Team:

3

Version:

1.0

Date:

02/03/2022

Team Name:

APD

Business / Operations Sponsor:

Amazon & Tecnológico de Monterrey

Project Number:

3

Content Table

Template Change History

Date of Change	Owner of Change	Description
02/03/2022	Team 3	First version

General Project Information

1. List of project Reviewers

ID	Role	Name
1	Professor	Gilberto Echeverria
2	Professor	Esteban Castillo
3	Professor	Alan ROjas
4	Professor	David Iturriaga
5	Professor	Jose Eslava

2. List of Approvals

ID	Role	Name
1	Professor	Gilberto Echeverria
2	Professor	Esteban Castillo
3	Professor	Alan ROjas
4	Professor	David Iturriaga
5	Professor	Jose Eslava

3. Scope Statement

The main goal of this project is to provide Amazon Connect Customers a platform that will facilitate training of new call center employees. This will be done by gathering critical information about everyday agent and client interactions, so it can later be revised and used to teach new employees based on real world scenarios.

4. Introduction

In the following document we will describe how this project is going to be developed, outlining the business requirements, system requirements, objectives, architecture, roadmap, risks, dependencies, implementation, tests, and maintenance of the application.

5. Description/Objectives

Our main goal for this project is to be able to gather the screen and audio recording of an agent interacting with a client, for it to later be stored. From there, these recordings should be merged creating a video where you can see and hear how the agent works as he’s interacting with the client.

The merged recordings should be available to the call center manager by means of a web app dashboard. Through this dashboard the manager should be able to see, review and categorize each video.

6. Governance Model

- **Sponsor:** Amazon & ITESM
- **Supervisors:** All Professors of the Software Planning Course
- **Project Manager:** Carolina Ortega
- **Business Analyst:** Ximena Gonzalez

- **Architect:** Matías Ricardo Méndez Sandoval
- **Developer:** Sebastian Juncos
- **Tester:** Mateo González Cosío Ríos y Valles

7. Budget/Costs

For the development of this project our sponsor, Amazon, has given us 600 dollars. Knowing that there will be two development groups working on a solution, **we have estimated that our budget is 300 USD.**

- **Infrastructure**

  - Amazon Amplify

    This service is charged by the amount of build minutes we are going to utilize, as well as how much data we will be storing and serving a month. We are estimating that at most our build time should be between 15 and 20 hours each month, and storing and serving about 1GB of data. **Our cost estimate is 12.17 USD per month**.

  - Amazon DynamoDB

    This service is charged by the amount of storage we are going to be using, as well as how many writes and reads we will do. Estimating we will be using about 25 GB of storage and making about a million consistent writes and read to our database, **our cost estimate is 7.75 USD a month**.

  - Amazon S3 Storage

    This service is charged by the amount of storage we are going to use to store our video and audio recordings. As well, we are charged for the amount of requests we make to this storage. This is one of the most critical components of our infrastructure, so estimating we would need about 1TB of storage a month, and about 20,000 requests per month. **Our cost estimate is 26.37 USD per month.**

  - Amazon Lambda

    This service is charged by the amount requests and length of such requests we are going to make per month. Estimating we should be making around 10,000 requests a month, each one taking about 5 minutes to complete. **Our cost estimate is 17.75 USD per month.**

  - Amazon Cognito

    This service charges you for the amount of monthly active users are signing into your application. For the moment we are planning to use the free tier of this service that allows us to manage 50,000 active users. **Our cost estimate is 0 USD per month.**

  - Amazon Kinesis

    This service is charged by the amount of streams made by minute, the charge is monthly. If we record and store 200 videos a month of size 1 MB, **Our cost estimate is 1 USD per month.**

  - Amazon Connect

This service is charged by minute, each minute costs 0.0070 USD. If we estimate 200 calls of 5 minutes each per month, **Our total monthly cost is 7 USD.**

Our cost estimate is 72.04 USD per month.

8. S.W.O.T

- **Strengths**
  - Experience making friendly UI
  - Experience developing web applications
  - Experience hosting web services
  - Time spent planning the development of our project
  - Complete test plan
- **Weaknesses**
  - No Amazon API or Amazon services knowledge
  - Never managed a team this big
- **Opportunities**
  - Ability to use Amazon API's and services to facilitate development
  - Amazon support and supervision
- **Threats**
  - Poor communication with Amazon
  - Surpass cost budget
  - Poor time management

9. Justification

In this day and age, customer support is extremely important for any company. Amazon Connect is already helping their clients provide top of the line service to their customers, but as each company grows their clientele gets bigger and the necessity to hire call center agents increases. Our project aims to facilitate the training of these new call center agents by providing call center managers a platform to teach each agent with real world scenarios. This platform will facilitate and expedite training new agents assuring they maintain the quality of customer service experience.

10. Constraints

- Amazon services exclusivity
- A 300 dollar budget for all Amazon services used during the development
- Limited contact with Amazon representatives
- A 10 week development period
- A 5 week planning period

11. Dependencies

- Amazon services and API's

12. Risks

- Low Level Risks
  - Exceed the expected database storage.
  - Low video quality recordings.
  - Unintelligable audio recordings.
  - Exceeding budget cost estimate.
- Medium Level Risks
  - Video Recordings not being saved properly.
  - Data leaks.
  - Failure to encrypt user information.
- High Level Risks
  - Failure to record screen recording.
  - Failure to merge audio and video recodings.
  - Choosing a wrong Amazon service to develop the solution.
  - Incorrect management of users permissions.
  - Sensitive data leak.

13. Product Acceptance Criteria

- The web app should only give access to the video catalog if the user is a call center manager.
- The security implemented should recognize personal data.
- The recordings should download correctly into our databse following the tags given.
- The call center manager should be able to see all the recordings that were made.

14. Business Requirements

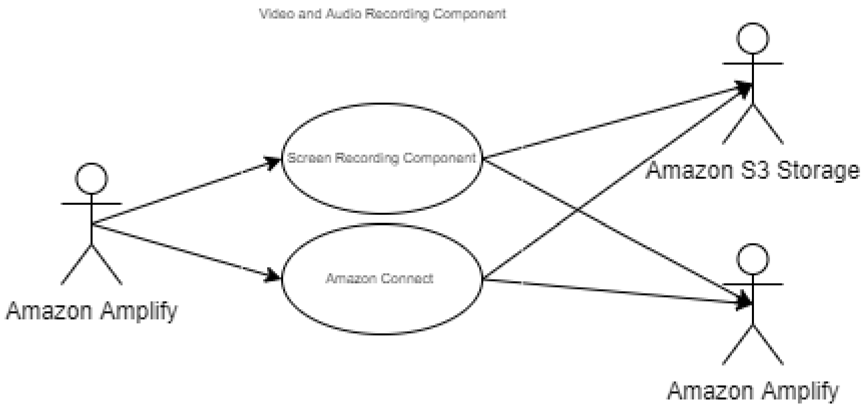
- ### 14.1 System Features
  - **Voice and Screen Recording**

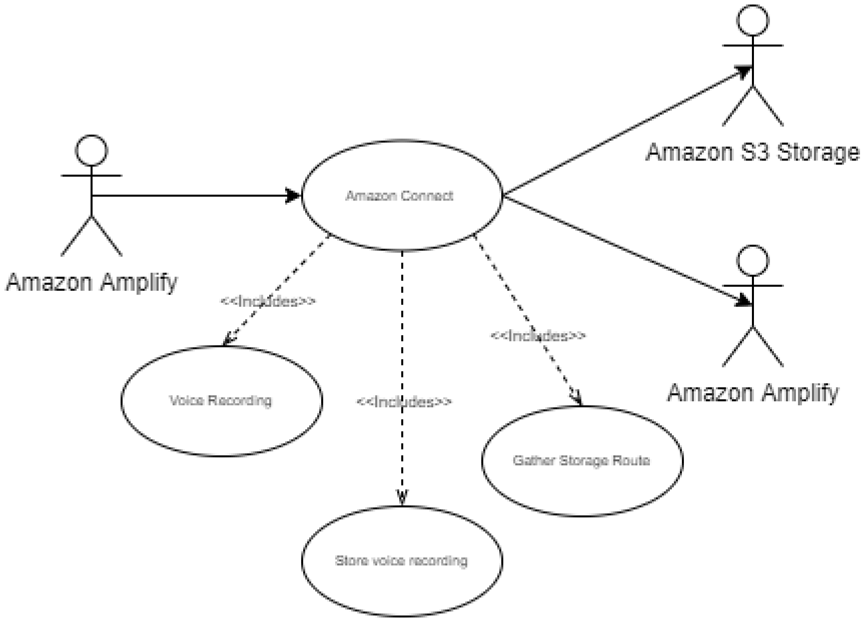
    Our application should be able to record the call center agent screen, gather the voice recording from a Amazon cConnect database and merge audio and video.

