

Infant Food Frequency Questionnaire

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Problem

Dr. Palacios created a questionnaire to gather infant's food intake data and a calculation system to generate recommendations. This questionnaire was being filled manually using paper and nutrients/food recommendations were manually calculated with the help of Excel spreadsheets. During v1.0 the questionnaire was implemented as a web application. The goal of this project (v2.0) is to develop the **Admin Portal** that will allow the administrator to access nutrients and food recommendations to be generated based on the data obtained from the questionnaire results as well as the handling of system foods and nutrients.

Requirements

- Admin Portal must be accessible through URL <http://localhost:4200/admin>
- A user-friendly user interface allow the administrator to easily navigate and take actions in the portal
- Administrator should be able to perform CRUD operations (create, update and delete) on food items and corresponding nutrients.
- Administrator should be able to view the responses of the questionnaires submitted.
- Admin Portal should allow the administrator to view the food and nutrients recommendations generated by the system.

My Contributions

- Modeled nutrients and food categories recommendations values based on requirements
- Implemented Results endpoint that retrieves and stores the data submitted on questionnaire responses
- Implemented FoodRecommendation endpoint that handles all requests related to the generation of recommendations based on food categories
- Implemented NutrientRecommendation endpoint to handle all requests that involve the generation of recommendations based on nutrients breakdown
- Design Data Transfer Objects to handle json payloads serialization

Validation

- Unit and integration testing of endpoints via JUnit in Java ffq-food-service microservice.

Test Case ID: FFQR-2-T13

Description: A payload with the list of food items is returned on GET request to ffq/allfoodnutrients

Pre-condition: The microservice is running in localhost:9090

Expected Results: Food items list in a json payload

Actual Results: A json payload with the expected data

Status: Pass

Screenshots

Nutrient name	User input calculations	Recommended value	Indicator
Retinol (mcg)	413.27	400.0	Normal (103.32%)
Vitamin D (calciferol) (mcg)	10.38	10.0	Normal (103.82%)
Vitamin E (Total Alpha-Tocopherol) (mg)	0.08	4.0	Below (2.05%)
Vitamin K (phyloquinone) (mcg)	3.02	2.0	Above (150.89%)
Vitamin C (ascorbic acid) (mg)	6.71	40.0	Below (16.79%)
Thiamin (vitamin B1) (mg)	0.00	0.2	Below (0.0%)
Riboflavin (vitamin B2) (mg)	2.57	0.3	Above (857.14%)
Niacin (vitamin B3) (mg)	0.12	2.0	Below (6.07%)
Pantothenic Acid (mg)	2.66	1.7	Above (155.88%)
Vitamin B-6 (pyridoxine, pyridoxyl, & pyridoxamine) (mg)	0.00	0.1	Below (0.0%)
Total Folate (mcg)	36.14	65.0	Below (55.6%)
Vitamin B-12 (cobalamin) (mcg)	2.61	65.0	Below (4.02%)
Calcium (mg)	922.83	200.0	Above (461.41%)
Phosphorus (mg)	818.15	100.0	Above (818.15%)
Magnesium (mg)	108.83	30.0	Above (362.77%)
Iron (mg)	2.61	0.3	Above (871.43%)

