

SWA H2O AI Assistant Knowledge Base BRD

KB-001 Default Collection

Creator: Ray – 2025/3/3
Reviewer: Nick/Ray – 2025/3/4
Signer:



KB-001

Default Collection

Problem Statement

Currently, users are required to manually select a collection every time they initiate a chat. This additional step creates friction in the user journey, leading to:

- **Inefficiency:** Users waste time navigating through collections, especially when they frequently interact with the same one.
- **Poor User Experience:** The extra step disrupts the flow, making the process feel cumbersome and less intuitive.

By introducing a Default Collection, we aim to streamline the user experience, reduce unnecessary steps, and improve overall satisfaction.

Business Goals

The implementation of a Default Collection feature aligns with the following business objectives:

- **Increase User Engagement:** By reducing friction, users are more likely to initiate and continue chats, leading to higher engagement rates.
- **Optimize Operational Efficiency:** Reducing the number of steps in the user journey can lower support requests related to confusion or frustration.

User Benefits

The Default Collection feature will provide the following benefits to users:

- **Time Savings:** Users can jump directly into their preferred collection without manual selection, saving time and effort.
- **Seamless Experience:** The chat process becomes more intuitive, reducing cognitive load and improving satisfaction.
- **Personalization:** Users can set their most-used collection as the default, creating a tailored experience.
- **Accessibility:** Simplifying the process makes the product more accessible to less tech-savvy users.

High-Level Requirements

1. **Default Collection Setting:** Allow users to set a preferred collection as their default.
2. **Override Option:** Provide an option to switch collections during chat initiation if needed.
3. **Guidance:** create a tooltips to explain the feature to user.
4. **Backend Support:** Store and retrieve default collection preferences.

Risks & Constraints

- **User Confusion:** Some users may not understand how to set or change their default collection.
 - **Mitigation:** Provide clear tooltips to guide users.
- **Technical Complexity:** Implementing a default collection may require changes to the backend logic and database structure.
 - **Mitigation:** Conduct a technical feasibility study and allocate sufficient development resources.
- **Over-reliance on Defaults:** Users may forget to switch collections when needed, leading to irrelevant chats.
 - **Mitigation:** Include an easy-to-access option to switch collections during the chat.

SWA H2O AI Assistant Knowledge Base BRD

KB-002

Use Management

Creator: Nick/Ray – 2025/3/10

Reviewer:

Signer:



KB-002

Use Management

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High-Level Requirements

SWA H2O AI Assistant Knowledge Base BRD

KB-003 Web Search

Creator: Yifang Chen – 2025/3/17

Reviewer:

Signer:



KB-003

Web Search

Problem Statement

The assistant is limited to its knowledge base and initial training data, which restricts access to real-time information. Users need up-to-date, cited answers for queries that require current data, but the current system cannot provide this. Integrating web search as a third knowledge source will solve this limitation.

Business Goals

- **Improve User Experience:** Deliver accurate, real-time information to boost user satisfaction and engagement.
- **Expand Knowledge Coverage:** Enable the assistant to answer a wider range of questions by accessing the internet.

User Benefits

- The Web Search feature will provide the following benefits to users:
- **Real-Time Answers:** Get the latest information for time-sensitive queries.
 - **Flexible Search Options:** Implicit web search for convenience or explicit search via a button or text command
 - **Better Accuracy:** Access to current data ensures more relevant and precise responses.
 - **Broader Knowledge:** The assistant can handle more diverse and complex questions with web access.

High-Level Requirements

- 1.**Implicit Web Search:** The assistant should implicitly (without explicit user instruction) use web search when needed to answer questions that require internet-based information.
- 2.**Explicit Web Search via Button:** Users should be able to explicitly request the use of web search functionality by clicking a "Search" button.
- 3.**Explicit Web Search via Text Command:** Users should be able to explicitly request the use of web search functionality through text commands in the message.

SWA H2O AI Assistant Knowledge Base BRD

KB-004 NL2SQL for DB Query

Creator: Ray – 2025/3/20
Reviewer:
Signer:



KB-004

NL2SQL for DB Query

Problem Statement

Currently, the AI assistant lacks access to quantitative data stored in databases like BigQuery, limiting its ability to provide data-driven insights. This creates the following issues:

- **Inefficiency:** Users must manually query databases and then rephrase results for the assistant, leading to redundant efforts.
- **Limited Capability:** The assistant cannot answer questions requiring real-time or structured data (e.g., “What is the current water production volume?”).
- **Poor User Experience:** Users expect a seamless experience where the assistant can directly interact with datasets.