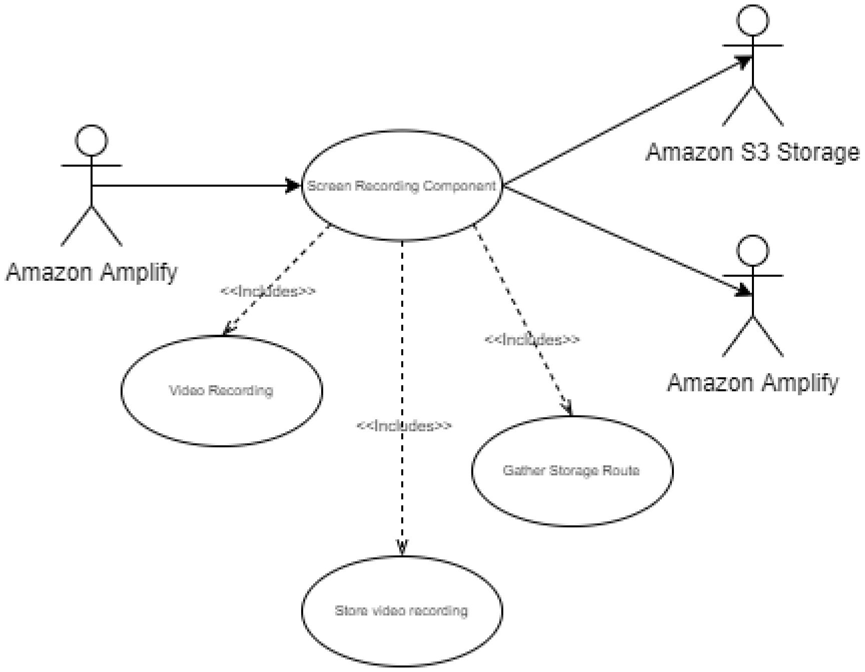
    - **Description**

      For the fulfillment of this requirement, we will introduce two components:

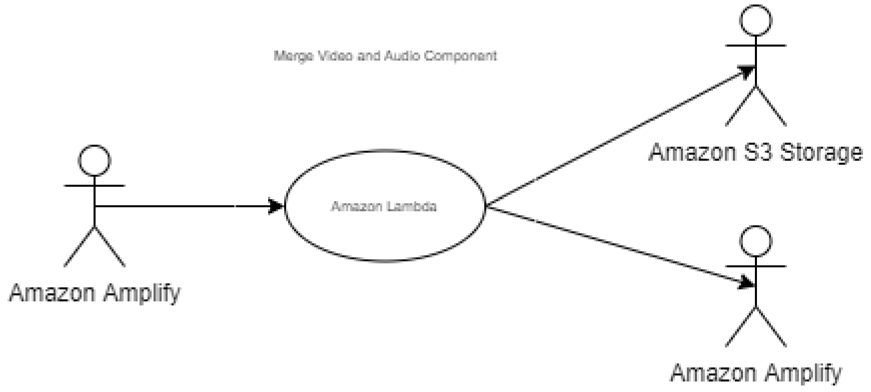
      Video and Audio Recording Component

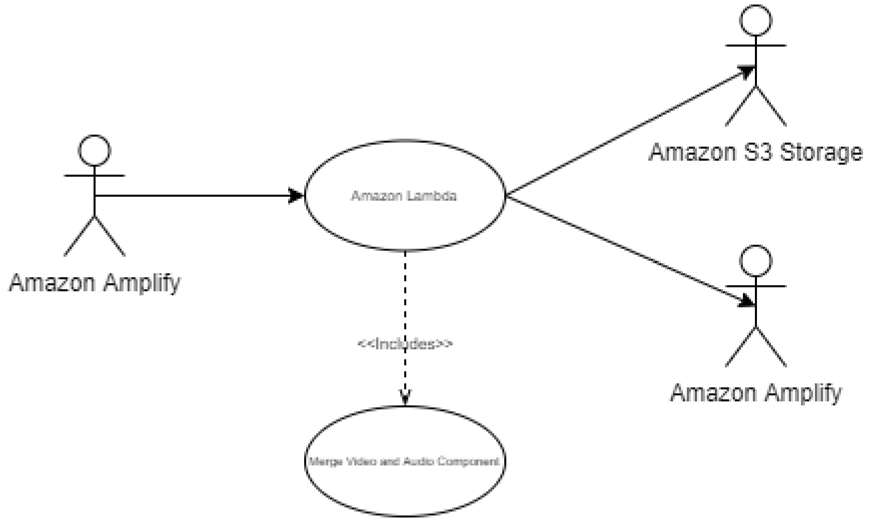

Video and Audio Recording Component
Amazon Amplify
Screen Recording Component
Amazon Connect
Amazon S3 Storage
Amazon Amplify