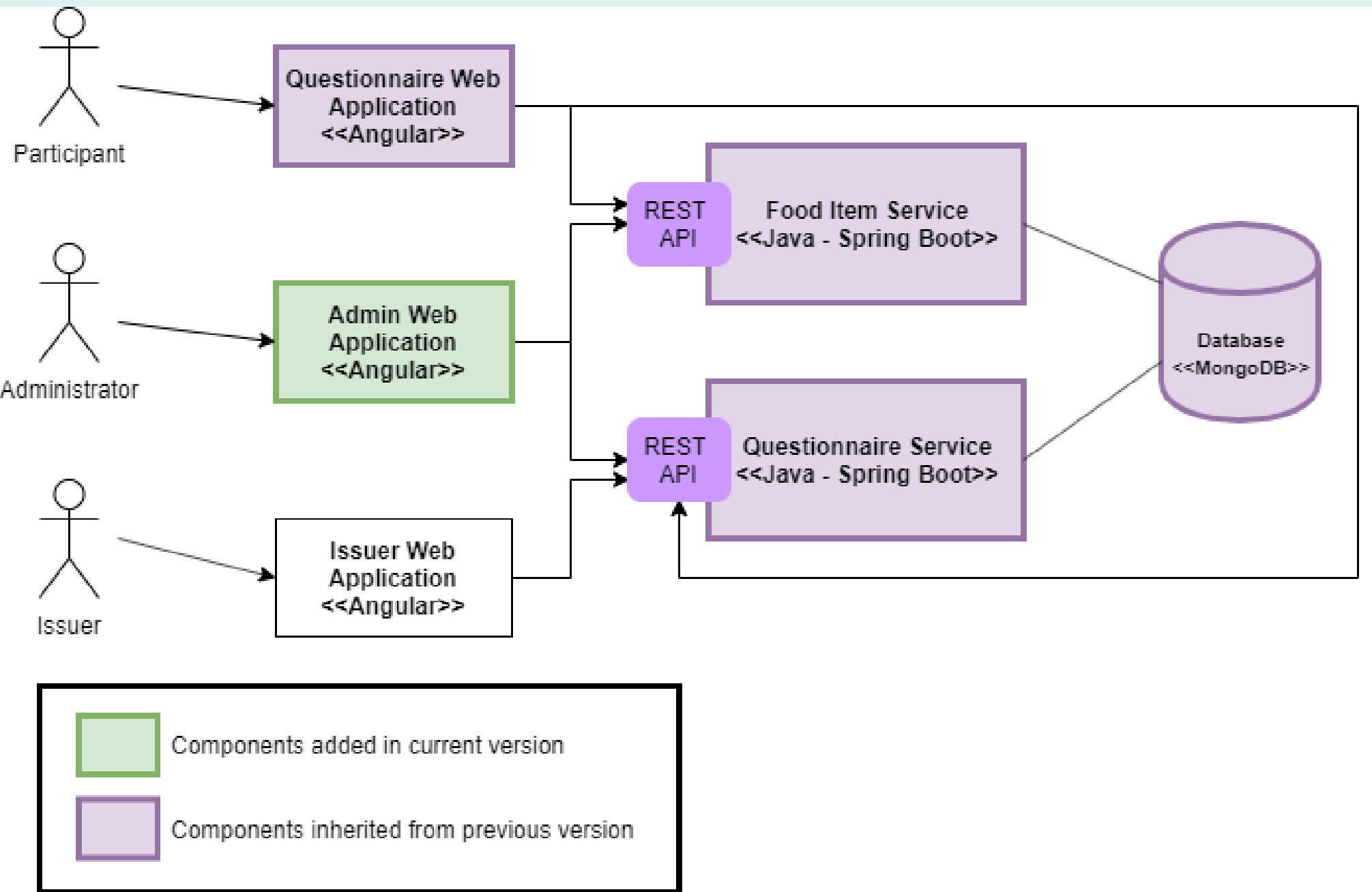
Implementation

- Two Rest APIs built on Java using Sprint Boot framework and Maven as dependency manager
- Cross-platform document-oriented database MongoDB
- Angular framework for the web application
- TypeScript, CSS, HTML and Bootstrap for the front-end
- Docker for services and application containerization

