TUTORIAL

HOW TO ADD AN AREA PROJECT PLUGIN

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WHAT'S AN AREA ?

The Area project allows the user to interconnect two microservices by interacting them with an area composed of an action and a reaction.

It's composed of two modules, using independent authentication and one area implementing an action and a reaction.

STEP 1 : MODULES

Description :

An Area is composed of two modules. The goal of a module is to authenticate the user with a simple / OAuth1 / OAuth2 connexion to a service which give back a session token needed for the Area.

Each user will have a specific token for each module.

Implementation :

To do so, a module have to implement the ***IService Interface*** :

```
/**
 * This interface is implemented by all
 * Services.
 */
public interface    IService {
   /**
    * Retrieve token by username and password.
    *
    * @param username the username to provide to the concerned API.
    * @param password the password to provide to the concerned API.
    * @return a token String
    */
   public String   login(String username, String password);
   public String   login(String code, Module module);
}
```

This method is used for simple authentication :

```
 public String   login(String username, String password);
```

This method is used for an OAuth2 authentication :

```
public String   login(String code, Module module);
```

The Service class as to be named in a specific way (Reflexion) : ***« Name of the service » + Service.***

```
public class GmailService implements IService
```

Fixture :

The Area Project uses a MongoDB Database. When adding a module, the developer needs to implement a specific fixture to integrate it in the database in form of a Module model.

```
* This method add modules.
*/
public void init() {
  this.add(new Module(moduleName, image path, description, url retrieve code, url get token));
}
```

The fixture have to be implemented in the init() method of the ModuleFixture Class.

The Module Class Constructor take a String moduleName, an String image path, a String description, a String url retrieve code and a String url get token.

STEP 2 : AREA

Description :

An area is composed of an action and a reaction.

It's used the tokens session from the authentication to call the Service API.

Implementation :

An action have to implement the ***IAction Interface*** :

```
* This interface is implemented by all Actions
*/
public interface IAction {
  ErrorCode run();
  Object getData();
}
```

The method run() is the entry point for the action. It will execute the call to the Service API and build an Object response. It will return an ErrorCode Success if the execute run without error or an ErrorCode Auth if the access token is no longer available.

The method getData() will get the Object data, built during the run() method.

A Reaction have to implement the ***IReaction Interface***.

```
/*
 * This interface is implemented by all Reactions
 */
public interface IReaction {
    /**
     * This is the main method.
     *
     * @param data the data returned by the action.
     * @return an error code.
     */
    public ErrorCode run(Object data);
}
```

The method run() is the entry point for the reaction. It take the Object data built during the action run() method and it will execute the calls to the Service API to send the Object data. It will return an ErrorCode Success if the execute run without error or an ErrorCode Auth if the access token is no longer available.

Fixture :

The Area Project uses a MongoDB Database. When adding an area, the developer needs to implement a specific fixture to integrate it in the database in form of an Area model.

```
/*
 * Load all areas
 */
public void init() {
    // add some areas
    this.add(new Area(action name, reaction name, module action name, module reaction name,
description));
}
```

The fixture have to be implemented in the init() method of the AreaFixture Class.

The Area Class Constructor take a String action name, an String reaction name, a String module action name, a String module reaction name and a String description.

So now, you are ready to implement and add new Area Project Plugin !!!

Have a lot of fun !