AWS re:Invent

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AIM317

Uncover insights from customer conversations with no ML expertise required

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The Crew



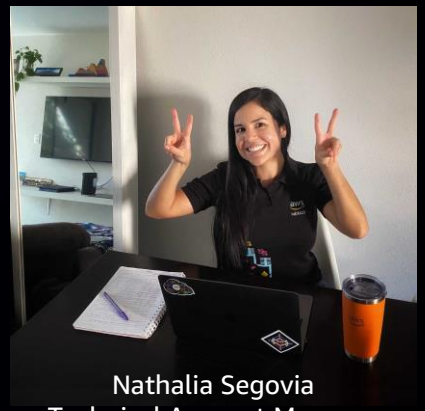
Durga Sury
Data Scientist
Blogger and rock musician



David Bounds
Enterprise SA
Builder extraordinaire



Sriharsha M S
AI/ML Specialist SA
ML Blogger and celebrity husband
(his wife is the Captain of US Women's cricket team)



Nathalia Segovia
Technical Account Manager
Expert translator



David Coon
Technical Account Manager
DeepRacer pit crew, builder
and tinkerer



Prem Ranga
AI/ML Specialist SA
Blogger and author of NLP book



Andrew Kane, AI/ML Specialist SA,
Proud Scotsman, Expert in linguistics,
ASR, and brewing beer!



Andrea Youmans, Sr. PMM AI/ML
Visionary, expert on sparkling water



Esther Lee
Sr. Product Manager, Amazon Transcribe
Avid hiker and karaoke singer



Jorge Gonzalez
Technical Account Manager
"Lost in translation"



Chethan Krishna
Sr. Solutions Architect
NLP tech wizard

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Agenda

Overview of the customer-service example

Insights from customer conversations

AWS AI services

Amazon Transcribe, Amazon Comprehend, and Amazon Translate

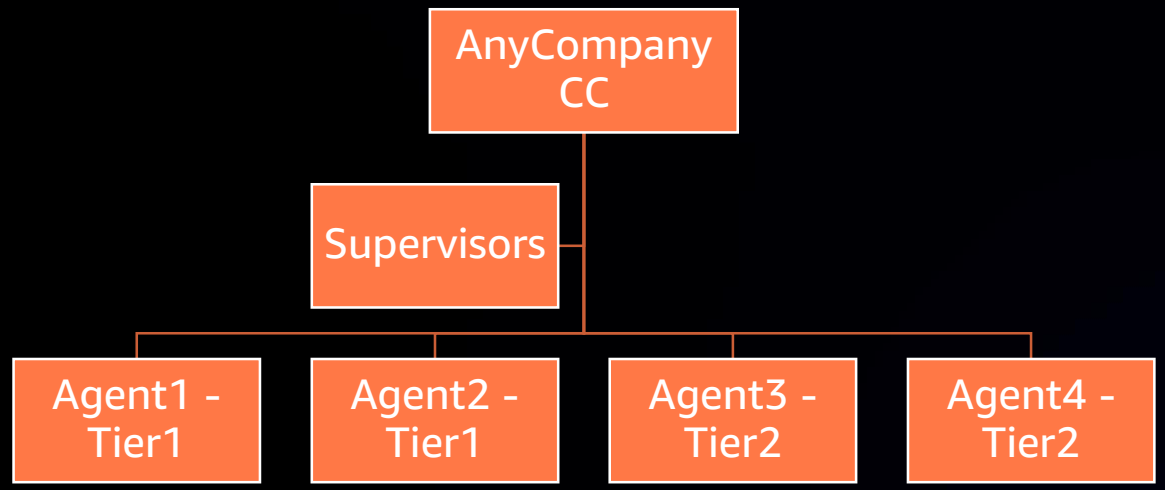
Review of solution build steps

Let’s start building …

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Example customer-service use case

In some distant galaxy in the future, AnyCompany Contact Center is a contact center for a company that builds domestic robots.



