

AI-powered Career Coach Assistant

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Submission Date: 19/11/2025

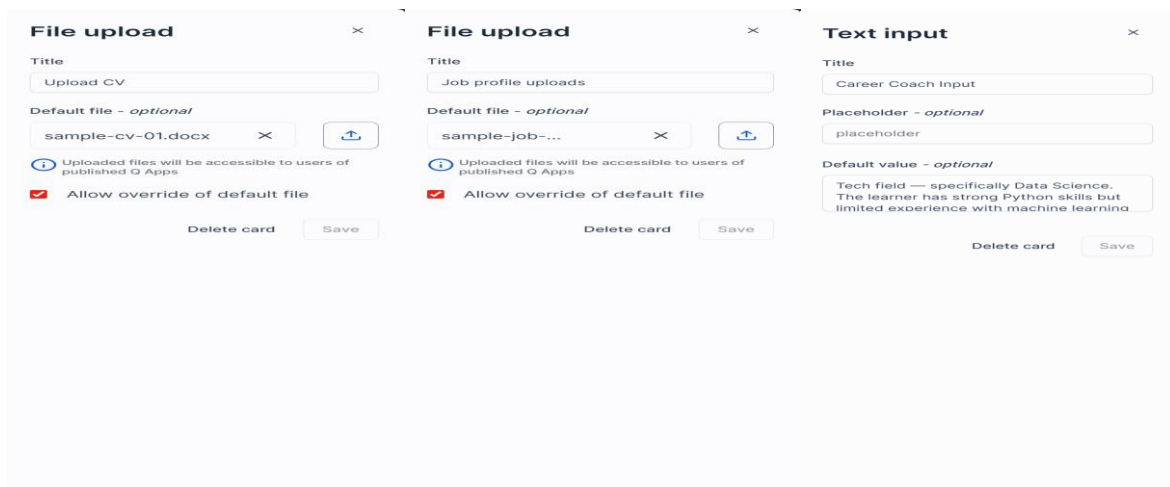
Project Overview

This project demonstrates the development of a generative AI-powered Q App using **Amazon Q Business**. The application analyzes uploaded CVs and job profiles to identify skill gaps and recommend personalized training paths. It integrates advanced interaction components, secure access controls, and dynamic data sources including Amazon S3 and static PDFs.

Core Functionality

This part summarizes the main features, including skill gap detection and personalized training suggestions to support career growth.

- **Skill Gap Analysis:** Input cards for CV and job profile uploads; output card displays skill gap results.



The image displays three screenshots of the application interface, arranged horizontally. Each screenshot shows a card with a title, input fields, and a 'Save' button.

- File upload (Left):** Title: Upload CV. Default file - optional: sample-cv-01.docx. A checkbox labeled 'Allow override of default file' is checked. A 'Save' button is at the bottom right.
- File upload (Middle):** Title: Job profile uploads. Default file - optional: sample-job-... . A checkbox labeled 'Allow override of default file' is checked. A 'Save' button is at the bottom right.
- Text input (Right):** Title: Career Coach Input. Placeholder - optional: placeholder. Default value - optional: Tech field — specifically Data Science. The learner has strong Python skills but limited experience with machine learning. A 'Save' button is at the bottom right.

Output

×

Title

Skill Gap Analysis

Prompt ⓘ

Type @ to reference a card

Write a prompt here:

Based on the uploaded resume from

Upload CV

and the job description

from

Job profile uploads

1. Identify the key skills already present in the resume.

2. List the essential skills required for the target role.

3. Highlight the skill gaps that need to be addressed.

4. Prioritize these gaps based on their importance for the target role.

Present the results in clear sections:

- Existing Skills

- Required Skills

Source ⓘ

Attached files

Delete card

Save

- Training Recommendations:** Output card suggests relevant training based on identified gaps.

☰

CareerCoachAssistant

🔍

AI-powered assistant to automate resume review, skill gap analysis, and personalized training recommendations for learners at Career4All.