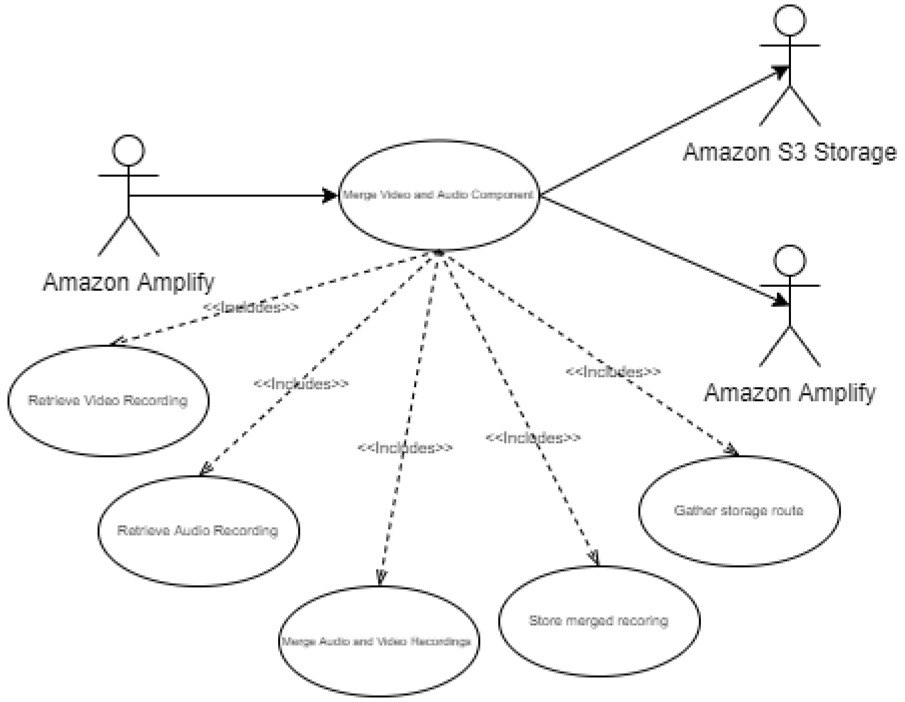




Merge Video and Audio Recording Component

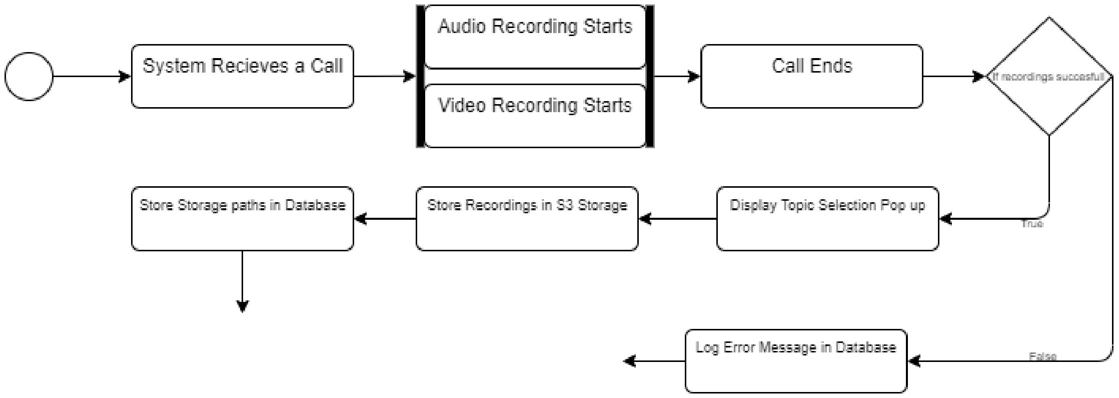




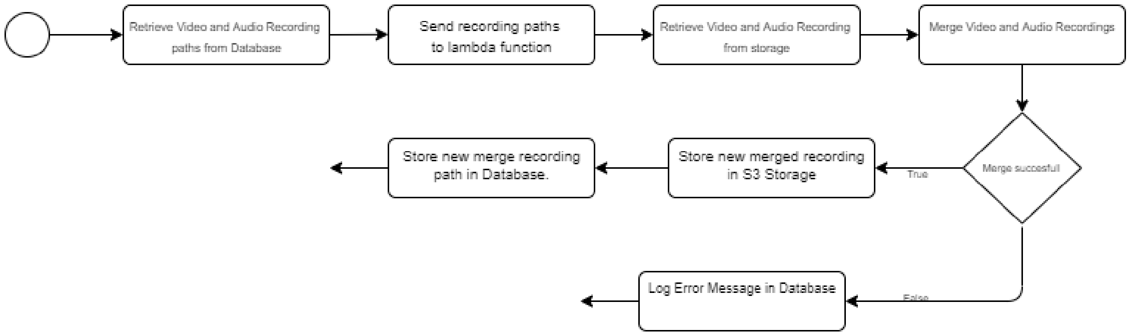


- **Stimulus/Response Sequence**

  Video and Audio Recording Component


System Recieves a Call
Audio Recording Starts
Video Recording Starts
Call Ends
If recordings succesfull
True
Display Topic Selection Pop up
Store Recordings in S3 Storage
Store Storage paths in Database
False
Log Error Message in Database

Merge Video and Audio Recording Component


Retrieve Video and Audio Recording paths from Database
Send recording paths to lambda function
Retrieve Video and Audio Recording from storage
Merge Video and Audio Recordings
Merge succesfull
True
Store new merged recording in S3 Storage
Store new merge recording path in Database.
False
Log Error Message in Database

- **Functional Requirements**

ID	**VACN1**
Name	Global Screen and Audio Recording Component.
Description	Defintion of top level functionality of this component.
Scenery	A customer calls a Amazon Connect Client Call Center.
Exceptions	Call Lasts less that 10 seconds.
Pre-conditions	Call Recieved.
Post-Contitions	Agents categorizes call.
Acceptance Criteria	Call Recieved and correctly started recording process.

ID	**VACN2-1**
Name	Voice Recording Detailed
Description	Definition of how we use Amazon Connect to record a call.
Scenery	A customer calls a Amazon Connect Client Call Center.
Exceptions	Call Lasts less that 10 seconds.
Pre-conditions	Call Recieved and correctly started recording process.
Post-Contitions	Audio Stored in S3 Storage and path sent to Amazon Amplify.
Acceptance Criteria	Voice recording correctly stored and path correctly sent to Amazon Amplify.

ID	VACN2-2
Name	Screen Recording Detailed
Description	Definition of how we use the Screen Recording Component to record the agent's screen
Scenery	A customer calls a Amazon Connect Client Call Center.
Exceptions	Call Lasts less that 10 seconds.
Pre-conditions	Call Recieved and correctly started recording process.
Post-Contitions	Video Stored in S3 Storage and path sent to Amazon Amplify.
Acceptance Criteria	Screen recording correctly stored and path correctly sent to Amazon Amplify.

ID	MAVCN1
Name	Merge Audio and Screen Recording Component
Description	Defintion of top level functionality of this component.
Scenery	Both Audio and Screen recordings have been correctly stored, and are ready to be merged.
Exceptions	Either Screen or Audio Recording is missing.
Pre-conditions	A call has been made and both Audio and Screen recordings have been correctly stored.
Post-Contitions	Storage must have sufficent space to store new recording.
Acceptance Criteria	New recording correctly merged. Audio and Screen synchronisation.

ID	MAVCN2-1
Name	Merge Audio and Video Screen Recording Architecture
Description	Definition of the Amazon Service we are going to use for our component.
Scenery	Both Audio and Screen recordings have been correctly stored, and are ready to be merged.
Exceptions	Either Screen or Audio Recording is missing.
Pre-conditions	A call has been made and both Audio and Screen recordings have been correctly stored.
Post-Contitions	Storage must have sufficent space to store new recording.
Acceptance Criteria	New recording correctly merged. Audio and Screen synchronisation.

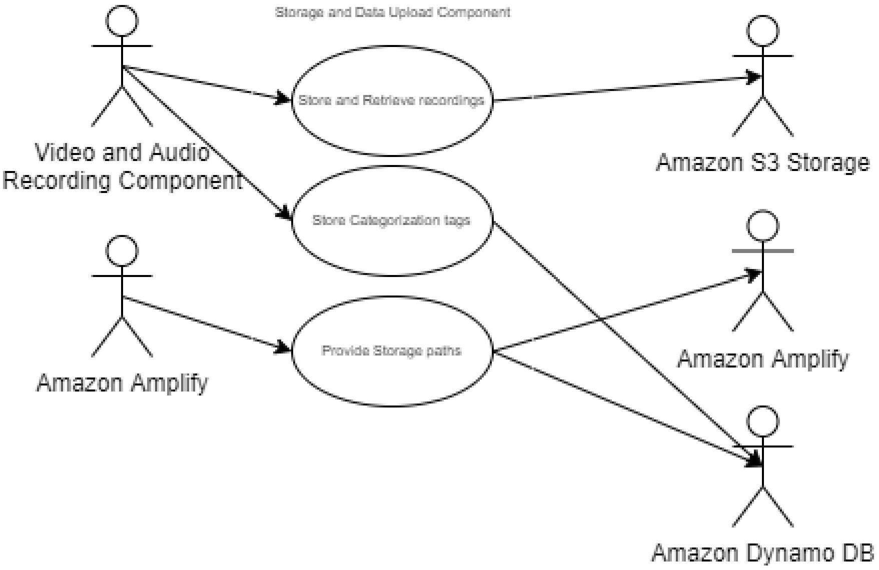
ID	MAVCN2-2

ID	MAVCN2-2
Name	Merge Audio and Screen Recording Component Functionality
Description	Definition of how the functionality of this component.
Scenery	Both Audio and Screen recordings have been correctly stored, and are ready to be merged.
Exceptions	Either Screen or Audio Recording is missing.
Pre-conditions	A call has been made and both Audio and Screen recordings have been correctly stored.
Post-Contitions	Storage must have sufficent space to store new recording.
Acceptance Criteria	New recording correctly merged. Audio and Screen synchronisation.

