

## Activité Pratique N° 1 :

# Développement d'un Web service SOAP, WSDL avec JAWRS



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YOUSSEFI

## Introduction :

Dans ce TP on va créer un Web service SOAP, WSDL avec JAWRS

## ENNONCE :

### 1. Créer un Web service qui permet de :

- Convertir un montant de l'auro en DH
- Consulter un Compte
- Consulter une Liste de comptes

### 2. Déployer le Web service avec un simple Serveur JaxWS

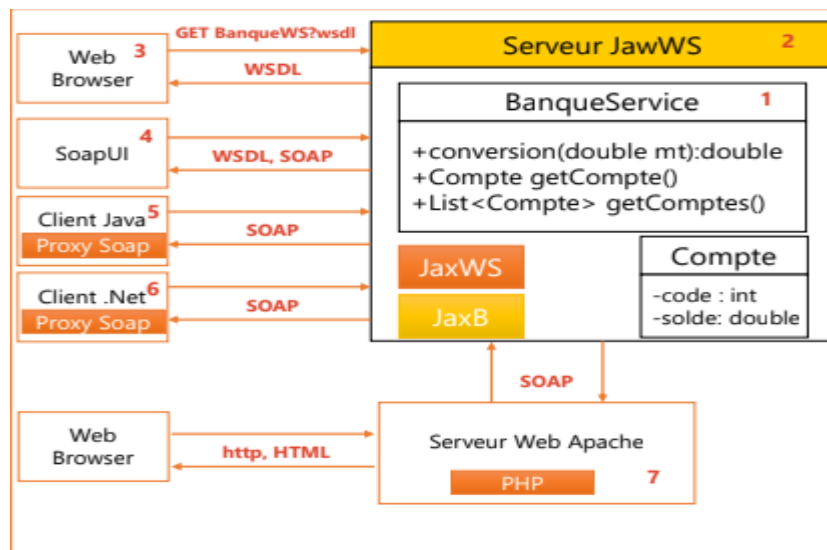
### 3. Consulter et analyser le WSDL avec un Browser HTTP

### 4. Tester les opérations du web service avec un outil comme SoapUI ou Oxygen

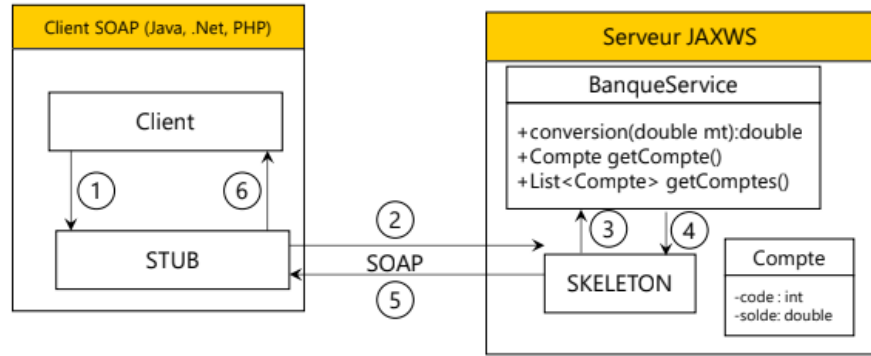
### 5. Créer un Client SOAP Java

### 6. Déployer le Web Service dans un Projet Spring Boot

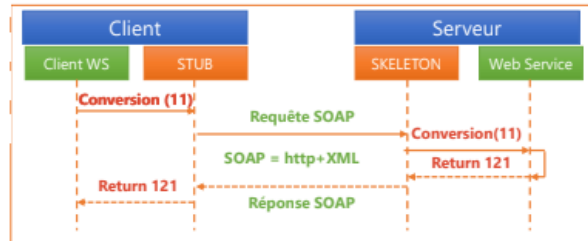
## CONCEPTION ET ARCHITECTURE



## Architecture 1



- 1 Le client demande au stub de faire appel à la méthode conversion(12)
- 2 Le Stub se connecte au Skeleton et lui envoie une requête SOAP
- 3 Le Skeleton fait appel à la méthode du web service
- 4 Le web service retourne le résultat au Skeleton
- 5 Le Skeleton envoie le résultat dans une la réponse SOAP au Stub
- 6 Le Stub fournit le résultat au client