Current challenges

- Year 1 call volumes were primarily user errors, so easily resolved
- Large call volumes in Year 2 with more complex queries, many not addressed
- Customers dissatisfied with product support and so perception dropped

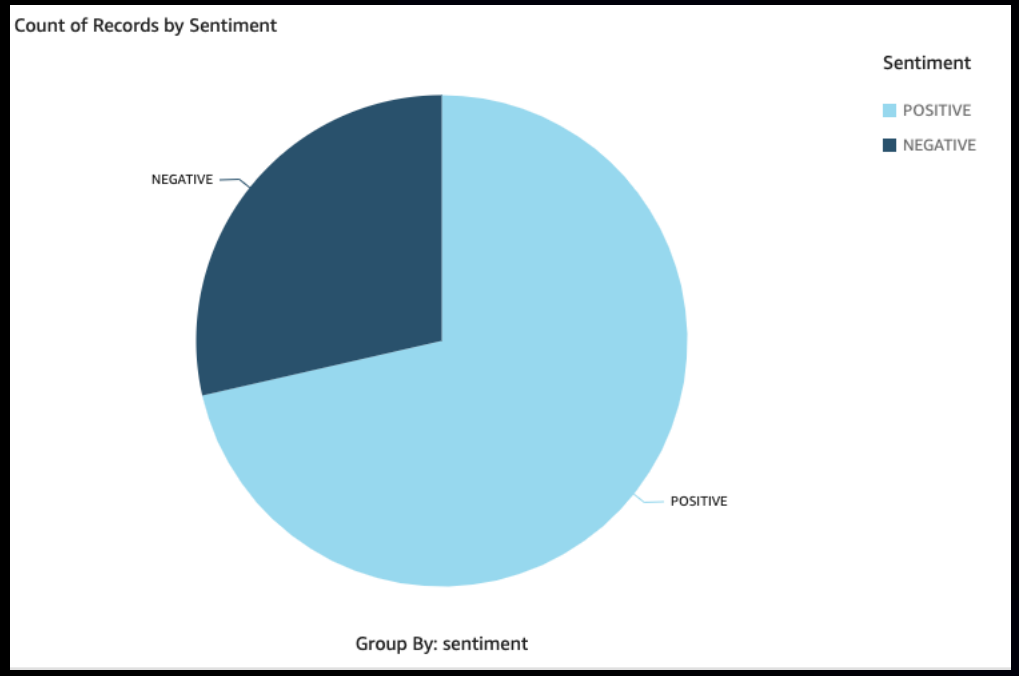
Requirements

- Setup a hierarchical routing structure, with Tier3 for specialized queries. But how to determine when to route call to Tier3?
- What are our customers actually saying? How to determine if they are happy or unhappy?
- Did the call address the customer's concern? How to determine this?
- How can senior management derive insights from customer conversations? How will these insights help?

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Why are customer conversations important?



- Sales drives revenue, but good customer service sustains it
- **75% of organizations report revenue growth through increased customer satisfaction** – Gartner 2019 Customer Experience Management Survey
- Understanding the voice of your customer is key to operational excellence
- **Call analytics can reduce average handling time by 40%, increase conversation rate from service to sales by 50%, and reduce call volumes** – McKinsey & Company

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What are AWS AI services?

USING AWS AI SERVICES TO EASILY ADD INTELLIGENCE TO APPLICATIONS



Vision



Chatbots



Business tools



Search



Healthcare



Speech



Text



Contact centers



Code + DevOps



Industrial

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Amazon Transcribe, Amazon Comprehend, and Amazon Translate

Amazon Transcribe



Automatic speech recognition

A fully managed and continuously trained automatic speech-recognition (ASR) service

Custom vocabulary, custom language models (CLM), alternative transcriptions

Derive insights such as language, speakers, call segments, speech duration, and many more

Amazon Comprehend



Natural language processing

A fully managed and continuously trained service that discovers insights and relationships in text

Analyze documents to extract terms specific to your business and industry not identified by pretrained models

Derive insights such as entities, key phrases, language, grammar and sentiment, PII, and more