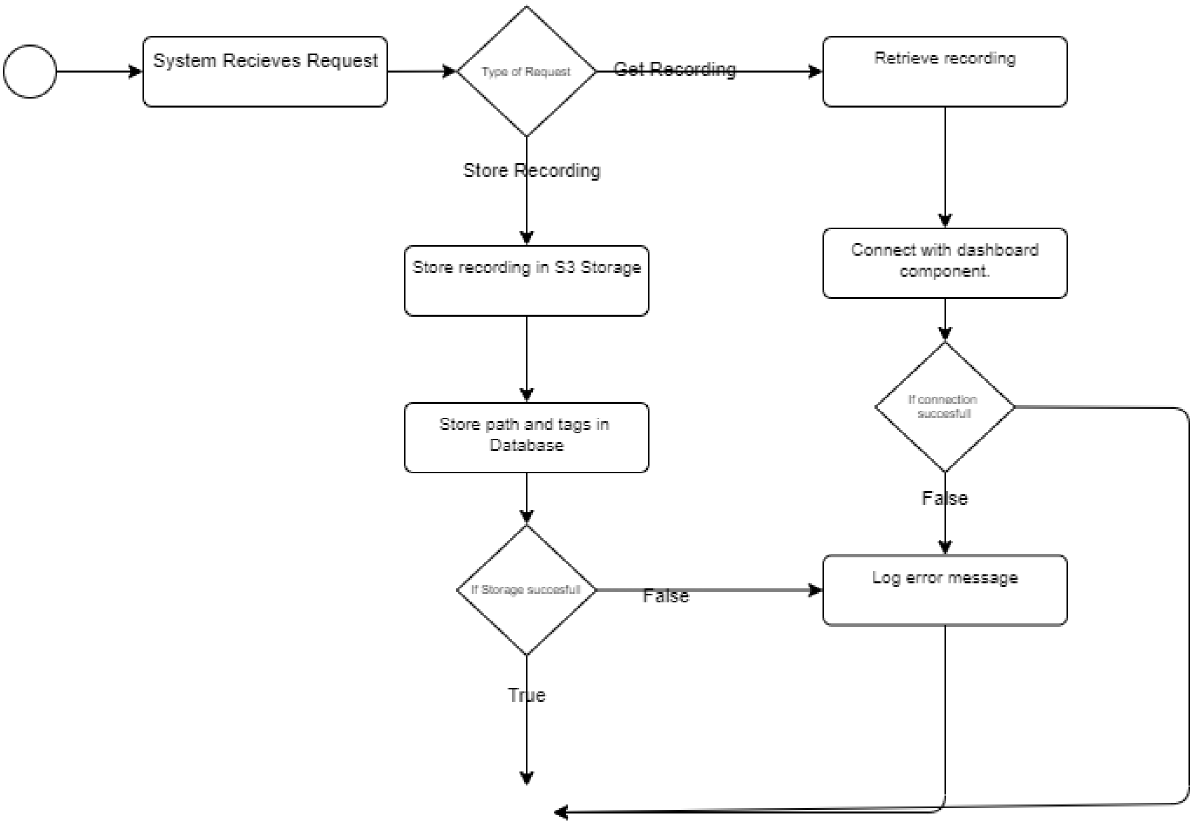
- **Storage and Data Upload**

  Our application should be able to store and upload data inside an Amazon Connect S3 Bucket. The data stored can be filtered by the used video metadata. (Tags, Day, Hour, etc.)

  - **Description**


Storage and Data Upload Component
Video and Audio Recording Component
Store and Retrieve recordings
Amazon S3 Storage
Store Categorization tags
Amazon Amplify
Provide Storage paths
Amazon Amplify
Amazon Dynamo DB

  - **Stimulus/Response Sequence**



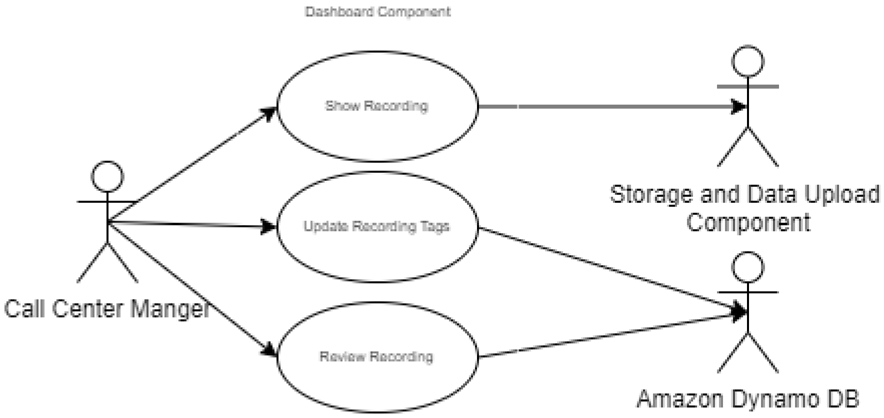
- **Functional Requirements**

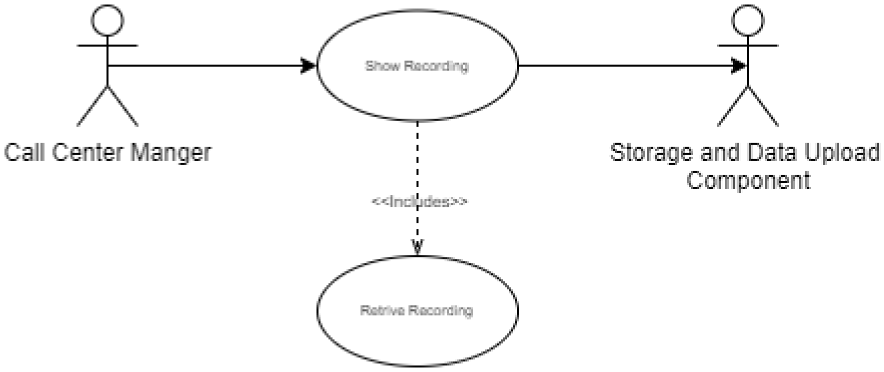
ID	SDCN1
Name	Storage and Data Upload Component
Description	Definition of how this component will work.
Scenery	Voice and Screen recordings have been made and are in need of storage and categorization.
Exceptions	Voice and Screen recording has failed.
Pre-conditions	A customer calls a Amazon Connect Client Call Center, and the Audio and Screen Recording Component has succesfully recorded and stored the customer's voice and the agent's screen.
Post-Contitions	
Acceptance Criteria	Recordings correctly stored and are available to be retrieved.

- **Dashboard View**

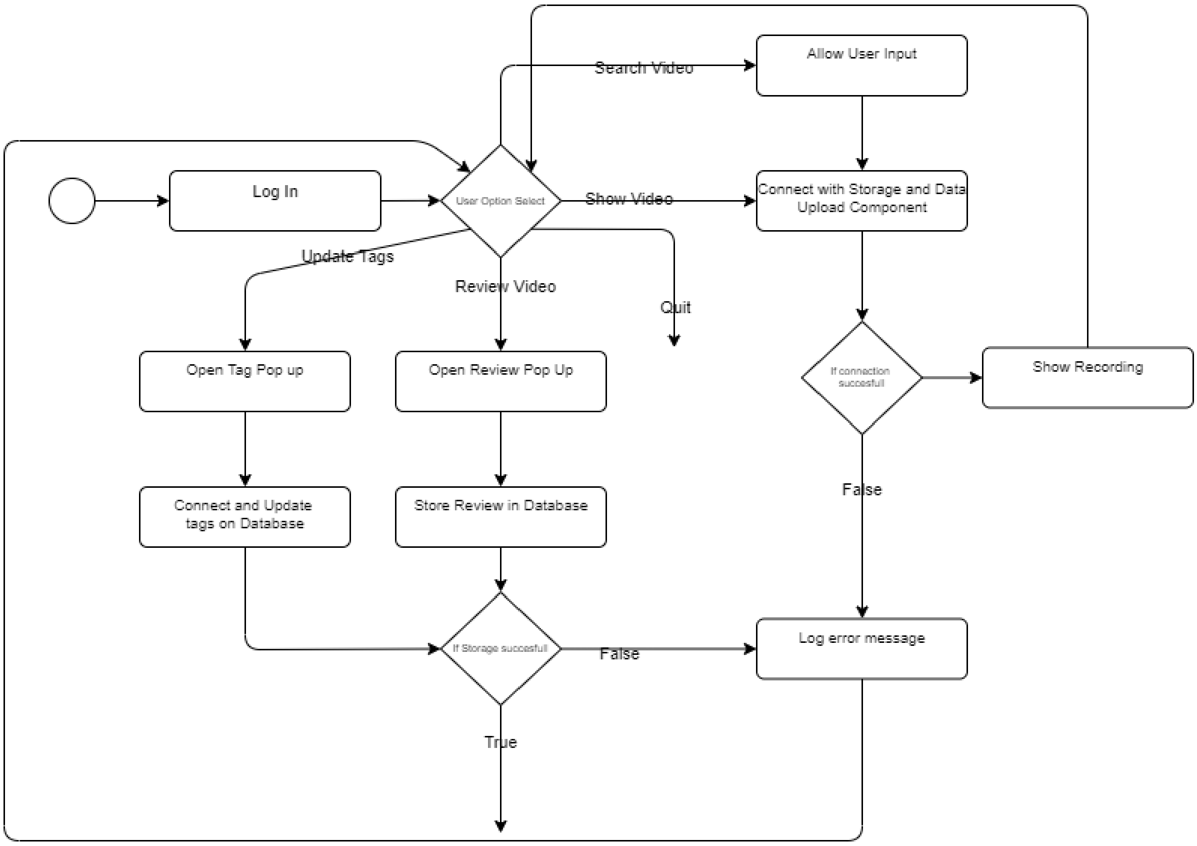
Our application should be able to show and filter the catalog of recordings stored in our database. From this screen the administrator should be able to view, edit tags, review, and delete each video shown.