## CODE SOURCE :

Le lien de GitHub : <https://github.com/Khoumaniasmaa/Webservice.git>

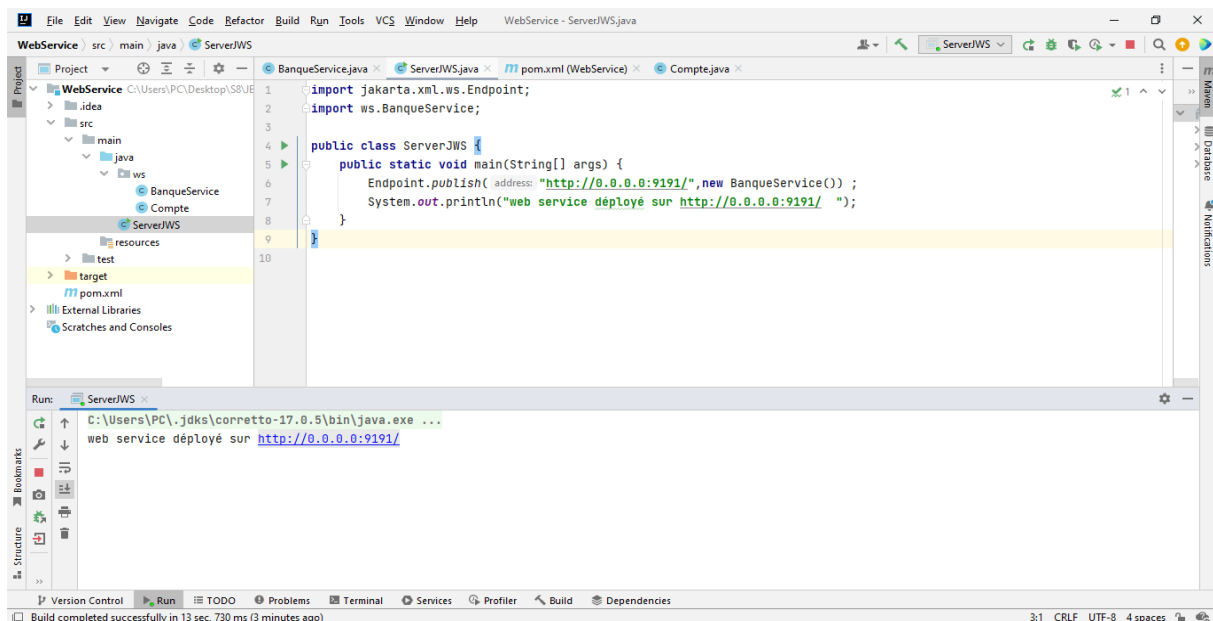
## Capture d'écran :

### 1. Créer un Web service qui permet de :

- Convertir un montant de l'auro en DH
- Consulter un Compte
- Consulter une Liste de comptes

### 2. Déployer le Web service avec un simple Serveur JaxWS

### 3. Consulter et analyser le WSDL avec un Browser HTTP



The screenshot shows an IDE with the following code in **ServerJWS.java**:

```

1 import jakarta.xml.ws.Endpoint;
2 import ws.BanqueService;
3
4 public class ServerJWS {
5     public static void main(String[] args) {
6         Endpoint.publish(address: "http://0.0.0.0:9191/", new BanqueService());
7         System.out.println("web service déployé sur http://0.0.0.0:9191/");
8     }
9 }
10

```

The **Run** console shows the output:

```

C:\Users\PC\.jdk\corretto-17.0.5\bin\java.exe ...
web service déployé sur http://0.0.0.0:9191/

```

The status bar at the bottom indicates: Build completed successfully in 13 sec, 730 ms (3 minutes ago).

← → ↻ localhost:9191/BanqueWS?wsdl

Profil • Altissia Questions techniqu... WhatsBot en ligne bousmah.freecluste... (5837) Spring Boot... (6402) Spring Boot... planication WhatsBot (9541) Use case JPA...

