Tech Returners
Java Back-end Developer Program

Weather Manager REST API Project

Group-3:

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Agenda

- Introduction to Group 3 Project - Weather Manager API
- User Story, MVP, Key Features
- Weather Manager API System Design
- Product Demo
- Code Review
- Project Approach & Team Work
- Learning Experience
- If More time…. Further development

Introduction
User Story for Weather Manager API - Minimum Requirement

User Story 1

As a user of Weather Advisory services,

I want the Advisor to provide scientific advice about clothing, health and safety precautions in accordance with the current weather of a location,

So that I can travel to the location for a day outdoors

Acceptance Criteria:

- The advice message should provide following information:
  - Current temperature with suggested clothing for comfort and protection
  - Current wind speed with suggested precautions for driving
  - Current raining or snowing conditions for using an umbrella or snow precaution shoe
  - Current humidity level with advice of health precautions and comfort level

- Detailed data for above category from a reliable public weather API site should be available.

Introduction
User Story for Weather Manager API - Additional Requirements implemented

User Story 2

As a user of Weather Advisory services,

I want the Advisor to provide weather forecast information for a range of future days from today,

So that I can look ahead to the temperature, wind speed, sunny/raining and humidity for the range of days when I will travel to the location

Acceptance Criteria:

- The advice response message should provide forecast information for the following of each future day:
    - Temperature, wind speed, sunny/raining condition

Introduction
User Story for Weather Manager API - Additional Requirements implemented

User Story 3

As a system administrator of the Weather Advisory System,

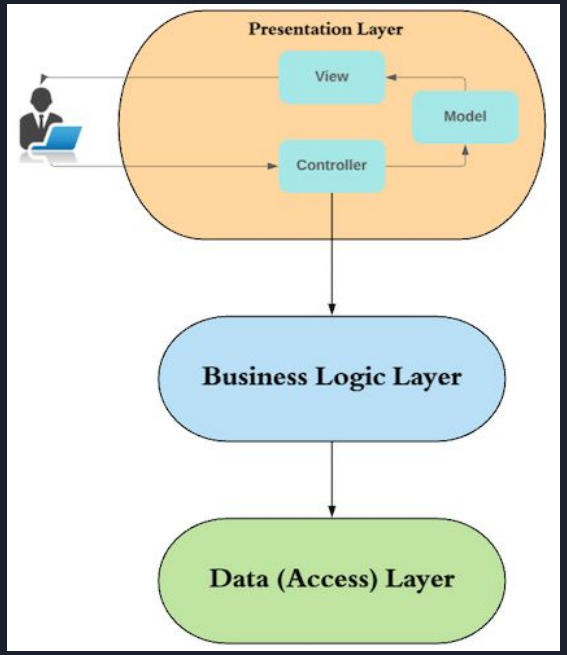
I want the system to provide APIs to input business rules for generating advice for each category of weather condition to the user of Weather Advisory system

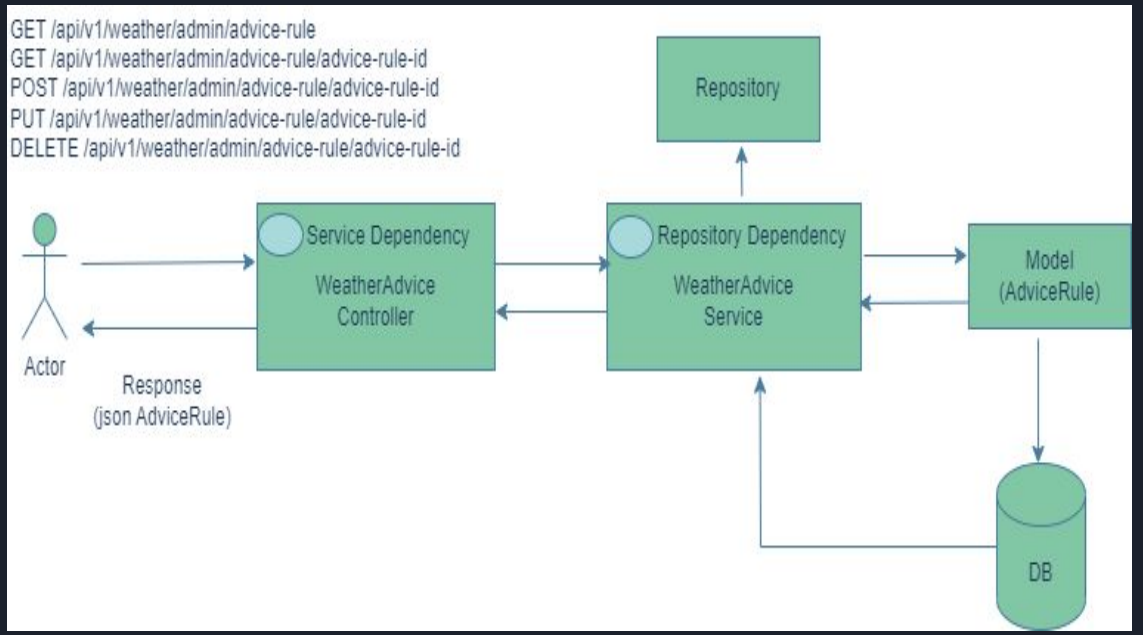
So that I can add new business rules, modify or cancel existing rules in real time without requiring code changes and software deployment procedure.