⊕ Add card

🔗 Share

⋮

🗉

Chat

🔖

Library

📱

Apps

Text input

Coach Recommendation

✎

Prioritize developing key skills aligned with your major and career goals. Actively participate in real-world projects and volunteer opportunities to gain practical experience. Enhance your learning with short courses or certifications. Aim to complete this plan within 3 months.

File

Job profile uploads

✎

sample-job-description-01.docx

×

File

Upload CV

✎

sample-cv-01.docx

×

Output

Skill Gap Analysis

✎

Choose "Run" to run the app

Output

Schedule

✎

Generating text as soon as Training Recommendations is filled

Output

Training Recommendations

✎

Generating text as soon as Skill Gap Analysis is filled

🗉

Feedback

🕒

Info

🚪

Log out

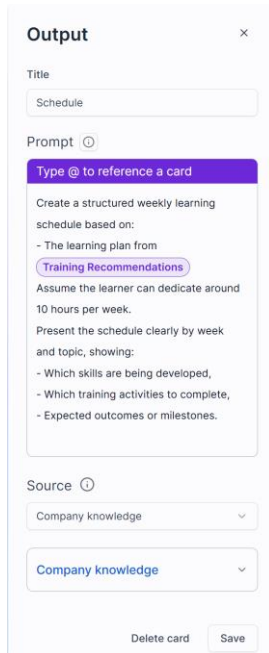
Run

▶

Advanced Interaction Components

This part describes interactive elements such as personalized schedules and coach recommendations that enhance the user experience.

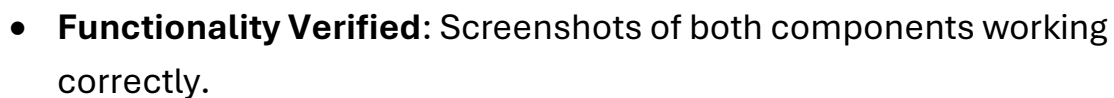
- **Suggested Schedule Output Card:** Displays a personalized training timeline.



The screenshot shows a mobile application interface for a 'Suggested Schedule Output Card'. At the top, there's a header 'Output' with a close button (X). Below it is a 'Title' field containing the word 'Schedule'. Underneath is a 'Prompt' section with a circular icon. The prompt text reads: 'Type @ to reference a card', followed by 'Create a structured weekly learning schedule based on:', '- The learning plan from', and a highlighted card reference 'Training Recommendations'. Below this, it says 'Assume the learner can dedicate around 10 hours per week.' and 'Present the schedule clearly by week and topic, showing:'. A list of bullet points follows: '- Which skills are being developed,', '- Which training activities to complete,', and '- Expected outcomes or milestones.'. At the bottom of the prompt section is a 'Source' dropdown menu with 'Company knowledge' selected. Below the source menu is another dropdown menu, also with 'Company knowledge' selected. At the very bottom are two buttons: 'Delete card' and 'Save'.

- **Coach Recommendation Input Card:** Allows users to request tailored advice from specific coaches.

- **Functionality Verified:** Screenshots of both components working correctly.



Data Source Integration

This explains how different files, including PDFs and S3 data, are connected to the system to keep information updated.

- **Static PDF Upload:** Course catalog uploaded and synced.
- **Amazon S3 Integration:** Training catalog file uploaded and synced.
- **Screenshots:** Confirm successful sync for both sources.

Data sources (1/2) Info

Search data sources

Sync now

Stop sync

Actions

Add data source

	Name	Source	Data source state	Last sync time	Last sync status	Current sync state	Access Control List
<input type="radio"/>	CareerCoach_DataSou...	S3V2	Active	November 03, 2025, 0...	Completed	Idle	-
<input checked="" type="radio"/>	Uploaded files	FILE UPLOADER	-	-	-	-	-

Uploaded files Info

Uploaded files (2)