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```

<!-- Published by XML-WS Runtime (https://github.com/eclipse-ee4j/metro-jax-ws). Runtime's version is XML-WS Runtime 4.0.0 git-revision#129f787. -->
<!-- Generated by XML-WS Runtime (https://github.com/eclipse-ee4j/metro-jax-ws). Runtime's version is XML-WS Runtime 4.0.0 git-revision#129f787. -->
<?xml version="1.0" encoding="UTF-8" ?>
<definitions xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd" xmlns:wsp="http://www.w3.org/ns/ws-policy"
xmlns:wspl_2="http://schemas.xmlsoap.org/ws/2004/09/policy" xmlns:wsam="http://www.w3.org/2007/05/addressing/metadata" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:tns="http://ws/" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns="http://schemas.xmlsoap.org/wsdl/" targetNamespace="http://ws/" name="Banques">
  <types>
    <xsd:schema>
      <xsd:import namespace="http://ws/" schemaLocation="http://localhost:9191/?xsd=1"/>
    </xsd:schema>
  </types>
  <message name="Convert">
    <part name="parameters" element="tns:Convert"/>
  </message>
  <message name="ConvertResponse">
    <part name="parameters" element="tns:ConvertResponse"/>
  </message>
  <message name="listComptes">
    <part name="parameters" element="tns:listComptes"/>
  </message>
  <message name="listComptesResponse">
    <part name="parameters" element="tns:listComptesResponse"/>
  </message>
  <message name="getCompte">
    <part name="parameters" element="tns:getCompte"/>
  </message>
  <message name="getCompteResponse">
    <part name="parameters" element="tns:getCompteResponse"/>
  </message>
  <portType name="BanqueService">
    <operation name="Convert">
      <input wsam:Action="http://ws/BanqueService/ConvertRequest" message="tns:Convert"/>
      <output wsam:Action="http://ws/BanqueService/ConvertResponse" message="tns:ConvertResponse"/>
    </operation>
    <operation name="listComptes">
      <input wsam:Action="http://ws/BanqueService/listComptesRequest" message="tns:listComptes"/>
      <output wsam:Action="http://ws/BanqueService/listComptesResponse" message="tns:listComptesResponse"/>
    </operation>
    <operation name="getCompte">
      <input wsam:Action="http://ws/BanqueService/getCompteRequest" message="tns:getCompte"/>
      <output wsam:Action="http://ws/BanqueService/getCompteResponse" message="tns:getCompteResponse"/>
    </operation>
  </portType>
  <binding name="BanqueServicePortBinding" type="tns:BanqueService">
    <soap:binding style="rpc" transport="http://schemas.xmlsoap.org/soap/http"/>
    <operation name="Convert">
      <soap:operation soapAction="http://ws/BanqueService/ConvertRequest"/>
      <input wsam:Action="http://ws/BanqueService/ConvertRequest" message="tns:Convert"/>
      <output wsam:Action="http://ws/BanqueService/ConvertResponse" message="tns:ConvertResponse"/>
    </operation>
    <operation name="listComptes">
      <soap:operation soapAction="http://ws/BanqueService/listComptesRequest"/>
      <input wsam:Action="http://ws/BanqueService/listComptesRequest" message="tns:listComptes"/>
      <output wsam:Action="http://ws/BanqueService/listComptesResponse" message="tns:listComptesResponse"/>
    </operation>
    <operation name="getCompte">
      <soap:operation soapAction="http://ws/BanqueService/getCompteRequest"/>
      <input wsam:Action="http://ws/BanqueService/getCompteRequest" message="tns:getCompte"/>
      <output wsam:Action="http://ws/BanqueService/getCompteResponse" message="tns:getCompteResponse"/>
    </operation>
  </binding>
  <service name="BanqueService">
    <port name="BanqueServicePort" binding="tns:BanqueServicePortBinding" type="tns:BanqueService"/>
  </service>
</definitions>

```

#### 4. Tester les opérations du web service avec un outil comme SoapUI ou Oxygen

SoapUI 5.7.0

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Projects

- test1
  - BanqueServicePortBinding
    - Convert
      - Request 1
      - getCompte
      - listComptes

Request Properties

Property	Value
Name	Request 1
Description	
Message Size	252
Encoding	UTF-8
Endpoint	http://localhost:9191...
Timeout	
Bind Address	
Follow Redirects	true
Username	
Password	
Domain	

SoapUI Start Page

BanqueServicePortBinding

Request 1

http://localhost:9191/

XML

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Header/>
  <soapenv:Body>
    <ws:Convert>
      <motant>806</motant>
    </ws:Convert>
  </soapenv:Body>
</soapenv:Envelope>

```

XML

```

<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/">
  <S:Body>
    <ns2:ConvertResponse xmlns:ns2="http://ws/">
      <return>8495.24</return>
    </ns2:ConvertResponse>
  </S:Body>
</S:Envelope>

```

A... Head... Attachm... W... WS... JMS H... JMS Pro...

response time: 9ms (222 bytes)

Headers (4) Attachments (0) SSL Info WSS (0) JMS (0)

1:1

SoapUI log http log jetty log error log wsrm log memory log

SoapUI 5.7.0

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**Navigator**

Projects

- test1
  - BanqueServicePortBinding
    - Convert
    - Request 1
    - getCompte
    - Request 1
    - listComptes

**Request Properties**

Property	Value
Name	Request 1
Description	
Message Size	250
Encoding	UTF-8
Endpoint	http://localhost:91...
Timeout	
Bind Address	
Follow Redirects	true
Username	
Password	
Domain	