Amazon Translate



Machine translation

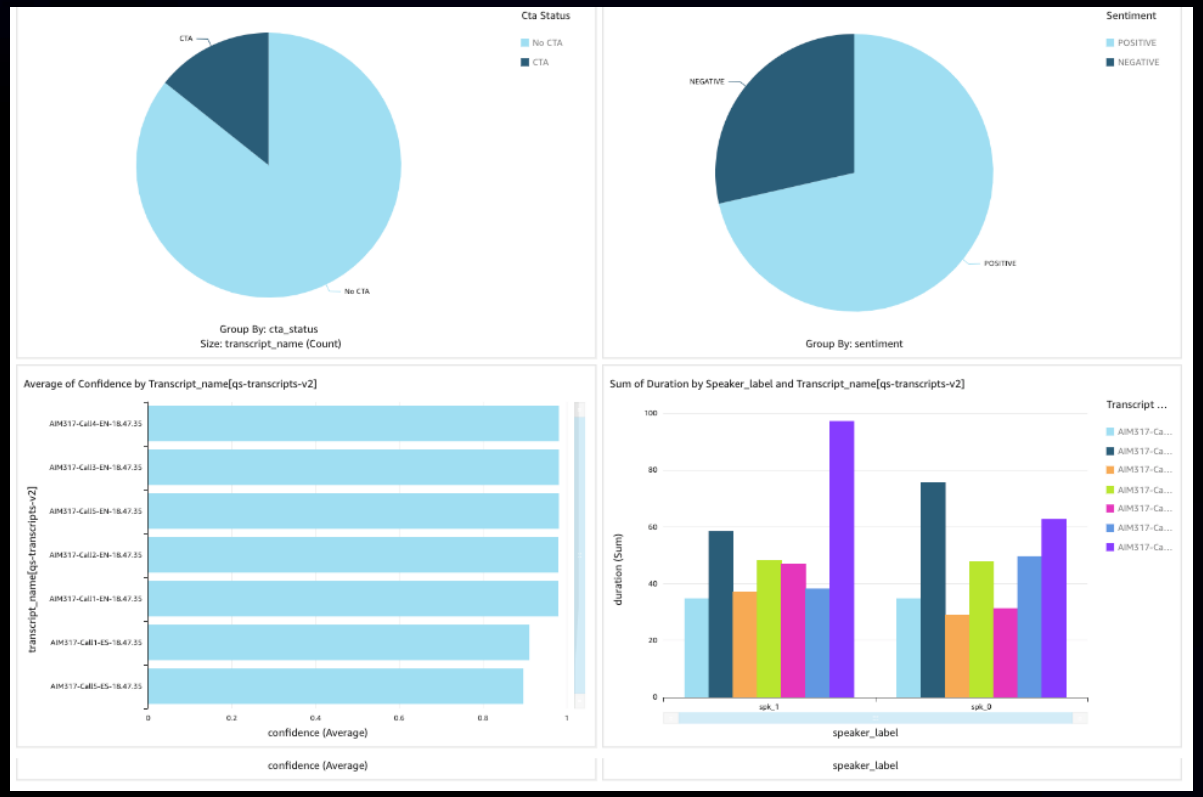
A fully managed neural machine translation service

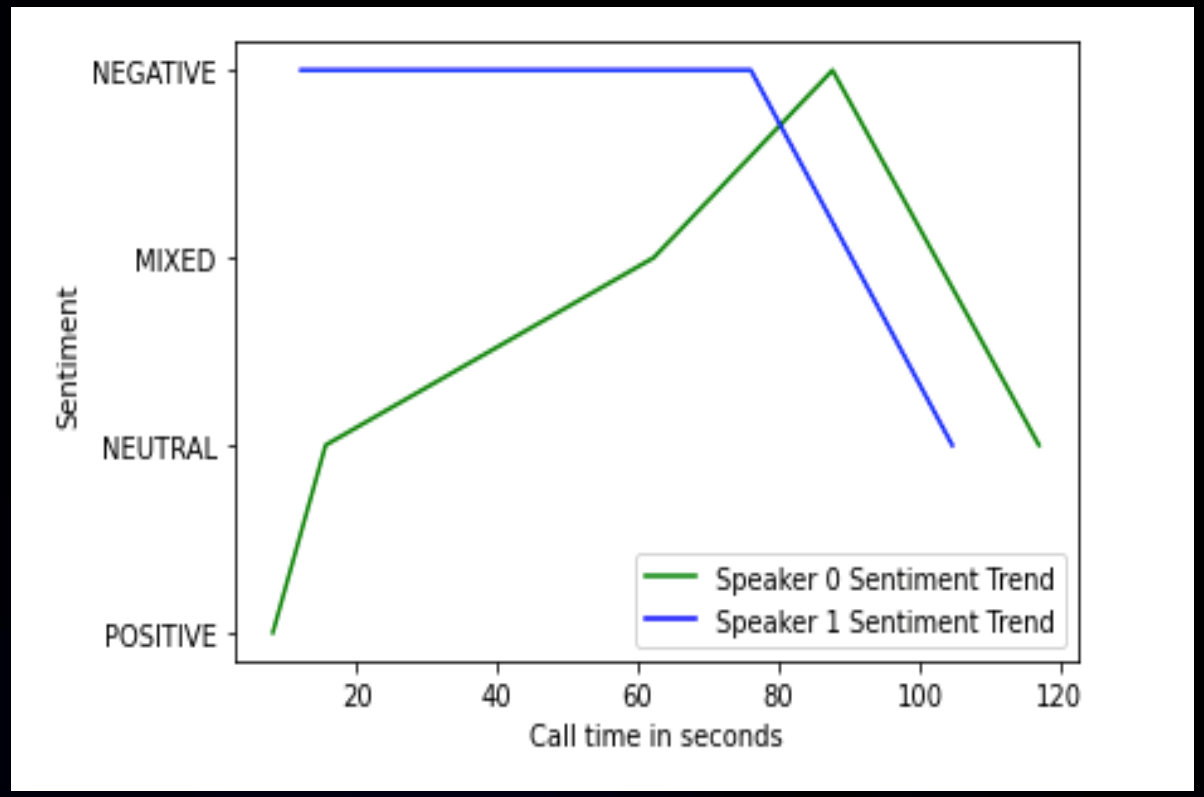
Broad language coverage, low latency, customizable translation

