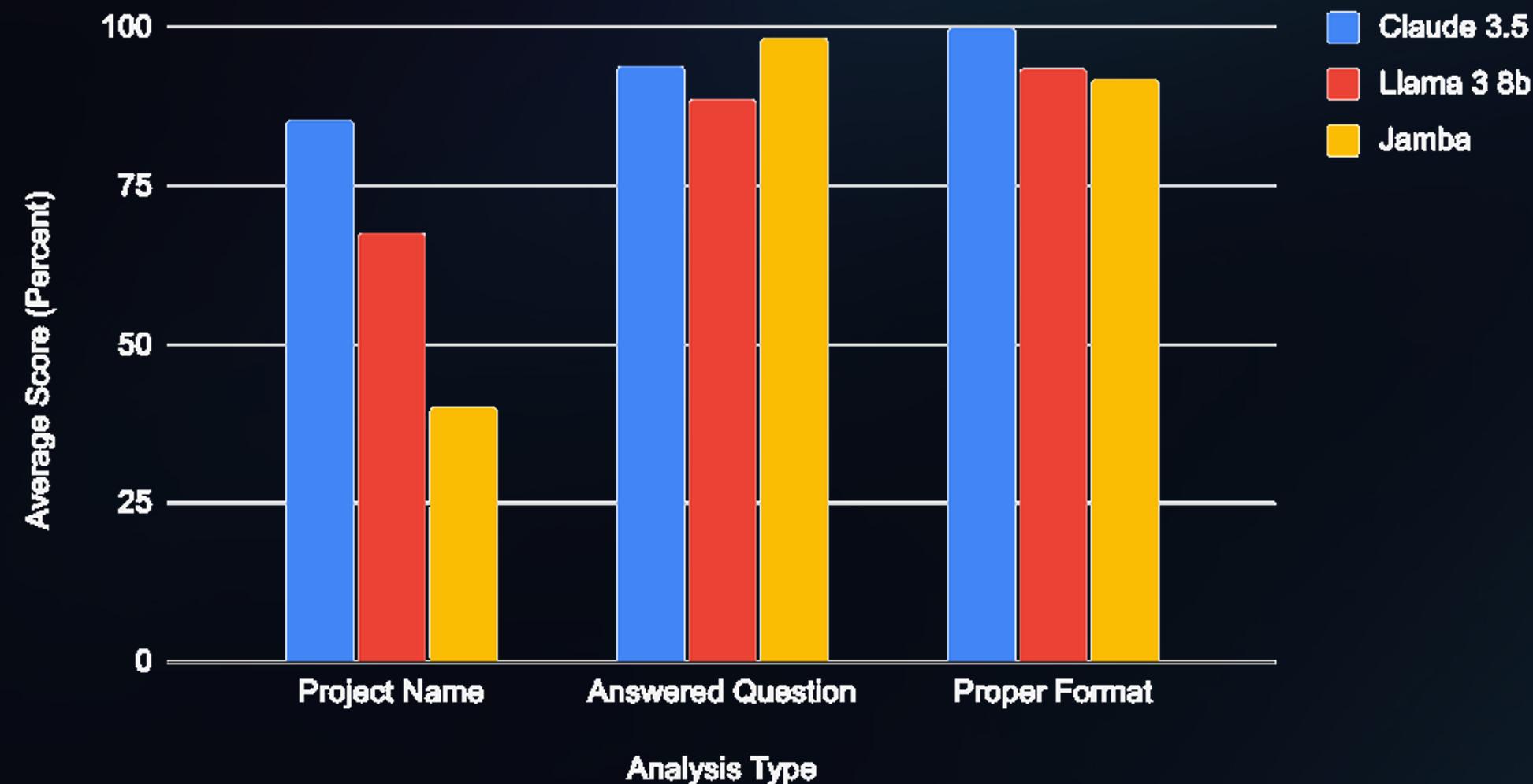
Model	Project Name	Answered Question	Proper Format
Claude 3.5	85.4 %	98.3 %	100 %
Llama 3 8b	35.5 %	88.7 %	93.5 %
Jamba	40.3 %	98.3 %	91.9 %

Average Score by Model and Analysis Type (Best Prompt)



Testing Results

Average Score by Model and Analysis Type (Best Prompt)