Acceptance Criteria:

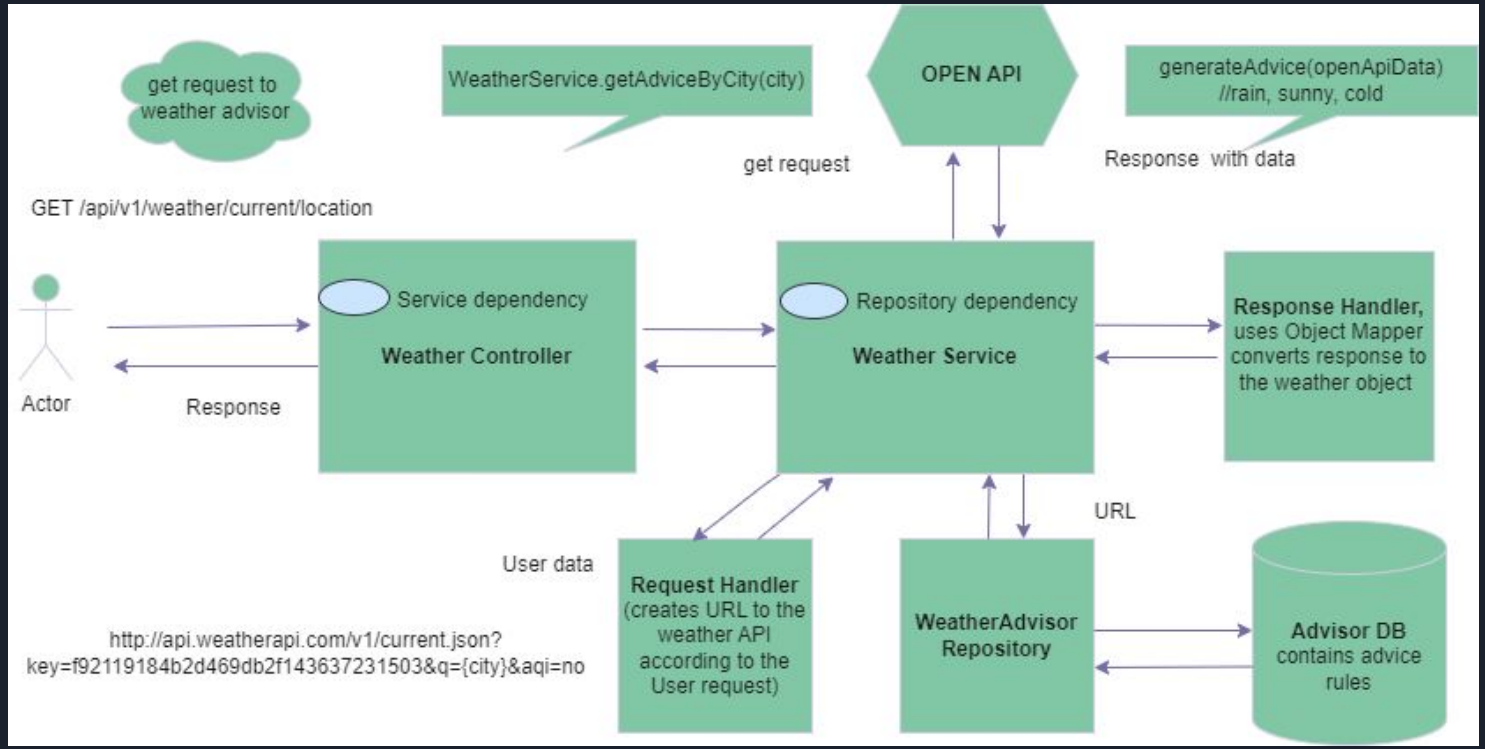
- The APIs for administrator use should support the following actions:
  - Retrieve a full list of all business rules being used to generate advice for different weather conditions
  - Add any number of new business rules for each category i.e. temperature, wind speed, sunny/raining and humidity, along with threshold parameters for each advising rule
  - Make updates to any existing business rule, to modify the parameters or the text message of the advice
  - Delete any business rule which may have become obsolete or inappropriate