Continuously trained and scalable service that is easy to integrate into your applications

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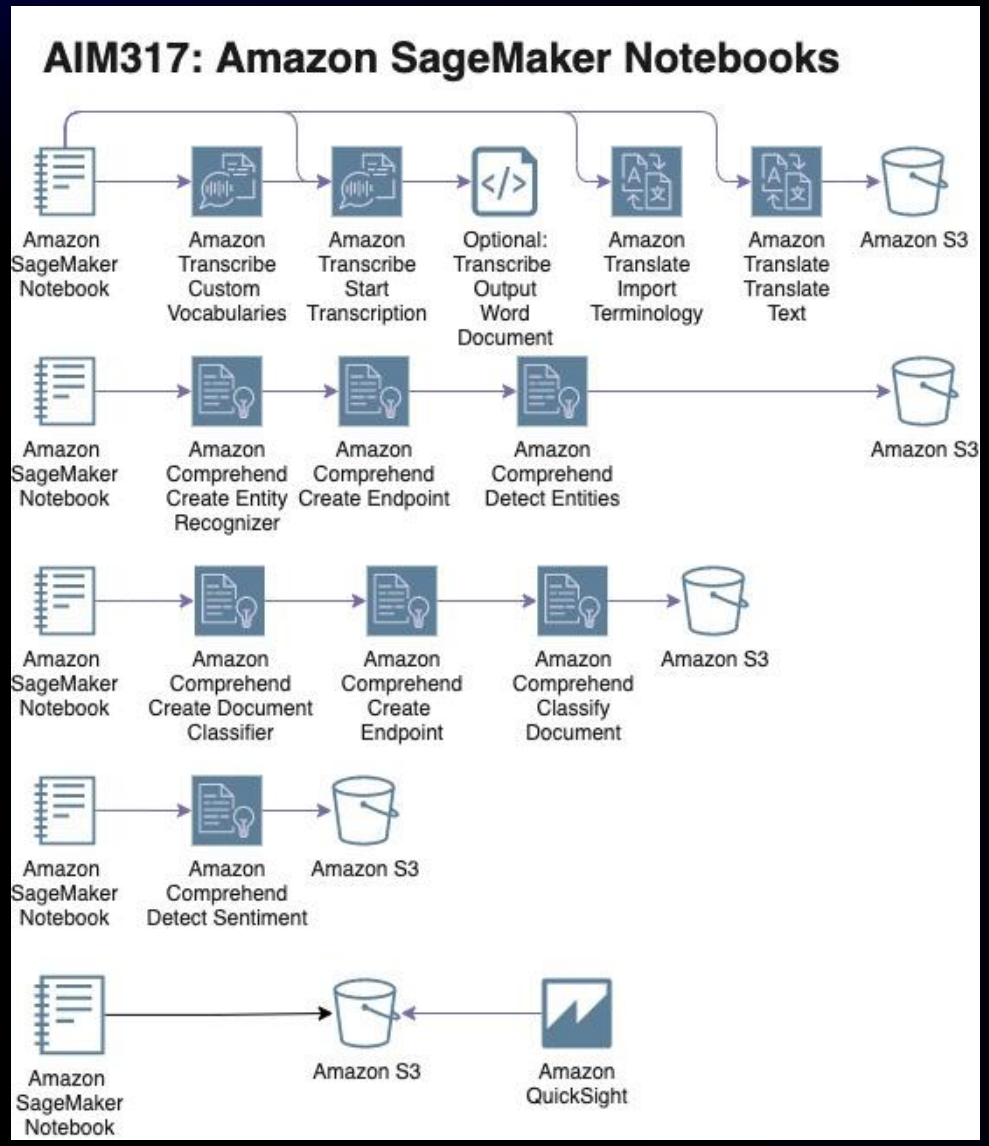
Conversation insights: What we will build