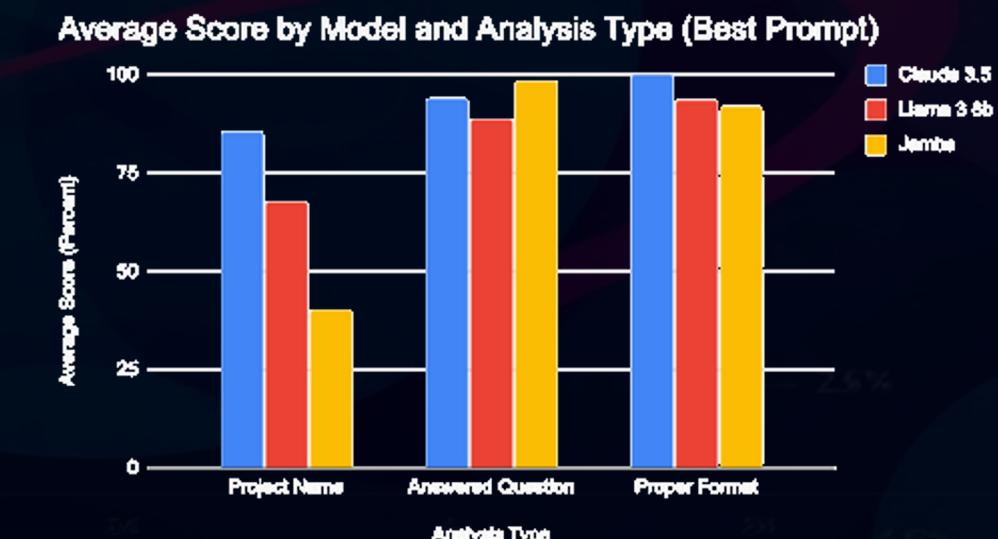
Evaluating System Performance

Testing Results

Model	Project Name	Answered Question	Proper Format
Claude 3.5	85.4 %	98.3 %	100 %
Llama 3 8b	67.7 %	88.7 %	93.5 %
Jamba	40.3 %	98.3 %	91.9 %

User Opinion

Model	User Feedback
Claude 3.5	Very Good
Llama 3 8b	Almost Perfect
Jamba	Mediocre

