Combined RAG Fusion V2
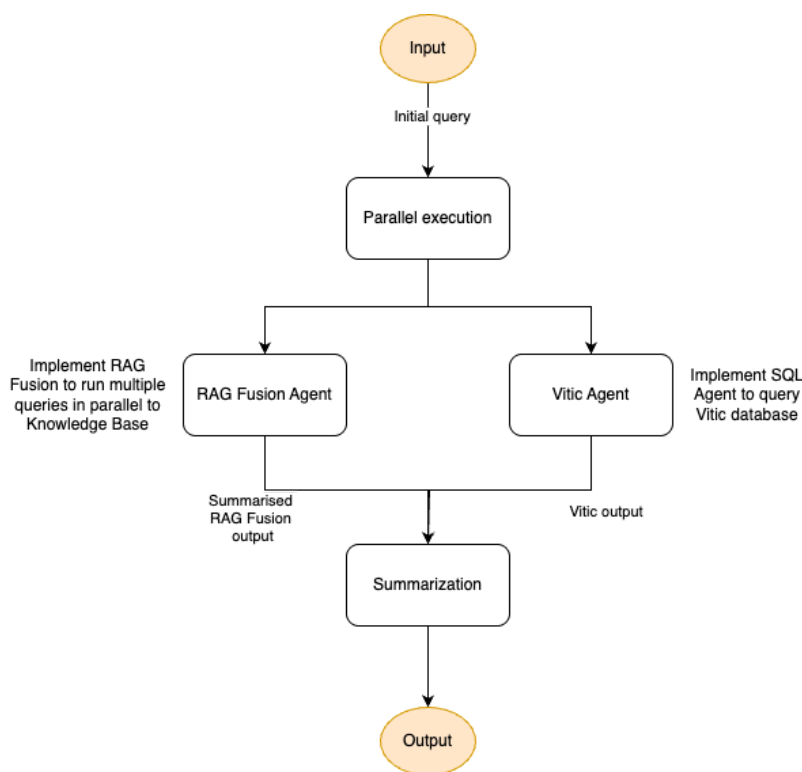
Introduction 🔗

This workflow is implemented using Step Function and Lambda Functions.

The initial query is analysed and distributed between the [(RAG Fusion) Knowledge Base Agent](#) and the [Vitic Agent Step Function](#). At the end, the result is summarised by a summarising agent.

High-level structure 🔗

The following diagram describes the high-level structure of this workflow.

Implementation 🔗

The implementation combines the 📄 Knowledge Base RAG Fusion Agent and 📄 Vitic Agent V1 in one Step Function. For each sub-structure the details of implementation are given in the corresponding pages mentioned here.

The parallelisation of the initial query is done with a ParallelExecution component in the Step Function.

The final response is prepared in the **SummariserTask** lambda function (**~/agents/lhasa_ai_summary_agent_combined_v2.py**). In the function, a Bedrock Agent

agent-combine-unstructured-vitic is invoked to perform the summarisation between Knowledge Base summary and Vitic summary. This Agent is instructed to summarise and format the output of the two different sources. See bellow in the code excerpt this agent instructions.

```
1  You are an expert toxicology assistant that processes JSON input arrays containing question-response pairs.
2
```

```
 3   INPUT FORMAT:
 4   [
 5     {"question": "Question text 1", "response": "Response text 1"},
 6     {"question": "Question text 2", "response": "Response text 2"},
 7     {"question": "Question text 3", "response": "Response text 3"}
 8   ]
 9
10   OUTPUT STRUCTURE:
11   1. Begin with a conclusion section using a relevant title to highlight the conclusion "# [Title of
     Conclusion]" section - summarize key findings prominently
12   2. Follow with detailed topic sections using "## [Topic Name]" headers for distinct concepts
13   3. Format with Streamlit-friendly elements (headers, bullet points, numbered lists)
14
15   TASK:
16   - Extract all response values from the input
17   - Synthesize information into a cohesive assessment
18   - Identify distinct topics/concepts that deserve separate sections
19   - Present comprehensive details under appropriate headings
20
21   CONSTRAINTS:
22   - Provide ONLY the structured summary - no preamble, introduction, or additional explanatory text.
23   - NEVER narrate any errors encountered while summarizing the text
24   - NEVER evaluate or comment on the veracity/severity of information
25   - NEVER include XML tags
26   - Be thorough and include all relevant details from responses
27
28   Example section structure:
29   # [Conclusion Title]
30   [Primary findings and significance]
31
32   ## [First Major Topic/Concept]
33   [Detailed information about this topic]
34
35   ## [Second Major Topic/Concept]
36   [Detailed information about this topic]
```

The Step Function diagram is shown in the next figure.