By integrating BigQuery, we aim to enable the assistant to query and analyze quantitative data, enhancing its utility and user satisfaction.

Business Goals

The implementation of BigQuery integration aligns with the following business objectives:

- **Expand Assistant Capabilities:** Provide data-driven insights, positioning the assistant as a comprehensive tool for quantitative analysis.
- **Increase User Engagement:** Attract and retain users who require dynamic data analysis.
- **Reduce Operational Overhead:** Minimize manual data querying tasks for users, improving efficiency.

User Benefits

The BigQuery integration will provide the following benefits to users:

- **Time Savings:** Directly query datasets through the assistant, eliminating manual data extraction and analysis.
- **Enhanced Insights:** Access real-time, structured data for better decision-making.
- **Seamless Experience:** Switch between conversational and data-driven modes effortlessly with a dedicated Dataset button.
- **Personalization:** Admins can curate datasets tailored to specific user groups

High-Level Requirements

1. Dataset Mode Activation:

- Provide a Dataset button in the chat interface to toggle data-driven interaction.
- Persist the toggle state across sessions for user convenience.

Data Presentation:

Display query results in user-friendly formats (e.g., tables).

3. Admin Dataset Management:

- Enable platform admins to manage datasets.
- Set access controls to restrict datasets to specific user groups.

SWA H2O AI Assistant Knowledge Base BRD

KB-005 Bucket Managed Collection

Creator: Ray – 2025/3/25
Reviewer:
Signer:



KB-005

Bucket Managed Collection

Problem Statement

Currently, the AI assistant lacks access to quantitative data stored in databases like BigQuery, limiting its ability to provide data-driven insights. This creates the following issues:

- **Inefficiency:** Users must manually query databases and then rephrase results for the assistant, leading to redundant efforts.
- **Limited Capability:** The assistant cannot answer questions requiring real-time or structured data (e.g., “What is the current water production volume?”).
- **Poor User Experience:** Users expect a seamless experience where the assistant can directly interact with datasets.

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- **Personalization:** Admins can curate datasets tailored to specific user groups

High-Level Requirements

1. Dataset Mode Activation:

- Provide a Dataset button in the chat interface to toggle data-driven interaction.
- Persist the toggle state across sessions for user convenience.

2. Data Presentation:

- Display query results in user-friendly formats (e.g., tables).

3. Admin Dataset Management:

- Enable admins to connect, update, and manage datasets.
- Set access controls to restrict datasets to specific user groups.

SWA H2O Platform
H2O Assistant
BRD

KB-006

Generate bar- Share

Creator: Yifang – 2025/4/14
Reviewer:
Signer:



KB-006

Generate bar-Share

Problem Statement

Clients using the H2O Assistant platform need to share AI-generated responses externally (e.g., with colleagues, stakeholders, or partners) but currently lack a standardized and professional method. Manual sharing methods (e.g., copying text or screenshots) risk omitting critical contexts such as references, timestamps, or the original question, leading to potential misunderstandings, reduced trust in the output, and inefficient collaboration. A streamlined, automated solution is required to ensure shared content retains integrity, credibility, and traceability.

Business Goals

The implementation of the share feature aligns with the following business objectives:

- **Enhance Platform Utility:** Enhance platform utility by enabling the sharing of AI-generated content to improve both internal/external collaboration efficiency and content trustworthiness.
- **Increase Brand Visibility:** Embed H2O branding (e.g., logos) in shared PDFs to promote platform awareness when content is external.

User Benefits

The share feature will provide the following benefits to users:

- **Efficiency:** Automate PDF generation with one click, eliminating manual copying.
- **Completeness:** Ensure shared responses include all necessary context (question, answer, sources, timestamp) for accurate interpretation.
- **Credibility:** Switch between conversational and data-driven modes effortlessly with a dedicated Dataset button.
- **Portability:** Share professionally formatted PDFs suitable for presentations, reports, or archival purposes.

