
Exercise 4: Complex Event Processing



Concepts and Technologies for Distributed Systems and Big Data Processing – SS 2016

Task 1 Simple Esper Queries

Assume a stock tick event `StockTick(String name, int price)` with the fields `name` and `price` representing the name of an company and the associated price for a stock tick.

- Write a query which computes the average prices over the last 30 seconds.
- Write a query which alerts on each "IBM" stock tick with a price greater then 80 and within the next 60 seconds.
- Write a query that returns the average price per name for the last 100 stock ticks.

Task 2 Complex Esper Queries

Have a look at the code provided on the course website, which contains the code for the “Taxi trips in NYC” application scenario. The ZIP file contains a Maven project, which can be imported into your IDE. An Eclipse project is provided, too. If importing the Eclipse project should not work, please have a look into the informatory section at the end of the exercise to see how to import a Maven project into Eclipse.

The scenario uses two types of events

`Pickup(int taxi_id, int location_id)` and

`Dropoff(int taxi_id, int location_id, int amount)`.

Write a query to find the ten most profitable routes in the last 30 minutes. The profitability of a route is the sum of the amounts of all the taxi trips for that route. A route is a pair of (pickup location, dropoff location). Consider routes that ended within the last 30 minutes.

Importing the Maven project into Eclipse

In Eclipse, open the *Import* dialog via *File* → *Import*.

Choose *Existing Maven Projects*.

Choose the root directory of the Maven project containing the `pom.xml` file.

Select the project and click *Finish*. This should also download the required dependencies.