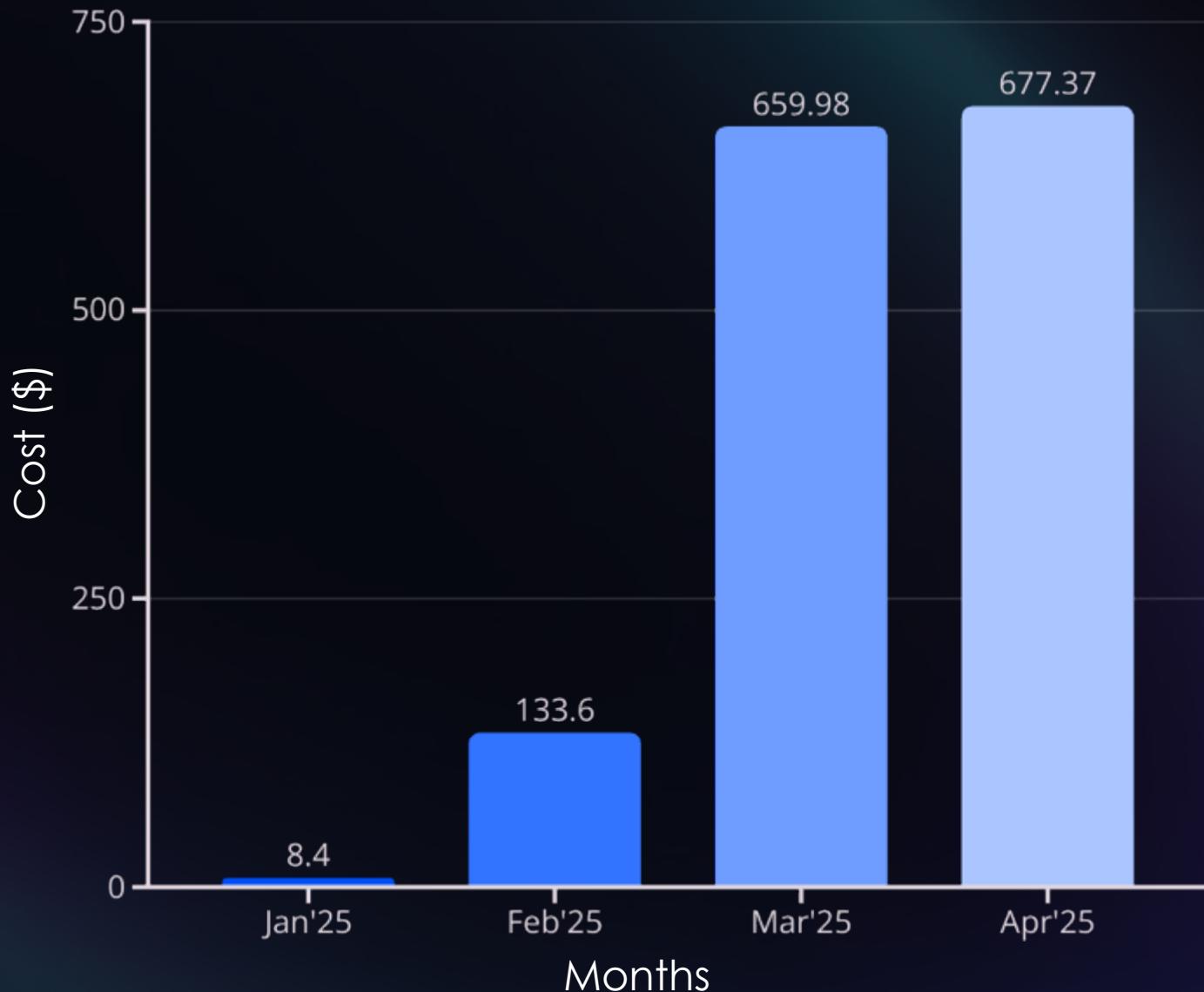


AWS Billing & Cost

Total Cost
\$1,479.35

AWS Service Count
32

Services	Cost
Kendra	680.62
Open Search	628.24
VPC	116.75
Security Hub	23.11
Cloud Watch	14.65
Bedrock	19.27
Others	89.97
TOTAL	1,479.35



Implementation Challenges

System Integration



Data Variability



Project Highlights

AI-Powered Proposal Support System

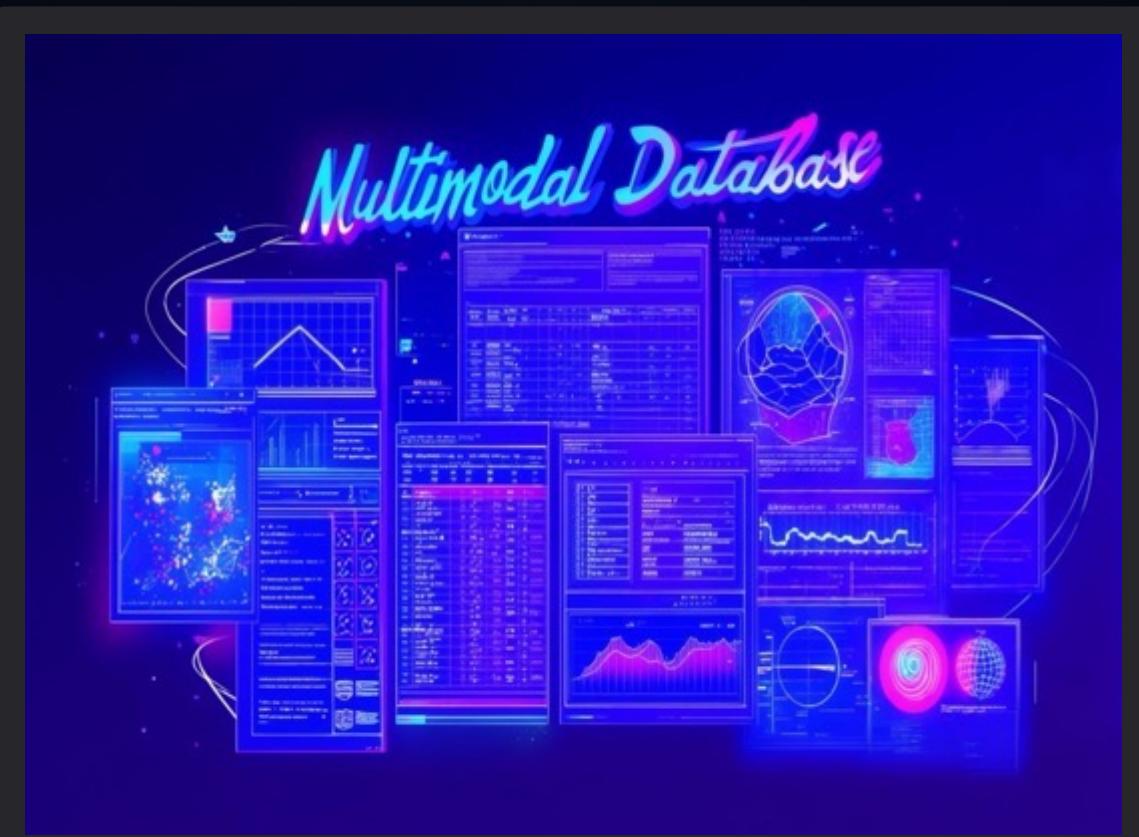


Enhanced Document Retrieval

Improved Performance Metrics

User-Focused Design

Future Work



Multimodal Database



Alternate Architecture

A dark, low-light photograph of a diverse group of approximately ten people of various ethnicities, all smiling and laughing joyfully. They are packed closely together, creating a sense of community and shared happiness. The colors in the image are muted due to the lighting.

Thank You !
Any Questions?