High-Level Requirements

- 1.Share button:
 - Provide a share button to export the generated content.
2. Export generated content as PDF, including :
 - The last question and its answer
 - References used for the answer
 - Conversation timestamp
 - Product logo

SWA H2O AI Assistant H2O Assistant BRD

KB-009 User Guide

Creator: Yifang – 2025/5/15

Reviewer:

Signer:



KB-009

User Guide

Problem Statement

When new users first encounter the H2O Assistant, they lack understanding of product function concepts (e.g., collection, AI models). Due to unfamiliarity with the product, they are unable to use certain features, and there is no clear path for quick onboarding, resulting in high training costs and frequent user issues.

Business Goals

- The implementation of the user guide with the following business objectives:
- **Reduce Customer Training and Support Costs:** Through built-in guidance, lower user learning costs and reduce the number of user questions.
 - **Enhance Successful Use of Product Features:** Help users understand Collections and AI models, enabling successful use of H2O Assistant.

User Benefits

- The user guide will provide the following benefits to users:
- **Time Savings:** Directly query datasets through the assistant, eliminating manual data extraction and analysis.
 - **Enhanced Insights:** Access real-time, structured data for better decision-making.
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High-Level Requirements

1. Concept Pop-ups

- When users visit the Collection page, a pop-up introducing Collections is displayed. The content of the pop-up varies for different user types. Only display one time.
- When users enter the Chat page, a pop-up introducing the three AI models is shown. The content of the pop-up varies for different user types. Only display one time.

2. Guided Tips:

- On the Chat page, introduce product features to different users through a tip workflow.
- For Admin, Owner, and Editor, cover: Upload Document, Document Selector, History, Document Management, Three AI Models
- For Viewer cover: Document Selector, History, Three AI Models

SWA H2O AI Assistant H2O Assistant BRD

KB-010 Non-public document

Creator: Yifang – 2025/6/3
Reviewer:
Signer:



KB-010

Non-public Document

Problem Statement

In the current product, if the user agrees to the “Ensure the file is non-confidential” clause, they may upload the file to the H2O Assistant. However, due to requirements from the cybersecurity team, any documents containing confidential or private data must not be sent to the Document AI system located outside of Saudi Arabia (KSA), which is currently hosted in Europe. Uploading such sensitive documents directly would not only violate SWA’s data privacy policy but also pose a risk of data leakage. Therefore, it is necessary to add a new "Non-public" status in the document upload to detect and block documents containing sensitive information, preventing them from being uploaded to the Document AI system in Europe. Additionally, these documents should be visibly marked with "Non-public" status in the document management interface.

Business Goals

The implementation of the non-public document with the following business objectives:

- **Ensure Compliance:** Adhere to SWA’s data privacy policy by ensuring that documents containing sensitive data are not transmitted outside the country.
- **Enhance Data Security:** Protect user data from leakage risks by integrating a sensitive information detection process.
- **Improve User Experience:** Immediately inform users of upload results and reasons during the upload process, preventing confusion caused by failed uploads or missing files.
- **Trackable Documents:** In the product’s document management module, label all documents that fail upload due to sensitive content detection as Non-public. Maintain records and tracking for these documents to support future audits.

User Benefits

The non-public document will provide the following benefits to users:

- **Protect Internal Corporate Confidentiality:** By automating the detection and blocking process, the risk of confidential information being leaked due to user error or oversight is reduced, thereby strengthening enterprise information security.
- **Instant Feedback with Clear Guidance:** When a document is blocked due to containing sensitive information, the user will immediately see a notification in the chat interface:
“[Document Name] contains confidential information and has failed to upload.”
- **Document Tracking and Management:** On the document management page, the admin(editor) can clearly view the status of each document (Success, Failure, Non-public), making it easier for the security and compliance team to conduct audits and investigations.

KB-010

Non-public Document

High-Level Requirements

1. Sensitive Information Detection Integration:

- After a document is uploaded to GCS, the system automatically invokes the DLP (deployed in Dammam) to scan its content.
- If sensitive information is detected:
The document is automatically deleted from GCS and is not sent to the Document AI system in Europe.

2. User-Side Feedback and Notification:

- Chat Page Notification:
When a document is detected to contain sensitive information, display the message:
“[Document Name] contains confidential information and has failed to upload.”
- Document Management Page Display:
If a document contains sensitive information, its status is marked as Non-public in the Document Management page. Additionally, a "Delete" option is provided in the action.