Search files

Delete filesAdd files

	Document name	Upload time	Upload status	Status details
<input type="checkbox"/>	Additional-Course-Catalog-B.pdf	Nov 03, 2025, 9:13 AM GMT+3	Indexed	Ready to use as a source
<input type="checkbox"/>	Additional-Course-Catalog-A.pdf	Nov 03, 2025, 9:13 AM GMT+3	Indexed	Ready to use as a source

bucket-career-coaches Info

ObjectsMetadataPropertiesPermissionsMetricsManagementAccess Points

Objects (5)

Copy S3 URICopy URLOpenDownloadDeleteActionsCreate folderUpload

Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

Find objects by prefixShow versions

	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	Additional-Course-Catalog-A.pdf	pdf	October 25, 2025, 15:56:37 (UTC+03:00)	128.2 KB	Standard
<input type="checkbox"/>	Additional-Course-Catalog-B.pdf	pdf	October 25, 2025, 15:56:39 (UTC+03:00)	780.3 KB	Standard
<input type="checkbox"/>	course_access_acl.json	json	November 19, 2025, 11:29:44 (UTC+03:00)	648.0 B	Standard
<input type="checkbox"/>	data/	Folder	-	-	-
<input type="checkbox"/>	theme/	Folder	-	-	-

CareerCoach_DataSource

Info

Sync now

Stop sync

Actions

Data source details

Name

CareerCoach_DataSource

Description

-

Data source ID

666355d8-9990-4d59-89e8-35d87bb3d093

Status

Active

Type

S3V2

IAM role ARN

arn:aws:iam::061572917046:role/QBusinessDataRole

Last sync status

Successful - service is operating normally

Last sync time

Nov 03, 2025, 5:56 AM GMT+3

Current sync state

Idle

Sync history

Troubleshooting tools - new

Settings

Tags

IAM role

IAM role ARN

arn:aws:iam::061572917046:role/QBusinessDataRole

Sync scope

Data source bucket

s3://bucket-career-coaches

Access control list configuration

s3://bucket-career-coaches/course_access_acl.json

Maximum single file size

50 MB

Multi-media content configuration

Text based content

Include/Exclude file patterns

Include and exclude documents from indexing.

Account ID

061572917046

Metadata files folder location

-

Document deletion safeguard

Off

Sync schedule

Sync run schedule (UTC)

At 02:56 AM

This part covers how the app automatically synchronizes data on a schedule to ensure accuracy.

- **Scheduled Sync:** Daily sync configured for S3 data source.

The screenshot displays the AWS Management Console for the CareerCoach_DataSource. The top navigation bar shows the AWS logo, a search bar, and the account ID: 0615-7291-7046. The breadcrumb trail indicates the path: Amazon Q Business > Applications > CareerCoachAssistant > Data sources > CareerCoach_DataSource.

CareerCoach_DataSource Info

Buttons: Sync now, Stop sync, Actions

Data source details

Name CareerCoach_DataSource	Status Active	Last sync status Successful - service is operating normally
Description -	Type S3V2	Last sync time Nov 02, 2025, 5:56 AM GMT+3
Data source ID 6e6355db-9990-4d59-89e8-35d87bb3d093	IAM role ARN arn:aws:iam::061572917046:role/QBusinessDataRole	Current sync state Idle

Sync history | Troubleshooting tools - new | Settings | Tags

Sync history (2)

Status / Summary	Start time	End time	Total items scanned	Failed	Logs	Actions
Completed	Nov 02, 2025, 5:56 AM GMT+3	Nov 02, 2025, 5:59 AM GMT+3	7	0	Service is operating normally	View report
Completed	Nov 01, 2025, 5:57 AM GMT+3	Nov 01, 2025, 6:00 AM GMT+3	5	0	Service is operating normally	View report

Security and Moderation

This section outlines permission controls and moderation tools that protect data and prevent misuse.

The screenshot displays the AWS Management Console for the CareerCoach_DataSource index. A green notification banner at the top states: "You successfully synced the following data source: 'CareerCoach_DataSource', at start time Nov 01, 2025, 5:57 AM GMT+3."