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Solution flow: How we build

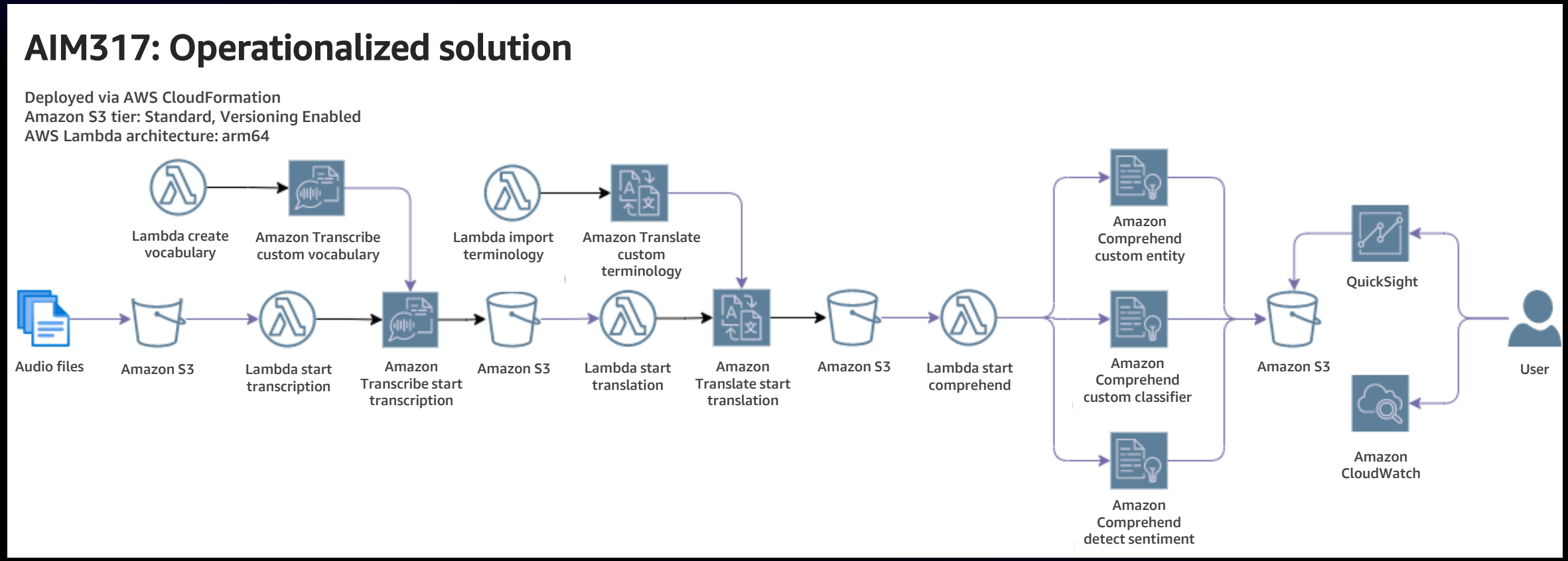


Build steps

- After completing prerequisites run 1-Transcribe-Translate SageMaker Jupyter notebook (Team member 1):
  - Use Amazon Transcribe custom vocabulary to transcribe the audio
  - Use Amazon Translate custom terminology to translate Spanish transcripts
  - Store in Amazon S3
- Run 2-Train-Detect-Entity notebook (Team member 2):
  - Train an Amazon Comprehend custom entity recognizer
  - Create a real-time endpoint
  - Detect entities in transcribed text and store in Amazon S3
- Run 3-Train-Classify-Calls notebook (Team member 3):
  - Train an Amazon Comprehend custom classifier
  - Create real-time endpoint and classify transcripts
  - Store in Amazon S3
- Run 4-Detect-Call-Sentiment notebook (Team member 1):