SWA H2O AI Assistant H2O Assistant BRD

KB-011 Voice Feature

Creator: Yifang – 2025/6/15

Reviewer:

Signer:



KB-011

Voice Feature

Problem Statement

The current system only supports text input and output, limiting the user experience in specific scenarios. The lack of voice functionality also restricts the product's coverage in terms of accessibility. Therefore, adding voice interaction functionality is necessary to meet customer needs.

Business Goals

The implementation of the Voice feature with the following business objectives:

- Improve user experience and satisfaction, reducing input/reading burden.
- Enhance accessibility, supporting users with visual impairments or reading difficulties.

User Benefits

The voice feature will provide the following benefits to users:

- **Quick question-asking :** Users can quickly express questions via voice input, especially when typing is inconvenient
- **Convenient answer retrieval:** The system supports reading answers aloud, helping users listen to results during tasks or when visual attention is limited
- **More natural human-machine interaction :** More intuitive and user-friendly for users accustomed to voice assistants.

High-Level Requirements

1. Voice Input Function (Speech to Text) :

- Supports voice recording for questions: Users can click a button to start recording, and the system automatically converts speech to text input.
- Allows exiting recording mode at any time.
- Supports Arabic and English.

2. Voice Output Function(Text to Speech):

- After generating answer, users can click a button to play the read-aloud content.
- Users can stop the playback at any time.
- If click stop, replay starts from the beginning.
- Supports mixed reading in Arabic and English.

SWA H2O AI Assistant H2O Assistant BRD

KB-012 Chat with temporary documents

Creator: Yifang – 2025/6/17

Reviewer:

Signer:



الهيئة السعودية للمياه
Saudi Water Authority



KB-012

Chat with temporary documents

Problem Statement

The current platform supports Q&A based on documents uploaded to a collection, but it cannot flexibly handle temporary document needs. When users want to initiate Q&A on documents not in the collection, the collection owner must upload them, resulting in a cumbersome process, complex permissions, and a mismatch with the "temporary use" scenario for these documents.

Business Goals

The implementation of the temporary documents feature with the following business objectives:

- **Enhance Product Flexibility:** Add the temporary document function, allowing users to instantly upload temporary files for Q&A without modifying existing collections.
- **Improve User Experience:** Meet more real-world use cases, enhancing user experience and satisfaction with the product.

User Benefits

The temporary documents feature will provide the following benefits to users:

- **Instant Q&A:** Users can quickly ask questions and receive answers based on temporary files without complex upload/management steps.
- **Flexible Use:** Does not affect existing collection content, suitable for infrequently used materials.
- **Data Security:** Temporary documents are only active in the current conversation, not stored by the system, protecting user-sensitive information.

High-Level Requirements

1. Upload Rule

- Supports users uploading 1 to 5 documents (PDF format) in the input box.
- Individual document size limit (≤ 50MB).

2. Temporary Document Processing Logic

- Uploaded documents are only available in the current session and not saved to the collection.
- User-friendly interaction, notifying users when document loading is complete.

KB-012

Chat with temporary documents

High-Level Requirements

3. Q&A Model

- At the current stage, the Gemini AI model is used to handle questions based on temporary documents.
- Does not integrate with Knowledge Base, Dataset, Web Search mode right now.
- Friendly Prompt for Unavailable Features After Uploading Temporary Documents

4. Chat Experience

- After uploading documents, users can naturally ask questions, and the system responds based on the uploaded documents.
- Supports adding or removing temporary documents during the session.

5. History and Storage

- After the session ends, temporary documents are automatically deleted and not persistently stored in the system database.
- Chat history retains Q&A generated from temporary documents, including the temporary document names.

6. Future Scalability

- The system architecture reserves interfaces to support future integration of temporary documents as input sources with advanced features like Deep Thinking, Web Search.

SWA H2O AI Assistant H2O Assistant BRD

KB-011 Voice Feature

Creator: Yifang – 2025/6/15

Reviewer:

Signer:



KB-011

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SWA H2O AI Assistant H2O Assistant BRD

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Creator: Yifang – 2025/6/17

Reviewer:

Signer:



الهيئة السعودية للمياه
Saudi Water Authority



KB-012

Chat with temporary documents

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KB-012

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