How to implement a new Analytic-Algorithm

Task:

We want to implement a new analytic Algorithm that extracts information from the logged execution Data of our Engine and provide the results via REST.

Realization:

Therefore we need to add a class for our new Algorithm in the package *de.uni_potsdam.hpi.bpt.bp2014.janalytics* that implements the interface *AnalyticsService*.

```
package de.uni_potsdam.hpi.bpt.bp2014.janalytics;


import org.json.JSONObject;

public class NewAlgorithm implements AnalyticsService {


    @Override
    public JSONObject calculateResult(String[] args) {
        // put code here
        return null;
    }
```

Then we have to implement the method *calculateResult(String[] args)* from the interface *AnalyticsService*. This is the place to put the code for the Algorithm we want to implement. In order for the REST-Interface to work correctly it is important that we return the results of our Algorithm as a JSON-Object.

IMPORTANT:

We have to register our new Algorithm for the REST-Interface in the *ServiceManager* class (also located in the package *de.uni_potsdam.hpi.bpt.bp2014.janalytics*). For this we have to add the Algorithm in the *ServiceManager* method *registerServices().* There we should call the method *addService()* with the argument *new classNameOfOurAlgorithm()*.

```
/**
 * Register new Services with addService(new classNameOfAlgorithm).
 */
private void registerServices() {
    addService(new ExampleAlgorithm());
    // add further Algorithms here
}
```

The Algorithm can be started via the REST-Interface using a POST to the URL */jengine/api/analytics/v2/services/de.uni_potsdam.hpi.bpt.bp2014.janalytics.{classNameOfOurAlgorithm}*.

If our Algorithm expects any parameters we have to put them in the request body as JSON Array with our POST. We have to keep the order in mind, the request body is the later input for the *calculateResult(String[] args)* method.

After the POST-Request a HTTP 303 See Other with a new URI is returned. The URI *(/jengine/api/analytics/v2/services/de.uni_potsdam.hpi.bpt.bp2014.janalytics.{classNameOfOurAlgorithm}/resultId/{resultId})* can be used for a GET-Request to obtain the result of the calculation, the resultId is used to identify the result of the different POSTs.

After the Algorithm has terminated, the results can be obtained via a GET to the same URL as in the 303 See Other *(/jengine/api/analytics/v2/services/de.uni_potsdam.hpi.bpt.bp2014.janalytics.{classNameOfOurAlgorithm}/resultId/{resultId}*) and returns a JSON with the output of the Algorithm.

It should be considered, that the Angular.js frontend will automatically send a GET Request to the URI of the http 303 See Other and no additional GET Request is needed when the output of an algorithm is integrated into the frontend.