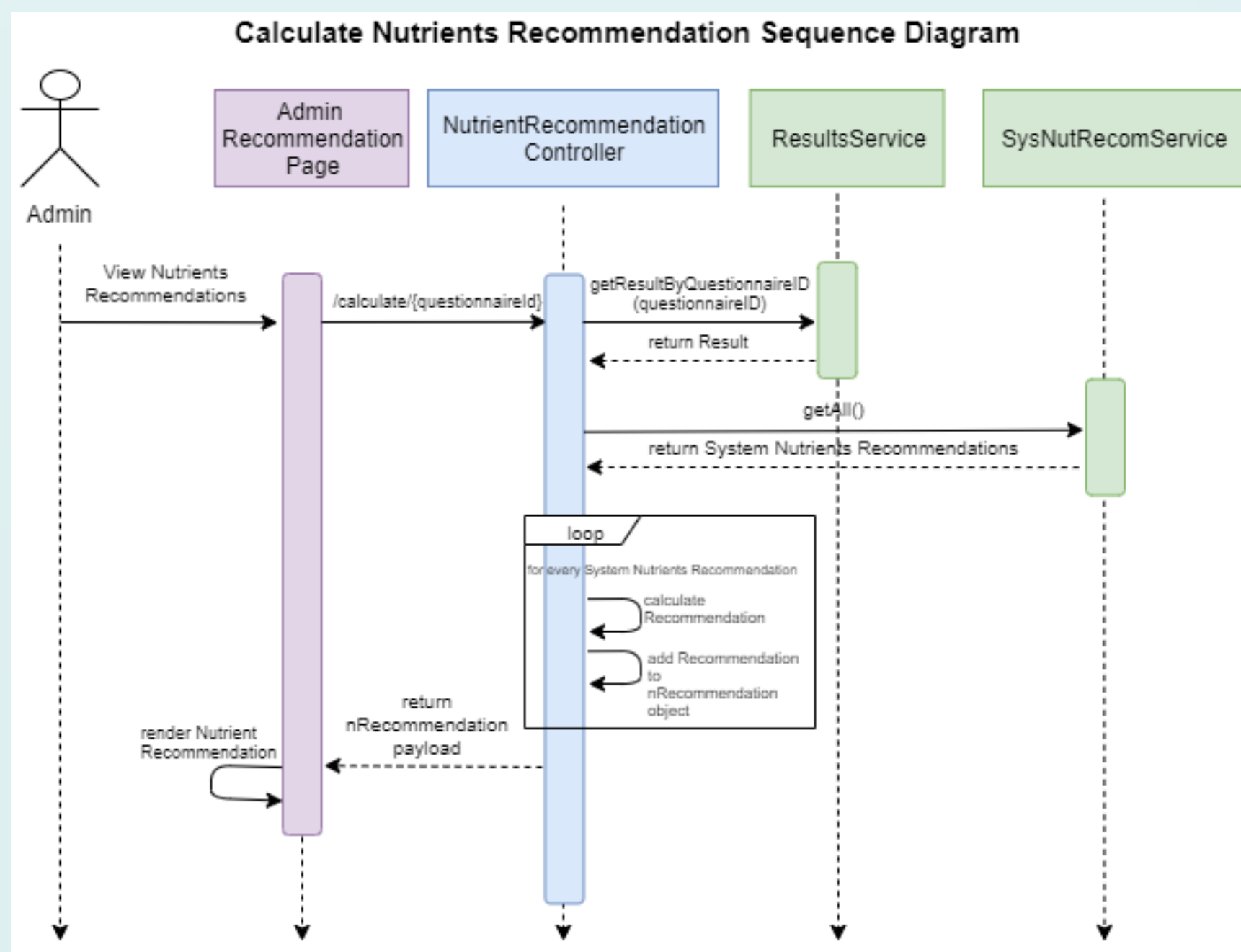
Summary

- Administrator can modify the system values for food items and nutrients that are included in the questionnaire
- Parents must access the questionnaire, fill it and submit it
- Administrator can view the responses submitted by parents
- The system generates food and nutrients recommendations based on the questionnaires responses that are available to the administrator by accessing the Recommendation page in Admin Portal

System Design



Object Design



Acknowledgement

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