Data sources Info

How it works

Index

Index name CareerCoachIndex	Index provisioning 1	Index ID 89137681-3e3c-44bf-9780-326c077d9c54
Index status Active	Document count 0	Retriever ID 8966ad53-6963-4861-99df-8e91b76fcff4
Last modified time October 04, 2025, 19:07 (UTC+03:00)	Storage used 0 Bytes	Retriever Native retriever: Starter

Buttons: Delete, Edit

Data sources (1/1) Info

Buttons: Sync now, Stop sync, Actions, Add data source

Search data sources

Name	Source	Data sour...	Last sync ...	Last sync ...	Current s...	Access Co...
CareerCoach...	S3V2	Active	November 0...	Completed	Idle	-

- **Access Control:** ACL file uploaded for CareerCoaches group (users: career.coach.one, career.coach.two).

Search

[Alt+S]

United States (Oregon)

Account ID: 0615-7291-7046
voclabs/user4372529=ffa3472e-1278-11ec-ba40-3...

Amazon Q Business > Applications > CareerCoachAssistant > Data sources > CareerCoach_DataSource > Update 53

Access control list (ACL) configuration file location - optional | Info

Locate the ACL configuration file.

s3://bucket-career-coaches/course_access_acl.json

Browse S3

Metadata files folder location - optional | Info

Locate the folder that has your metadata JSON.

Filter patterns - optional

Add a pattern to include only certain folders, or to exclude folders, file types or specific files in your repository. All paths are relative to the data source location S3 bucket. You can have a combined total of 100 patterns.

Multi-media content configuration - optional

Advanced Settings - optional | Info

Sync run schedule | Info

Tell Amazon Q Business how often it should sync this data source. You can check the health of your sync jobs in the data source details page once the data source is created.

Frequency

Select how often you want your data source to sync.

Daily

Start time

02 : 56 (UTC)

Local 05:56 AM (UTC+3)