- **Description**





- **Stimulus/Response Sequence**



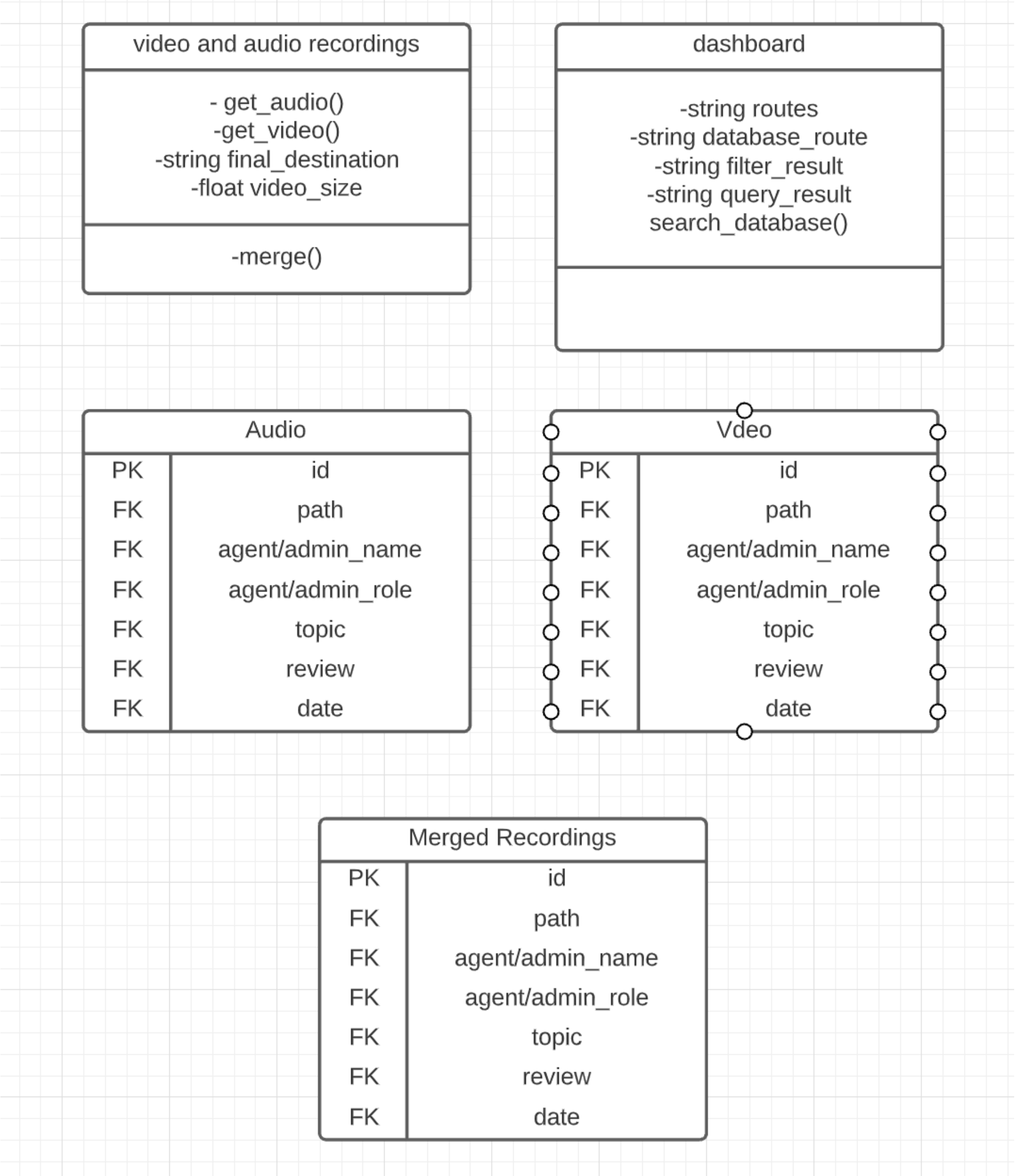
- **Functional Requirements**

ID	DCN1
Name	Dashboard Component

ID	DCN1
Description	Definition of how this component is going to work.
Scenery	A call center manager access our application platform with the right credentials.
Exceptions	The call center manager doesn't have the right credentials.
Pre-conditions	Both the Video and Audio Recording component and the Storage and Data Upload component are working correctly.
Post-Contitions	
Acceptance Criteria	The call center manager is able to interact with each video in the database.

ID	DCN2-1
Name	Retrieve merge video.
Description	Definition of how our dashboard component communicates with the Storage and Data Upload component to retrieve a specific video.
Scenery	A call center manager access our application platform with the right credentials.
Exceptions	The call center manager doesn't have the right credentials.
Pre-conditions	Both the Video and Audio Recording component and the Storage and Data Upload component are working correctly.
Post-Contitions	
Acceptance Criteria	The call center manager is able to interact with each video in the database.

- 14.2 Data Requirements
  - **14.2.1 Logical Data Model**



video and audio recordings

- get_audio()
-get_video()
-string final_destination
-float video_size

-merge()

dashboard

-string routes
-string database_route
-string filter_result
-string query_result
search_database()

Audio	
PK	id
FK	path
FK	agent/admin_name
FK	agent/admin_role
FK	topic
FK	review
FK	date

Vdeo	
PK	id
FK	path
FK	agent/admin_name
FK	agent/admin_role
FK	topic
FK	review
FK	date

Merged Recordings	
PK	id
FK	path
FK	agent/admin_name
FK	agent/admin_role
FK	topic
FK	review
FK	date

- ### 14.2.2 Data Dictionary

AUDIO	---
ID	Identifier
path	Path to the service where the file is stored.
agent_name	Name of agent.
agent_role	Role of agent.
topic	Topic of the audio.
review	Rating review from 1-5.
date	Date of the audio.

VIDEO	---
ID	Identifier
path	Path to the service where the file is stored.
agent_name	Name of agent.
agent_role	Role of agent.
topic	Topic of the video.
review	Rating review from 1-5.
date	Date of the video.

MERGED RECORDINGS	---
ID	Identifier
path	Path to the service where the file is stored.
agent_name	Name of agent.
agent_role	Role of agent.
topic	Topic of the recording.
review	Rating review from 1-5.
date	Date of the service given.

- **14.2.3 Reports**

  Technical Revision

  Inspection

- **14.2.4 Data Acquisition, Integrity, Retention, and Disposal**

  Data is going to be aquired through our application integration with various Amazon AWS Services such as: Amazon Connect, Amazon DynamoDB, Amazon Amplify, and many others. As estated above our application is divided in various components in which the data is going to be distributed.

  Data retention is identified as the service that keeps and stores safely certain information for a specified period of time. This service is very useful for businesses that have for example, a database where they store information of their clients throughout time and as a result businesses can analyze that data later on. It is important to specify that the storage of the information has to be stored according to the laws and regulations of the government as well as the industry sector.

  The decision of which data is going to be usable in the future is very important because if companies store too much unnecesary information there is a risk that the costs increase, to have less efficiency because the data is not filtered correctly and the security of the data might be in danger.

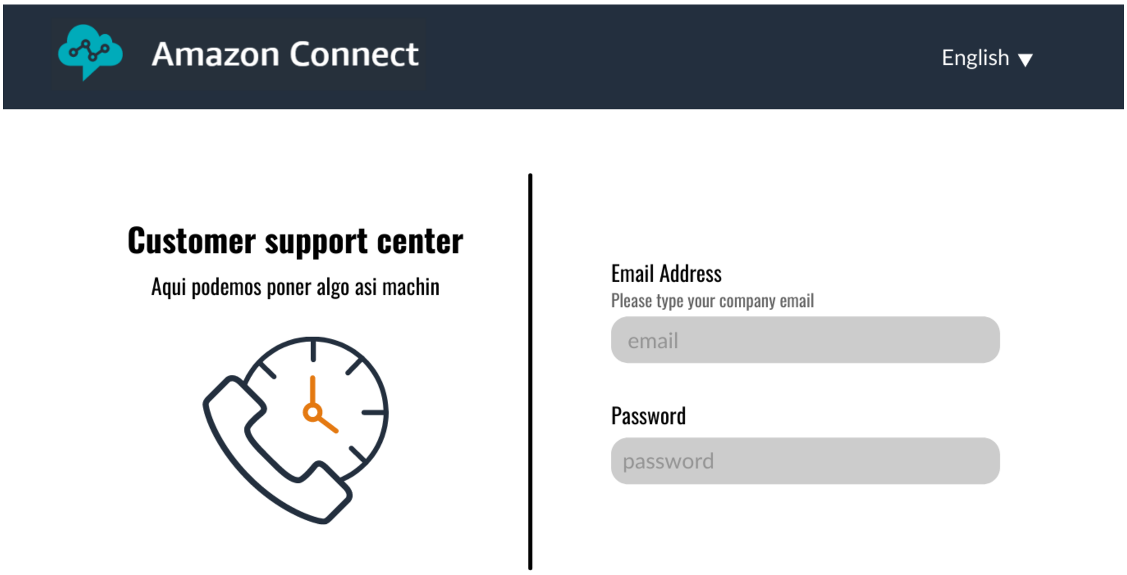
It is imperative that every project that uses data retention, has data retention policies in which it says how the business is going to use the data that will be stores, if the data is protected and how, if the storage and data are secure and according to the law and how the data will be disposed after the limit time has passed.

