## Overview

Overall, this system is based on RESTful architecture so browser doesn’t need to load unchanged content frequently.

* Frontend uses AngularJS framework, angular-seed is used as frontend code skeleton.
* Backend uses Spring framework, Spring Boot is used to generate backend code skeleton. RESTful APIs include city list access (name and id for each city) and current weather information access based on city id. Data transfer format uses JSON.
* And api.openweathermap.org is selected as 3rd party weather information provider which provides RESTful APIs.

The development process is based TDD for quick iteration. Spring Test and Protractor are introduced to support that. And Maven is used as build tool.

## Backend

Main code is under “src/main/java”, the structure is designed to have multiple layers. Each layer interacts with depending layer through DI for decoupling.

* Web layer. The related package is “web”. It contains controllers to implement RESTful APIs which provide city list and weather information access. This layer depends on service layer.
* Service layer. All classes in this layer are put in package “service”. It contains logic to access weather information from 3rd party provider and transfer it to data transfer object expected. The layer depends on domain layer.
* Domain layer. All classes in this layer are put in “domain” package. It contains entity classes and classes retrieving weather information from external provider..
* And there is another package named “common” which is used to keep common classes consumed across layers.
* “src/main/resources/application.properties” is used for configurable settings.
* “src/main/resources/import.sql” is used to initiate in-memory database, which can be updated to add new cities.

Test code is under “src/test/java” and test cases are stored based on the same package structure as main code.

All interface and public classes have comments in Javadoc format. Others are with necessary comments in code.

## Frontend

All frontend stuff is under “ngclient”. Main code is under “ngclient/app”. Test code is under “ngclient/e2e-tests”

Frontend main code will be merged into backend codebase under “src\main\resources\public” during maven package phase.