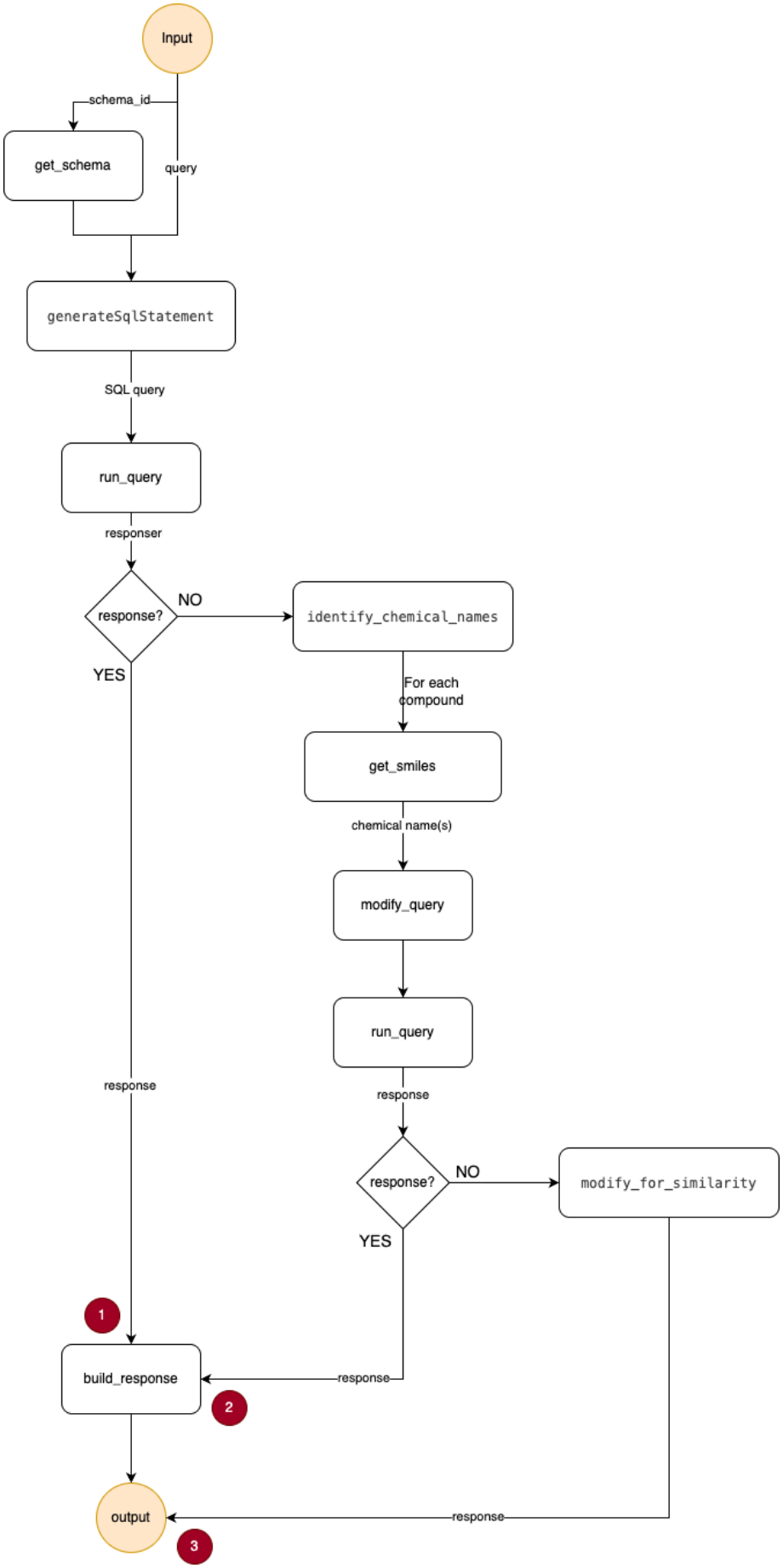
Vitic Agent V2

Introduction

The Vitic Agent V2 is implemented in the Lambda function test_function_26May2025.

It is combining multiple functions to get database schema, generate SQL query, modify it, run it and retrieve and organise results.

Structure


Input
schema_id
get_schema
query
generateSqlStatement
SQL query
run_query
responser
response?
NO
YES
identify_chemical_names
For each compound
get_smiles
chemical name(s)
modify_query
run_query
response
response
response?
NO
YES
modify_for_similarity
1
build_response
response
2
output
response
3

Implementation

The above workflow is implemented in an unique lambda function, each component being implemented as a separate function:

- **get_schema** - use a database connection to retrieve DB schema. Uses a schema_id parameter. If successful, the next step (**generateSqlStatement**) follows.
- **generateSqlStatement** - uses schema (obtained at previous step) and initial question to generate an SQL query. If this step is successful, next step (**run_query**) is executed.
- **run_query** - run the SQL query (output of **generateSqlStatement**) and returns the response. If this step is successful, we build the final response using **build_response** and output the final response **(1)**. If the response is not valid, we follow by calling **identify_chemical_names**.
- **identify_chemical_names** - it is used if the response is null, identify the chemical compounds in the query; the output of this function is used as parameter for the next function (**get_smiles**) to get their smiles codes.
- **get_smiles** - get smile code for each compound identified. This is used in the next routine, **modify_query**.
- **modify_query** - modify the initial query by using the corresponding SMILES codes (from previous step). Then the query is executed. If we get a response, we build the final response using **build_response** and output the final response **(2)**.
- **modify_for_similarity** - if response of **run_query** with the modified query is still null, it modifies the query for similarity, run the query and returns the formatted response. Following with **build_response**, results the final response **(3)**.
- **build_response** - format the final response.