In other side, the necessary techniques to protect the app's data disposal are:

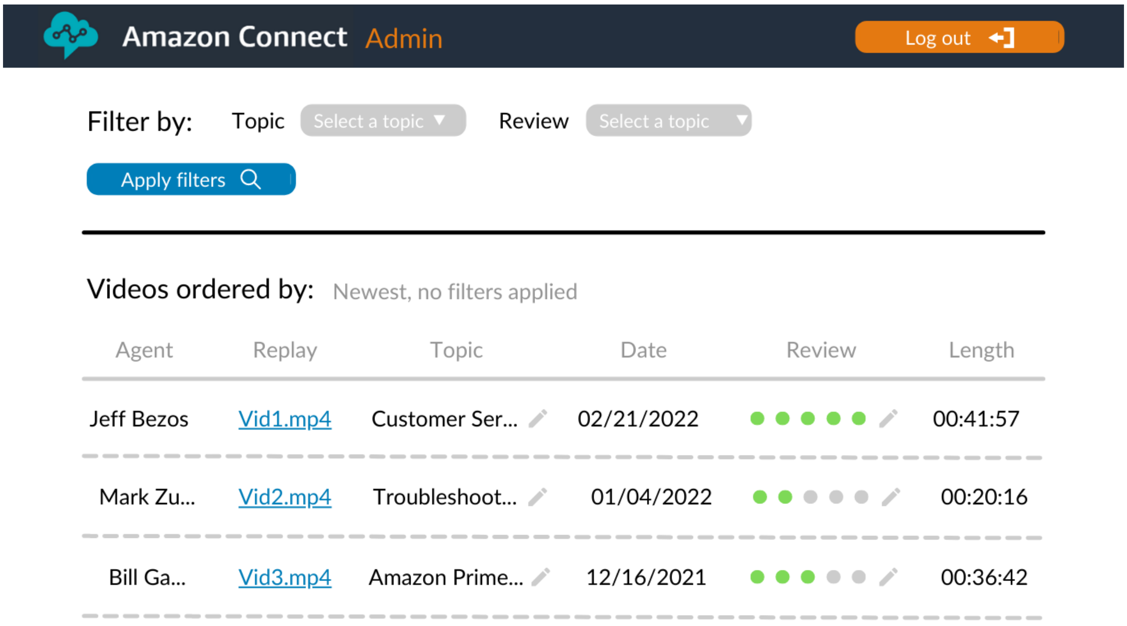
- Clearing: Clearing removes data in such a way that prevents an end-user from easily recovering it. This method is suitable for reusing devices inside your organization.
- Digital Shredding or Wiping: This method does not alter the physical asset. Instead, it overwrites data with other characters like 1 or 0 and random characters with multiple passes (e.g. DoD 5220.22-M algorithm).

- 14.3 External Interface Requirements
  - **14.3.1 User Interfaces**
    - Call Center Manager

Log In Screen



Dashboard

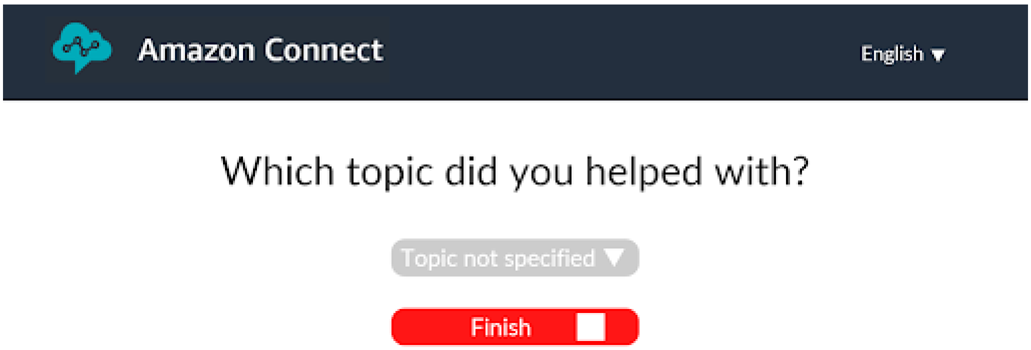


Videos ordered by: Newest, no filters applied

Agent	Replay	Topic	Date	Review	Length
Jeff Bezos	Vid1.mp4	Customer Ser...	02/21/2022	●●●●●	00:41:57
Mark Zu...	Vid2.mp4	Troubleshoot...	01/04/2022	●●○○○	00:20:16
Bill Ga...	Vid3.mp4	Amazon Prime...	12/16/2021	●●●○○	00:36:42

- Call Center Agent

Topic Selection



Which topic did you helped with?

- **14.3.2 Software Interfaces**

  - **Amazon Amplify**

    Amazon Amplify serves as the heart of our application. Here our frontend and our backend is going to be hosted. Also, Amplify allows us to connect our app to Amazon lambda functions, Amazon S3 storage, and our Amazon DynamoDB database.

    Amazon Amplify allows us to connect all these services by using their CLI, and on top of that it let's us create a continuous integration and continuous development workflow.

    Through the Amplify API we will be able to connect all our application components with ease.

- **Amazon Connect**

  Amazon Connect is a critical component of our application because it connects us directly with the call center. Here we can see how calls are rooted, how agents interact with customers and most importantly it allows us to save the voice recording of the call into an S3 bucket instance.

- **Amazon Lambda**

  The Amazon Lambda API will serve as our merge component. Through this service and their respective API's, we will be able to connect to Amazon Amplify and our storage hosted in Amazon S3. This completes a critical part in our business logic tier, which in this case will allow us to implement the appropriate solution.

- **Amazon S3**

  The Amazon S3 API component is going to allow the team to store the screen and audio recording files. This Amazon Component will be accessed through the business logic tier.

- **Amazon DynamoDB**

  The Amazon DynamoDB will be used as our primary database. Here we will store all our business data, audio and video recording paths, tags, and reviews. This service API will help us to connect it to Amazon Amplify so all our app components can access this service with ease.

- **Amazon Cognito**

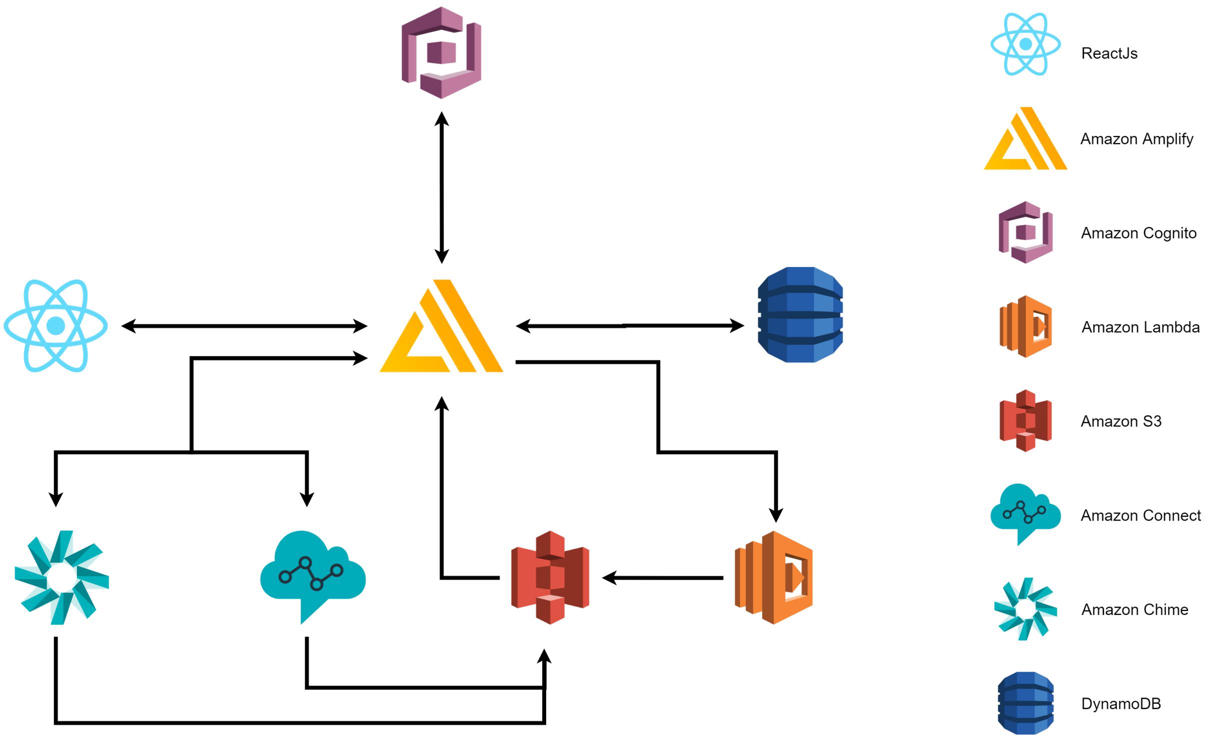
  Amazon Cognito will serve as our authentication layer. It allows us to give access to the right people at the right time. With this, it gives our app an extra layer of security, assuring our clients that their information is secure.