CloudShell Feedback

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```
1  [
2  {
3      "keyPrefix": "s3://bucket-career-coaches/data/Data/Security/",
4      "aclEntries": [
5          {
6              "Name": "CareerCoaches",
7              "Type": "GROUP",
8              "Access": "ALLOW"
9          }
10     ]
11 },
12 {
13     "keyPrefix": "s3://bucket-career-coaches/data/Data/Medicine/",
14     "aclEntries": [
15         {
16             "Name": "career.coache.two",
17             "Type": "USER",
18             "Access": "ALLOW"
19         },
20         {
21             "Name": "career.coach.one",
22             "Type": "USER",
23             "Access": "DENY"
24         }
25     ]
26 }
27 ]
```

Access Denied case (career.one.coach user):

The screenshot shows the Career Coach Assistant interface. On the left is a sidebar with icons for Chat, Library, Apps, Feedback, Info, and Log out. The main header is 'Career Coach Assistant' with a 'Create Amazon Q App' button. The chat area shows a user icon and the name 'med 602'. The assistant's response is in a box: 'No answer is found. Generating an answer based on what I know... I apologize, but I notice this query "med 602" lacks sufficient context for me to provide a meaningful response. Could you please provide more details about what specific information you're looking for? This could refer to: 1. A medical course code 2. A medication number'. Below the response are tabs for 'Company knowledge' (selected), 'General knowledge', and an info icon. A text input field contains 'Ask a followup question' with a 'Plugins' checkbox and an 'Advanced search' toggle. At the bottom, a disclaimer states: 'Amazon Q Business uses generative AI. You may need to verify responses for accuracy. [AWS Responsible AI Policy](#)'.

Access success case (career.two.coach user):

The screenshot shows the Career Coach Assistant interface. On the left is a sidebar with icons for Chat, Library, Apps, Feedback, Info, and Log out. The main header is 'Career Coach Assistant' with a 'Create Amazon Q App' button. The chat area shows a user icon and the name 'career.two.coach'. The assistant's response is in a box: 'Based on the available course information, there are no specific medicine-focused courses listed in the provided materials. The documents contain information about computer engineering, computer science, basic sciences, and