The Menti Ice Cream Parlor

Overview

The Menti Ice Cream Parlor is an interface designed to interact with a custom API, facilitating operations like menu retrieval, order placements, feedback submissions, inventory checks, restocking, and generating customer satisfaction reports. This project leverages AWS RDS for database management and AWS Lambda for API interactions.

API Docs: https://ujs5smnta2icm5oinwcfjdg2hy0rxtsa.lambda-url.ap-southeast-1.on.aws/docs

Streamlit App: https://ice-cream-parlor.streamlit.app/

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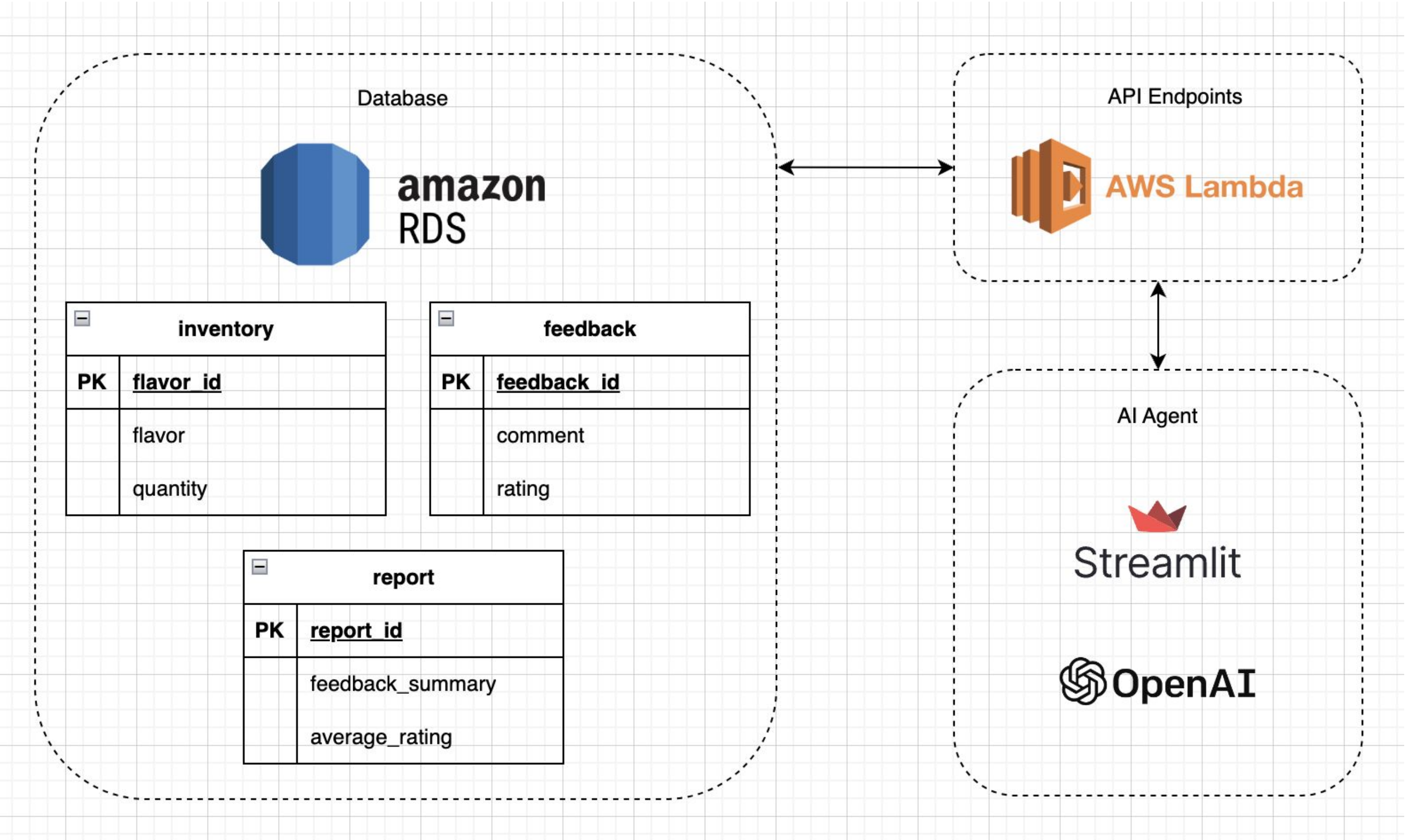
Github Repository: https://github.com/leacornelio/icecream-parlor

