Create New Aggregation Function

This page gives some advice to create a new Aggregation function.

This page is under construction.

Interfaces for a new function

An aggregation function needs to implement one of the following interfaces:

- `de.uniol.inf.is.odysseus.aggregation.functions.`**`IIncrementalAggregationFunction`**
  An incremental aggregation functions gets a notification when an element gets valid (enters the window) or gets invalid (leaves the window). You have to hold a state to return the current aggregation value on request.
  - `void` **`addNew`**`(T newElement);`
    This method is called when a new element gets valid. You should add this value to the state.
    For example AVG function: State holds `sum` and `count`. `sum += newElement` and `count++`
  - `void` **`removeOutdated`**`(Collection<T> outdatedElements, T trigger, PointInTime pointInTime);`
    This method is called when a set of elements get invalid. You should remove these values from the state.
    For example AVG function: For each element in outdatedElements: `sum -= element` and `count--`
  - `Object[]` **`evalute`**`(T trigger, PointInTime pointInTime);`
    This method is called when a new aggregation value should returned.
    For example AVG function: `return sum/count`
- `de.uniol.inf.is.odysseus.aggregation.functions.`**`INonIncrementalAggregationFunction`**
  An non-incremental function gets a set of all elements in the current window. It does not have to hold a state.
  - `Object[]` **`evaluate`**`(Collection<T> elements, T trigger, PointInTime pointInTime);`
    This method is called when a new aggregation value should returned. `elements` holds all elements in the window that starts at `pointInTime`.

In `de.uniol.inf.is.odysseus.aggregation.functions` there are also abstract classes.

Function Registry and Function Factories

- Implement `de.uniol.inf.is.odysseus.aggregation.functions.factory.IAggregationFunctionFactory` to allow Odysseus to create a new function.
- Add OSGi service to add function to the registry (`de.uniol.inf.is.odysseus.aggregation.AggregationFunctionRegistry`).