Abstract

- Our goal with this project is to develop a better method of keeping inventory of the items in fridges. This would be done through the simple addition of a Raspberry Pi device that would work in conjunction with sensing devices to keep track of these items.

- The data collected is then displayed to the user’s convenience on an android application. The backend for data storage and retrieval is built using AWS and GraphQL.

- We then use this item data and match with an ingredients list on a multitude of different recipes to suggest our users what items they could conjure with their current inventory.

Methodology

- Two HIDas as a point of entry take an individual’s input and passes it to the pi
- Raspberry Pi uses a Node.js connection to send item to the AppSync Client
- AppSync Client stores item in DynamoDB
- User starts application and is authorized through Amazon Cognito
- Application automatically generates recipes based on item list (Spoonacular API)

Results

- Flow Chart of Android screens that demonstrates a typical use case for users
- Starts with user sign in
- First Screen after sign in is main foods list
- Slidable navigation bar shows various tools available to user
- One option is to see the generated grocery list
- Another option is to see list of relevant recipes

Future Work

- Use Natural Language Processing
- Image Processing and OpenCV for food recognition
- Store Receipt processing for easier list making
- Reduce latency
- Seamless and modular physical enclosure

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References