  - Get transcript sentiment using Amazon Comprehend detect sentiment and store in Amazon S3
- Visualize in a QuickSight dashboard (Team member 2):
  - Run 5-Visualize-Insights notebook
  - Build QuickSight dashboard using AWS console
- Deploy operationalized solution (Team member 3)

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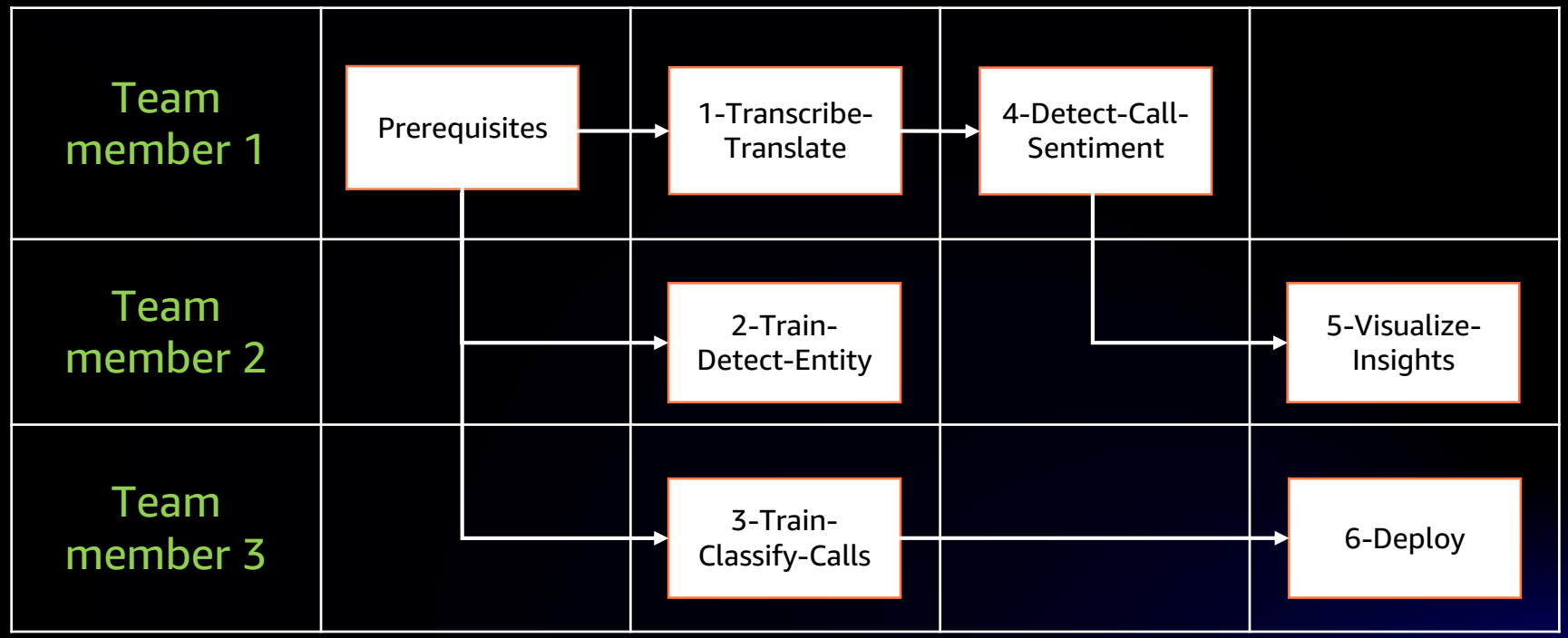
Deploy operationalized solution



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Team structure and build sequencing

- The sticker on the table should indicate your Team #
- Scan the QR code to get your AWS account hash and log in to AWS
- Workshop instructions: http://bit.ly/aim317-ws
- Arrows below indicate sequencing



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Let’s get hands on, shall we?

http://bit.ly/aim317-ws

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Thank you!

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