**SoapUI Start Page**

BanqueServicePortBinding

Request 1

http://localhost:9191/

Raw XML

```
<?xml version='1.0' encoding='UTF-8'>
<soapenv:Envelope xmlns:soapenv='http://schemas.xmlsoap.org/soap/envelope/'>
  <soapenv:Header/>
  <soapenv:Body>
    <vs:getCompte>
      <arg0>4</arg0>
    </vs:getCompte>
  </soapenv:Body>
</soapenv:Envelope>
```

response time: 232ms (323 bytes)

Headers (4) Attachments (0) SSL Info WSS (0) JMS (0)

Raw XML

```
<?xml version='1.0' encoding='UTF-8'>
<S:Envelope xmlns:S='http://schemas.xmlsoap.org/soap/envelope/'>
  <S:Body>
    <ns2:getCompteResponse xmlns:ns2='http://vs/'>
      <return>
        <code>4</code>
        <dateCreation>2022-10-23T14:15:50.945+02:00</dateCreation>
        <solde>6296.298879521401</solde>
      </return>
    </ns2:getCompteResponse>
  </S:Body>
</S:Envelope>
```

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SoapUI 5.7.0

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**Navigator**

Projects

- test1
  - BanqueServicePortBinding
    - Convert
    - Request 1
    - getCompte
    - Request 1
    - listComptes
    - Request 1

**Request Properties**

Property	Value
Name	Request 1
Description	
Message Size	205
Encoding	UTF-8
Endpoint	http://localhost:91...
Timeout	
Bind Address	
Follow Redirects	true
Username	
Password	
Domain	

**Request 1**

http://localhost:9191/

Raw XML

```
<?xml version='1.0' encoding='UTF-8'>
<soapenv:Envelope xmlns:soapenv='http://schemas.xmlsoap.org/soap/envelope/'>
  <soapenv:Header/>
  <soapenv:Body>
    <vs:listComptes/>
  </soapenv:Body>
</soapenv:Envelope>
```

response time: 26ms (570 bytes)

Headers (4) Attachments (0) SSL Info WSS (0) JMS (0)

Raw XML

```
<?xml version='1.0' encoding='UTF-8'>
<S:Envelope xmlns:S='http://schemas.xmlsoap.org/soap/envelope/'>
  <S:Body>
    <ns2:listComptesResponse xmlns:ns2='http://vs/'>
      <return>
        <code>1</code>
        <dateCreation>2022-10-23T14:17:06.534+02:00</dateCreation>
        <solde>8534.700091873006</solde>
      </return>
      <return>
        <code>2</code>
        <dateCreation>2022-10-23T14:17:06.534+02:00</dateCreation>
        <solde>1139.932809927746</solde>
      </return>
      <return>
        <code>3</code>
        <dateCreation>2022-10-23T14:17:06.534+02:00</dateCreation>
        <solde>1909.6442199845524</solde>
      </return>
    </ns2:listComptesResponse>
  </S:Body>
</S:Envelope>
```

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## 5. Créer un Client SOAP Java

## 6. Déployer le Web Service dans un Projet Spring Boot

SoapUI 5.7.0

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**Request 1**

http://localhost:9191/

XML

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Header/>
  <soapenv:Body>
    <ws:getCompte>
      <arg0>3</arg0>
    </ws:getCompte>
  </soapenv:Body>
</soapenv:Envelope>
  
```

XML

```

<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/">
  <S:Body>
    <ns2:getCompteResponse xmlns:ns2="http://ws/">
      <return>
        <code>3</code>
        <solde>6591.306229967655</solde>
      </return>
    </ns2:getCompteResponse>
  </S:Body>
</S:Envelope>
  
```

Request Properties

Property	Value
Name	Request 1
Description	
Message Size	250
Encoding	UTF-8
Endpoint	http://localhost:91...
Timeout	
Bind Address	
Follow Redirects	true
Username	
Password	
Domain	

response time: 13ms (265 bytes)

SoapUI log http log jetty log error log wsrm log memory log

Project pom.xml (Client) ClientWS.java

```

1 import proxy.BanqueService;
2 import proxy.Banques;
3 import proxy.Compte;
4
5 public class ClientWS {
6     public static void main(String[] args) {
7         BanqueService stub=new Banques().getBanqueServicePort();
8         System.out.println(stub.convert( motant: 7600));
9         Compte CP = stub.getCompte( arg0: 5);
10        System.out.println(CP.getCode());
11        System.out.println(CP.getSolde());
12    }
13 }
14
  
```

Run: ClientWS

C:\Users\PC\.jdk\corretto-17.0.5\bin\java.exe ...

80104.0

5

6011.448590430292

Process finished with exit code 0