

# (Velocity iTest) New hire software programming exercise, Spring and Eclipse

## Simple REST API Service

1. Create a service that communicates using REST API.
2. Service's job is to maintain a persistent data store of birds, their characteristics, and sightings.
3. At start-up, the service initializes persistent data storage.
4. Service supports two types of data: birds and bird sightings.
5. Service supports CRUD operations for birds and sightings.
6. Birds have the following attributes:
  - a. Name
  - b. Color
  - c. Weight
  - d. Height
7. Sightings have the following attributes:
  - a. Bird
  - b. Location
  - c. Date-time
8. Service supports listing all birds and sightings.
9. Service supports bird queries by name and color.
10. Service supports sighting queries by bird, location, and time interval.

## Eclipse Feature

1. The client application is a feature that must run in either the Eclipse IDE or an Eclipse RCP application.
2. The client functionality must be a feature delivered using at least two plugins.
3. The first plugin handles interaction with the Simple Rest API service described above.
4. The second plugin provides a user interface for entering new birds or bird sightings. This plugin interacts with the first plugin to store the information entered in the UI.
5. Through the UI it must be possible to:
  - a. Add a Bird
    - i. The user interface provides a means (such as a form) for the user to enter the bird name, location, date and time and submit this information.
  - b. Add a Sighting
    - i. The user interface provides a means for the user to enter a sighting of a bird, the location and the date and time of the sighting.
  - c. Show All Birds
    - i. Show all birds in a table with a column for name, color, weight and height.
  - d. Show All Sightings
    - i. The user inputs the name of the bird.
    - ii. The user is presented with a table of all matching sightings.
6. The combined set of plugins must be delivered as a feature delivered as an update site (ZIP archive).

## Other Requirements

1. Use the Eclipse IDE
2. Use Java 11
3. Use Spring framework for the REST Service
4. Integrate with the open-source data store of your choice (relational or NoSQL, such as PostgreSQL or MongoDB)
5. Document your code (javadoc)
6. Provide simple REST API documentation
7. Provide instructions on how to:
  - a. Build your project
  - b. Run the datastore (ideally provide a docker-compose.yml file so it can easily be launched in Docker)
  - c. Install the plugin and access the UI within in Eclipse

## Evaluation

Work will be evaluated using the following criteria

1. Adherence to functional requirements.
2. Ease of use.
3. Thread safety.
4. Error handling.
5. Adequate test coverage.
6. Organization and clarity of code.
7. Clarity of documentation