Weather Manager API System Design





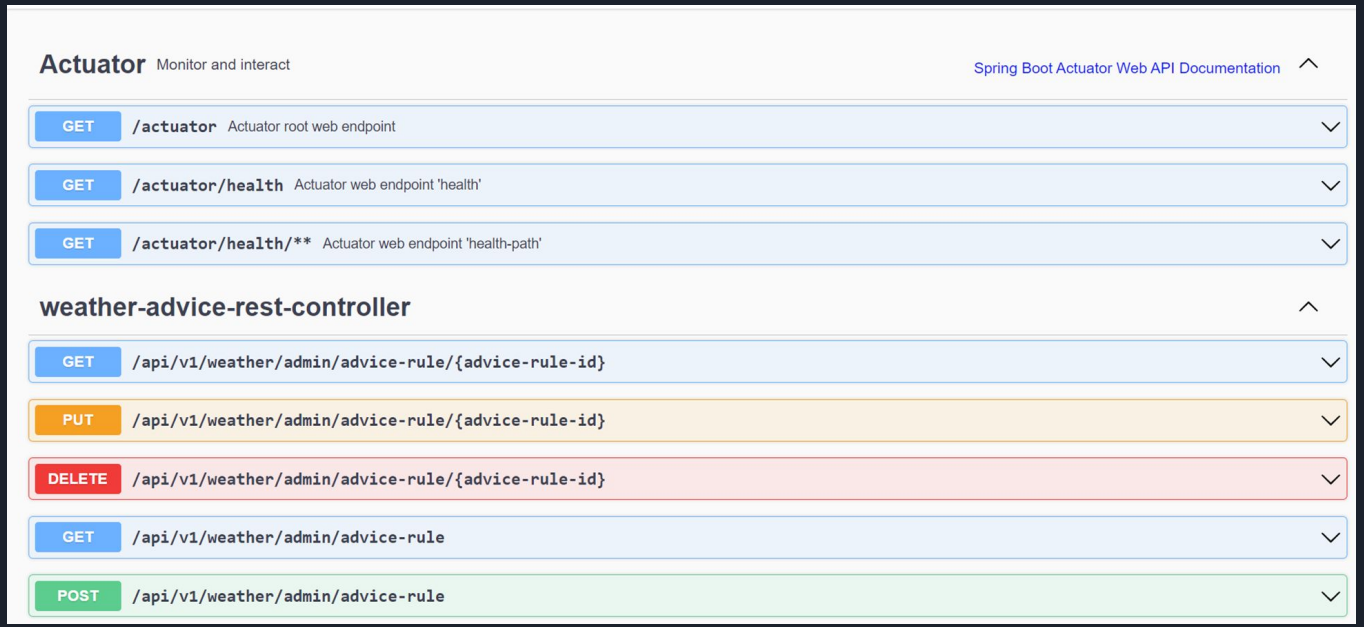
Weather Manager API System Design



Weather Manager API System Design

Weather Info category	Condition	Advisor rule-based text
Temperature (degree Celsius)	1 – 9.9	Temperature is cold, bring an Overcoat
	10 – 20.9	Temperature is chilly, wear a light jacket
	21 -29.9	Temperature is warm, wear a shirt
	30 - 99	Temperature is very hot, drink more water
Wind Speed (mph)	0.1 to 7.9	No wind
	8 to 19.9	Gentle Breeze…
	20 to 100	Very strong wind, drive slowly...
Rain/Sunny Cond	Sunny	It is sunny now, wear an sunglass for eye comfort
	Rain	Bring an umbrella
	Snow	Snow may build up... wear a pair of snow boots for safe walking
Humidity %	0-29.9	Dry humidity
	30-50.9	Good humidity for health and Comfort
	51-74.9	Sticky Humidity
	75-100	Very humid… Drink plenty water for good health

Weather Manager API Product Demo



Weather Manager API
Code Review

Weather Manager API
Project Approach & Team Work

- Agile approach:
  - Create user story
  - Trello board
  - Distribute tasks across the team
  - Daily stand up

Weather Manager API
Project Approach & Team Work

- What we learn as a Team from the Project:
  - Collaboration and teamwork
  - Hands-on experience with the Spring Framework
  - Using Swagger to create great APIs
  - Resolving possible conflict of coding on same code base, using Git/Github branch and merging functions

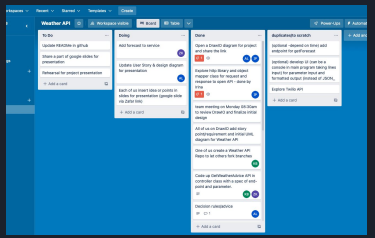
Weather Manager API
Project Approach & Team Work

- Successes:
  - Creating a project from scratch, including all phases of the Systems Development Life Cycle
    - requirements gathering,
    - design,
    - implementation,
    - testing and support.
- Proudest Moments:
    - committed team focused on collective outcome

Weather Manager API
Project Approach & Team Work

- Challenges:
  - Analyze possible options for open APIs
  - Choose a domain zone
  - Define and assign tasks to performers
  - Work with the same project functionality

- How we overcame them:
  - Estimate the approximate time to complete the project, taking into account the complexity
  - Daily meetings, open and friendly discussion of issues,
  - Initiative of each team member,
  - Experience sharing and teamwork
  - use of tools:
    - Git branching, pull request
    - trello board



Weather Manager API
Project Approach & Team Work

- What we will do if we had more time:
  - user authentication/authorization
  - user location
  - deploying the application in the cloud (AWS)
  - UI

Thank You
Question & Answer