engineering sciences curricula, but none specifically tailored for medicine or medical studies. [1] [2] Some science courses that might be relevant as foundational knowledge include: • CHEM 1151 and CHEM 1153 (General Chemistry for Engineers and Recitation) [1] • PHY101 (Introduction to Physics-I) [2] • PHY102 (Introduction to Physics-II) [2] • MAT103 (Mathematical Methods-I) [2] In the specialized areas, CSD352 (Computational Neuroscience) might be tangentially related to medical studies as it covers CNS and basic neurobiology, including neuroanatomy and neurophysiology. [2] Could you please clarify if you're looking for pre-medical courses, courses for a medical degree, or courses that complement medical studies from a specific discipline like computer science or engineering?'. Below the response are tabs for 'Company knowledge' (selected), 'General knowledge', and an info icon. A text input field contains 'Ask a followup question' with a 'Plugins' checkbox and an 'Advanced search' toggle. At the bottom, a disclaimer states: 'Amazon Q Business uses generative AI. You may need to verify responses for accuracy. [AWS Responsible AI Policy](#)'.

Search

[Alt+S]

United States (Oregon)

Account ID: 0615-7291-7046
voclabs/user4372529=ffa3472e-1278-11ec-ba40-3...

Amazon S3

Buckets

bucket-career-coaches

data/

Data/

Security/

Security/

Copy S3 URI

Objects

Properties

Objects (1)

Copy S3 URI

Copy URL

Download

Open

Delete

Actions

Create folder

Upload

Find objects by prefix

Show versions

1

Name

Type

Last modified

Size

Storage class

course_access_acl.json

json

November 3, 2025, 15:55:03 (UTC+03:00)

1.4 KB

Standard

Search

[Alt+S]

United States (Oregon)

Account ID: 0615-7291-7046
voclabs/user4372529=ffa3472e-1278-11ec-ba40-3...

Upload succeeded

For more information, see the Files and folders table.

Close

Upload: status

After you navigate away from this page, the following information is no longer available.

Summary

Destination

s3://bucket-career-coaches/data/Data/Security/

Succeeded

1 file, 1.4 KB (100.00%)

Failed

0 files, 0 B (0%)

Files and folders

Configuration

Files and folders (1 total, 1.4 KB)

Find by name

1

Name

Folder

Type

Size

Status

Error

course_access_acl.json

-

application/json

1.4 KB

Succeeded

-

CloudShell

Feedback

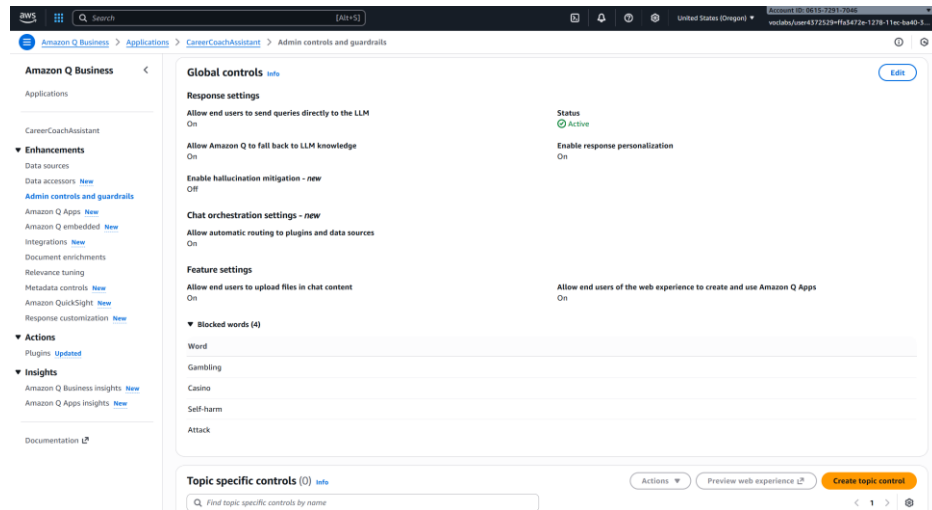
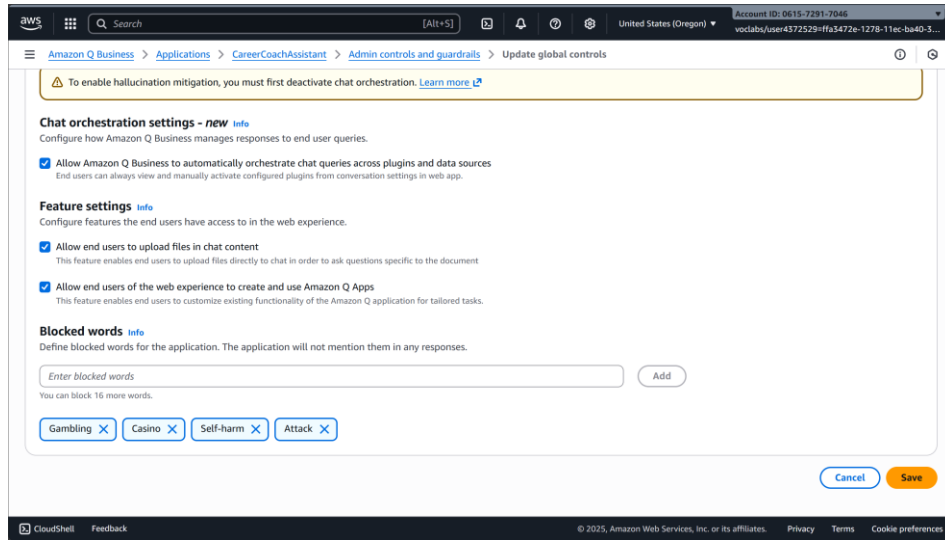