- **Amazon Kinesis**

  Amazon Kinesis plays an important role in our app, because it will allow us to start a screen recording as soon as a call is initiated. Through this service and their respective API, we will be able to connect it to Amazon Amplify and Amazon S3 which allows us to store and categorize the video recordings

- **14.3.3 Communication Interfaces**

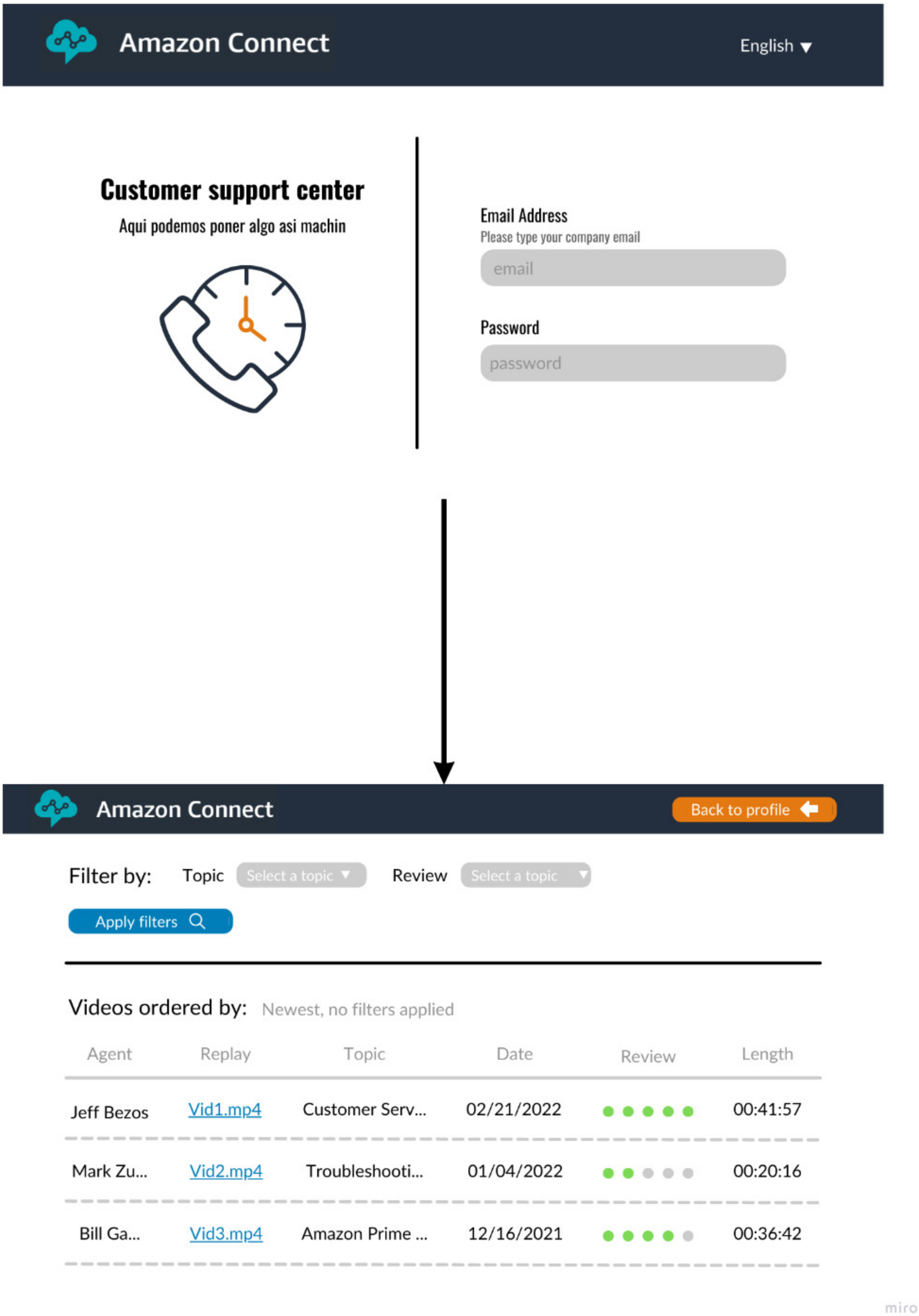
  For communicating between the Amazon services, Amazon SQS will be used, as queuing service, wich can easily help us move information between AWS. SQS uses JSON as a way of interpreting data, therefore, JSON will be the way data moves within our application.



- 14.4 Quality Attributes
    - **14.4.1. Usability**
    - **14.4.2 Performance**
    - **14.4.3 Security**
    - **14.4.4 Safety**
- 14.5 Internationalization and Localization Requirements

15. FlowChart

- Call Center Manager's FlowChart



Customer support center

Aqui podemos poner algo asi machin

Email Address
Please type your company email
email

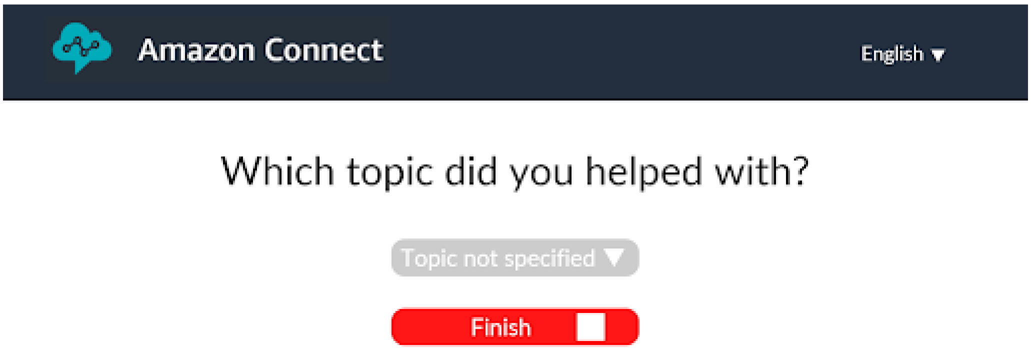
Password
password

Filter by: Topic Select a topic ▼ Review Select a topic ▼

Videos ordered by: Newest, no filters applied

Agent	Replay	Topic	Date	Review	Length
Jeff Bezos	Vid1.mp4	Customer Serv...	02/21/2022	●●●●●	00:41:57
Mark Zu...	Vid2.mp4	Troubleshooti...	01/04/2022	●●○○○	00:20:16
Bill Ga...	Vid3.mp4	Amazon Prime ...	12/16/2021	●●●●○	00:36:42

- Call Center Agent's FlowChart



Which topic did you helped with?

16. Define & Design Solution

For this project we have identified a set of critical components that allows us to test the overall performance of the system. These components are directly tied to our functional requirements, and testing them is a necessary step in assuring the quality of our development.

These components are:

- Screen Recording
- Dashboard
- Storage

17. Proposed Architecture

The chosen architecture for this project is the Layers Architecture, which will allow the team to implement this project by layers in such a way that the organization and distribution of the workload will be managed in the following layers:

- **Presentation Tier:** Data visualization, User interface and interactions.
- **Logic Tier:** Business logic layer.
- **Data Tier:** Access and management of the database implemented in Amazon DynamoDB.

Thanks to this architecture, it will be easier to develop our web application with a Model-View-Controller pattern allowing the implementation of a system of components with the desired frameworks.