Demo

Design



	inventory
PK	flavor_id
	flavor
	quantity

	feedback
PK	feedback_id
	comment
	rating

	report
PK	report_id
	feedback_summary
	average_rating

Design Rationale

AWS RDS

- Used for its scalability and flexible schema management, essential for adding new tables.

AWS Lambda

- Selected for its efficiency in handling API calls, auto-scaling, high availability, and cost-effective model.

Streamlit

- User-Friendly Interface: Provides an intuitive interface, making it easier for users to interact with the AI agent.
- Simplified Deployment: Straightforward deployment process - only needs a Streamlit app and a Github repo.

Set-up Instructions

AWS RDS

Creating Tables in AWS RDS

- Create an RDS instance on AWS.
- Use the following functions in `app.py` to create inventory, feedback, and report tables:
  - `create_inventory_table()`
  - `create_feedback_table()`
  - `create_report_table()`
  - `delete_table()`

AWS Lambda

Build Docker Image

-
  ```
  docker build -t icecreamparlor --platform linux/amd64.
  ```

ECR Set-up

- Set up AWS CLI
- Create an AWS ECR repository and take note of repo url
- Retrieve ECR password for Docker login:

  -
    ```
    aws ecr get-login-password
    ```

  -
    ```
    docker login -u AWS -p <password> <repo_url>
    ```

  -
    ```
    docker tag icecreamparlor:latest <repo_url>/icecreamparlor:latest
    ```
- Push image to ECR

  -
    ```
    docker push <repo_url>/icecreamparlor:latest
    ```

Lambda Function

- Create a Lambda function with container image

AWS Lambda

API Docs: https://ujs5smnta2icm5oinwcfjdg2hy0rxtsa.lambda-url.ap-southeast-1.on.aws/docs

Sample curl Commands

- Ordering: `curl -X POST [API_ENDPOINT]/order -H "Content-Type: application/json" -H "Authorization: Bearer <BEARER_TOKEN>" -d '{"item": "vanilla", "quantity": 2}'`
- Restocking: [Similar command with /restock endpoint]
- Submitting Feedback: [Similar command with /feedback endpoint]
- Submitting a Report: [Similar command with /report endpoint]
- Fetching the Menu: `curl -X GET [API_ENDPOINT]/menu -H "Authorization: Bearer <BEARER_TOKEN>"`
- Fetching Inventory: [Similar command with /inventory endpoint]
- Fetching Feedbacks: [Similar command with /feedback endpoint]
- Fetching Reports: [Similar command with /report endpoint]

AI Agent

- Built using OpenAI API - gpt-4-turbo-preview model
- Recognize user request type - can accept multiple items when ordering and restocking
- Extract necessary data (items, quantities, comments, feedbacks, ratings).
- Send data as payload to the correct API endpoints.
- Can be found in `agent.py`

Streamlit

Streamlit App: https://ice-cream-parlor.streamlit.app/

Build the Streamlit app

- Streamlit app can be found in `agent.py`

Test locally

- Run `streamlit run agent.py`

Deploy to Streamlit

- Upload to Github repository
- Deploy via Github link

Challenges

Challenges and Solutions

Post-processing and Formatting Output

- Challenge: Post-processing and formatting output from API to be user-readable.
- Solution: Map each output format of endpoints to a target format that is appropriate for the user request. This ensures that the information presented to the user is clear and understandable.

Handling Corner Cases in Orders and Restocking

- Challenge:
  Considering corner cases like multiple items in orders and restocking, as well as handling out-of-stock items.
- Solution:
  - Prompt the AI agent to output a list of items for order and restock requests. Then, pass each item individually to the API to match the payload format for order and restock endpoints.
  - Utilize the inventory endpoint to check for out-of-stock items, ensuring that the system accurately reflects current stock levels and informs users appropriately.