© 2025, Amazon Web Services, Inc. or its affiliates.

Privacy

Terms

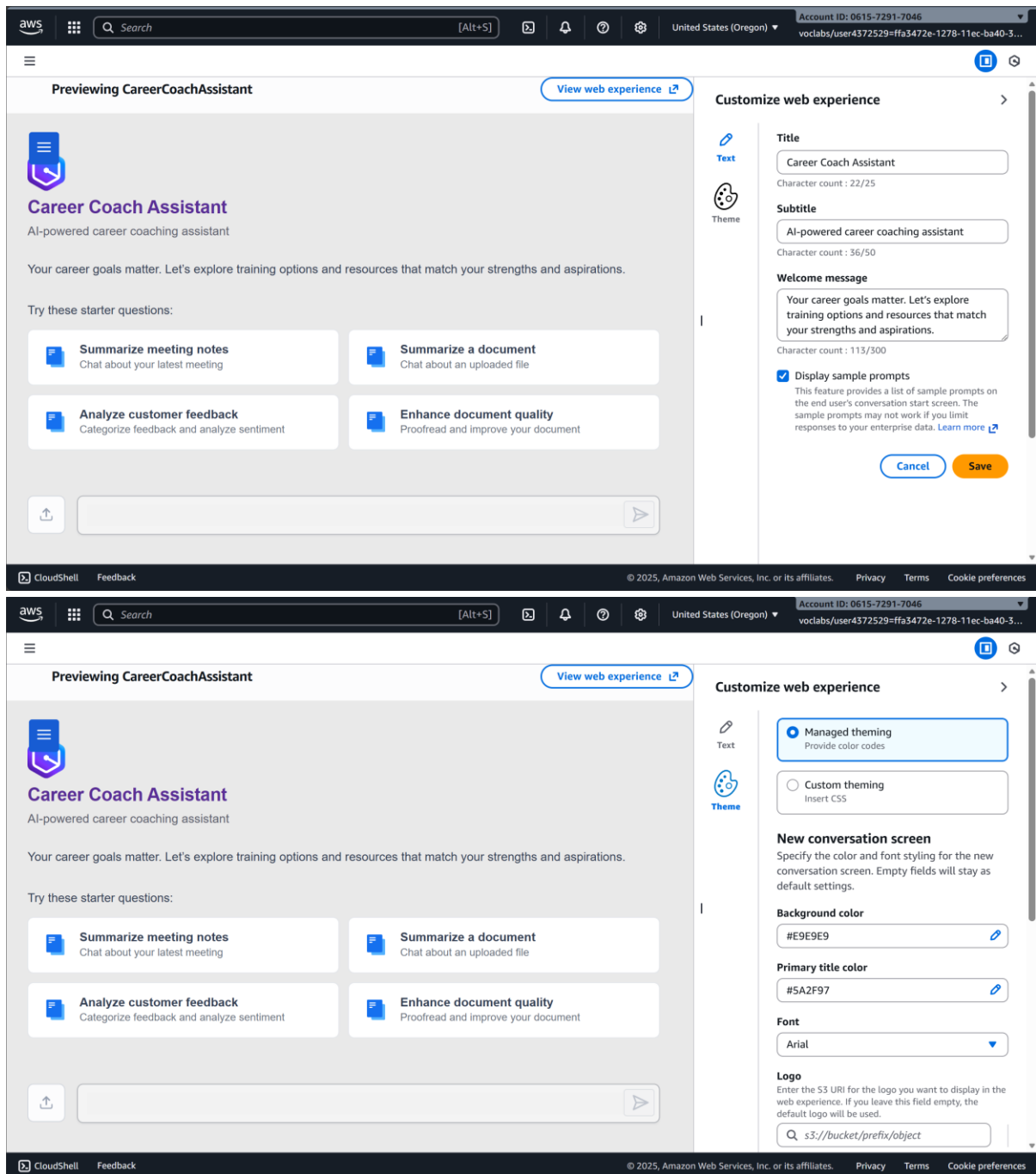
Cookie preferences

- **Content Moderation:** Global Controls list configured to block restricted keywords (e.g., Gambling, Casino).




Enhancements

Suggested improvements and future extensions of the application are summarized here.



Publish and share the application


This section represents how the publishing and sharing configuration is done as required in the seventh task.




Share your app

×


Share

 qbusiness_2@vocareum.com

Owner


 qbusiness@vocareum.com

Remove

 Share with all

Only those invited can use

☐

 Edit categories


Tag published apps to be discovered in the library

HR


Support

General

>

 App link

https://7hgmkad.t.chat.qbusiness.us-west-2.on.a...



Custom labels

Below, you can create labels of your choosing which then can be added to the apps, allowing users to filter the library by clicking on a specific label for an organized search experience.

Label	Color	
AI powered	Green	Remove
HR	Orange	Remove
Training Recommendation	Cyan	Remove
Career Coaching	Blue	Remove
CV Reviewing	Pink	Remove
General	Grey	Remove

Add new label

You can add up to 4 more label(s).

✓ Successfully updated custom labels.

Amazon Q Apps [Info](#)

[View library in web experience](#)

Apps [Settings](#)

Custom labels

Edit

Library display labels categorize published Amazon Q Apps (e.g., Finance, Marketing, HR). Labels are used to tag published Amazon Q Apps and can be filtered in the web experience library.

► Display all labels (6)

Successfully updated custom labels.

Successfully updated state of CareerCoachAssistant to Verified

Amazon Q Apps [Info](#)

[View library in web experience](#)

[Apps](#)

[Settings](#)

Published Amazon Q Apps in library (1/1) [Info](#)

[Remove from library](#)

[Update state](#) ▼

Update the state to Verified to endorse that they have been validated for quality.

< 1 > 

<input checked="" type="checkbox"/>	Name	Description	Creation time ▼	Creator	State ▼
<input checked="" type="checkbox"/>	CareerCoachAssistant	AI-powered assistant to automate resu...	Oct 06, 2025, 8:50 AM GMT+3	Career Coach Two	Verified

AI powered

HR

Career Coaching



CareerCoachAssistant

1 user | Published on November 19, 2025

AI-powered assistant to automate resume review, skill gap analysis, and personalized...



Open