18. Implementation Plan

Back-end Tier Implementation

ID	Name	Description	Start date	End date	Dependencies
1	Get recording data				

ID	Name	Description	Start date	End date	Dependencies
1.1	Start screen recording	Start recording using Amazon Chime	1st week	3rd week	1.3
1.2	Stop recording when call ends	Stop Amazon Chime and store S3 URL of both recordings (video, audio)	1st week	3rd week	1.3, 1.1
1.3	Get recording info	Send both urls and call info to back end	1st week	3rd week	
2	Merge Audio and Video				
2.1	Get video and call	Store the video and voice recording locally	4th week	4th week	
2.2	Merge locally	Merge the video and voice into a single file (.mp4)	4th week	4th week	2.1
2.3	Upload video	Send the new video to S3 and store that new video's URL	4th week	4th week	2.2
3	Upload to database				
3.1	Create database entry	Store recording information (video URL, agent's name, length, topic)	5th week	6th week	
3.2	Send query	Send query to database with new entry	5th week	6th week	3.2
4	Make available for administrator				
4.1	Make database get request	Make get request to load all videos on dashboard	7th week	9th week	
4.2	Send user to video	Make a get request to get S3 video URL, then do post request to display video	7th week	9th week	4.1

Presentation Tier Implementation (Front-end)

ID	Name	Description	Start date	End date	Dependencies
5	End call				
5.1	Display alert on browser	Show a page where the agent can select the topic the call was about	3rd week	3rd week	
5.2	Show upload complete	Display a message that the call data was uploaded to the database	3rd week	3rd week	5.1

ID	Name	Description	Start date	End date	Dependencies
6	Administrator view				
6.1	Display all videos	Show all videos that exist in the database	7th week	9th week	
6.2	Filter videos	Apply a filter to view (topic, rating, date)	7th week	9th week	6.1
6.3	Review videos	Add a review to videos (store it in the database)	7th week	9th week	6.1
6.4	Delete videos	Delete videos from database	7th week	9th week	6.1

19. Test Solution

- **19.1 Objectives**

  Our main objective in this section is to assure that during the development cycle we do not encounter a critical system errors that forces us to redefine or redevelop any component as this will be a setback during the development stage, while also assuring the quality of our application. We intend to achive this by following the Testing Strategy and Testing Process Management defined below.

- **19.2 Scope**

  For this project we have identified a set of critical components that allows us to test the overall performance of the system. These components are directly tied to our functional requirements, and testing them is a necessary step in assuring the quality of our development.

  These components are:

  - Screen and Audio Recordings
  - Merge Screen and Audio Recordings
  - Dashboard View
  - Storage and Data Upload

- **19.3 Requirements for Testing**

  Our testing requirements can be divided into 3 subsections

  - Backend Testing
  - Frontend Testing
  - Overall Testing

  The most common testing is going to be in both Frontend and Backend testing; as for the Overall testing, this means the integration of both Frontend and Backend sections to fully finish either a function, module or component. We could call Overall testing as the Testing integration process

Our specific requirements are:

- We will be using a specific format for documenting our testing
- Have a minimum RAM capacity in order to test our app
- Having the same version throughout the testing team in order to mantain testing performance
- All testers should have similar specs when it comes to hardware
- Developers must specify each testing input and output in detail, this will be shown as a comment in the code

- **19.4 Dependencies**

ID	Name of Activity/Component	Description and notes	Responsible	Initial Date	End Date	Dependencies
1.1	Capture of business requirements	Remote session with Amazon to capture business requirements	Every team member	Week 1	Week 1	
1.2	Business Requirements Revision with Amazon	Remote session with Amazon to ask final questions about the business requirements	Carolina Ortega	23/02/22	23/02/22	1.1
1.3	Business Requirements Revision with Advisors (teachers)	Session with teachers to correct details	Every team member	7/03/22	11/03/22	1.1
	Presentation Tier Implementation (Front-end)					
2.1	User Interface Design	Proposal design of app interfaces and navigation with Canva	Sebastián Juncos	22/02/2022	22/02/22	1.3
2.2	Start page interface	Implementatio n of Start page interface	Carolina Ortega	22/03/2022	28/03/2022	
2.3	Start/Stop and Save Recording component	Implementatio n of the screen recording tool with Angular	Matías Méndez	22/03/2022	08/04/22	

ID	Name of Activity/Component	Description and notes	Responsible	Initial Date	End Date	Dependencies
2.3	Admin interface to add video information	Implementatio n of interface to edit the information of the stored videos with Angular	Ximena González	22/03/22	08/04/22	
2.5	Integration of all the components	Integration of all of the front-end	Every team member	31/03/22	14/04/22	2.2 , 2.3,2.4

- **19.5 Testing Strategy**

  Our testing strategy consists in various testing levels:

  - Function Level
    - Tests whether each application feature works as per the software requirements.
  - Module Level
    - Tests each unit of these modules, we can say that it tests the smaller building blocks of the program.
  - Component Level
    - Test objects can be tested independently as components, without integrating with other components.

  For these testing levels, we will use either Black Box or White Box tests. Black box tests make sure of the functionality in these testing levels, wich means there is no attention to how the code works, as long as the result is the expected one. Black box tests will be used for Function and Module Levels.

  White box tests on the other hand, do focus on the way the conde is written without caring much for each testing result. White box tests will be used for Module and Component Levels.

  The normal flow of our testing process is: Informal Revision -> Technical Revision -> Inspection

  If any of these tests fail, we would take a step backwards to the previous testing stage, but if there's a case where technical revision fails two times, this component or module will be directly sent to inspection.

- **19.6 Testing Management Process**

  - Informal Revision

    This will take place everytime a code function is completed. During this revision the developer assigned will only be performing black box tests. This revision does not require any documentation, but it is extremely important for the module that this function takes part to have all their internal functions informally revised. This is a requisite for the module to be considered for a Technical Revision.

  - Technical Revision

This will take place everytime a code module is completed. A team consisting of at least 3 or 5 internal members and 1 or 2 external members without surpassing the 6 total members, must meet to perform this revision. During it, mostly black box tests are meant to be done, but there is the possibiliy of making white box tests as well. For this revision it is necessary to fill out a document defined in the appendix. This is extremly important because in order for the component that this module belongs to, it is necessary that every module that takes part of it has passed this revision.

- Inspection

  This will take place everytime a code component is completed. A tema consisting of at least 7 or 14 internal members and 1 or 2 external members without surpassing 15 total members, must meet to perform this revision. During it, mostly white box tests are meant to be done, but there is the possibility to performing other high definition tests. For this revision it is necessary to fill out a document defined in the appendix. This is extremy important because in order to mark as our component completed and deployed it must have passed this revision.

- **19.7 Testing Environment**

  As mentioned in Testing Requirements (19.3), all testers need personal computers with similar hardware specifications, certain RAM space and the same software version. The input and output format will also be included as comments within the code, as diferent data types may be needed for specific procedures.

- **19.8 Testing Results**

  To be done in next development chapter.

- **19.9 Conclusions**

  At this stage of the project we comprehended and reflected about the basic and important requirements to be carried out, we have identified the objectives that our socio domador (in this case Amazon) has asked us to implement, and the initial stage has been completed. When we start developing the different parts like front-end and back-end of the web application, doubts will arise about the Amazon services and how we can use APIs and documentation, as well as what will be more functional and efficient to implement in the application.

- **19.10 Appendix**

  Business Meetings Recaps

  Technical Revision

  Inspection

20. Endings

It is not possible to conclude anything by now since the implementation have not been started. However what should be analyzed is the performance of each developed component and its results. Even though we can not conclude anything, we expect the best based on our solution and our thorough description of it.

21. Glossary of Term and Acronyms

- **Front-end**
  - Views

    The interfaces that the user interacts with.
  - Filters

    The categories that a video belongs to.
  - React

    JavaScript library developed by Facebook to build Front-end interfaces.
- **Back-end**
  - Web application

    Software implementation that is rendered on web browsers
  - API

    A set of functions and procedures allowing the creation of applications that access the features or data of an operating system, application, or other service.
  - Audio and video merge

    Software implementation where the video recorded by the web application is merged in a single file with the audio recorded by the Amazon service.
- **General**
  - Concept model

    Model used to organize and plan the management and distribution of data in the database.
  - Scrum master

    Main supervisor of the SCRUM methodology process who usually functions as the leader of the team development.
  - Sprint

    This is where ideas are turned into reality, usually there is a certain period of time (ex. 4-5 weeks) in which a part of the project is developed and as a result the value increments.
  - Backlog

    The pending objectives to be achieved during a project that are usually attended and followed up during sprints.

  - Amazon Connect

    Amazon platform that allows clients to attend their customers' needs through phone calls.

  - Amazon web service

    It is a cloud platform from Amazon found on the internet and it offers different API'S and computing platforms to any client.

  - Black box testing

    Tests that check the functional output of an implementation

  - White box testing

    Tests that check the outputs of each step.

  - Lambda

    This function evaluates an expression for a given argument.