Desarrollo de Aplicaciones en Red

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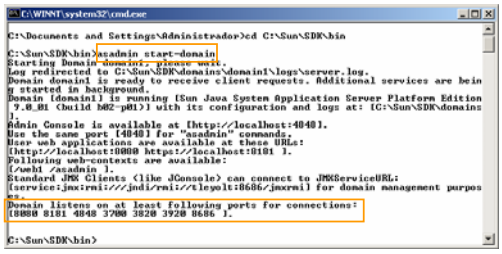
Web Services with J2EE

Iniciando el servicio



Setting the environment variables

- PATH=$PATH:***installdir***/bin
- JAVA_HOME=***installdir***/jdk
- CLASSPATH=***installdir***/lib/javaee.jar

Developing the WS

- ***Define the method that WS expose***
  - **Define clearly arguments type**
  - **Define clearly return arguments type**
- ***Create the java Class***
- ***Publish the WS with the tools of J2EE***
  - **wsgen**

Simple Example

Source code

```
package Ejemplo;

import javax.jws.WebService;          //Se importa para poder definir el web service
import javax.jws.WebMethod;           //Se importa para poder definir los métodos

@WebService   //Esta anotación define a la clase como un WS
public class Calculadora {

  public void Caculadora() {}

  @WebMethod  //Esta anotación define al método como Web
  public int sumar(int a, int b) {
    return a+b;
  }

 @WebMethod   //Esta anotación define al método como Web
  public int restar(int a, int b) {
    return a-b;
  }

}
```


Compile and Deploy

- ***DEPLOY_DIR=C:\Sun\SDK\domains\domain1\autodeploy***
- ***javac Ejemplo\Calculadora.java –d %DEPLOY_DIR%***

The WS created

Testing the WS

The wsdl

```xml
<definitions targetNamespace="http://Ejemplo/" name="CalculadoraService">
 <types>
  <xsd:schema>
   <xsd:import namespace="http://Ejemplo/"
      schemaLocation="http://tleyolt:8080/Calculadora/CalculadoraService/__cont
      ainer$publishing$subctx/WEBINF/wsdl/CalculadoraService_schema1.xsd"/>
  </xsd:schema>
 </types>

 <message name="sumar">
  <part name="parameters" element="tns:sumar"/>
 </message>

 <message name="sumarResponse">
  <part name="parameters" element="tns:sumarResponse"/>
 </message>

 <message name="restar">
  <part name="parameters" element="tns:restar"/>
 </message>

 <message name="restarResponse">
  <part name="parameters" element="tns:restarResponse"/>
 </message>

 <portType name="Calculadora">

  <operation name="sumar">
   <input message="tns:sumar"/>
   <output message="tns:sumarResponse"/>
  </operation>

  <operation name="restar">
   <input message="tns:restar"/>
   <output message="tns:restarResponse"/>
  </operation>
 </portType>

<binding name="CalculadoraPortBinding" type="tns:Calculadora">
  <soap:binding transport="http://schemas.xmlsoap.org/soap/http"
     style="document"/>

  <operation name="sumar">
   <soap:operation soapAction=""/>

   <input>
    <soap:body use="literal"/>
   </input>

   <output>
    <soap:body use="literal"/>
   </output>
  </operation>

  <operation name="restar">
   <soap:operation soapAction=""/>

   <input>
    <soap:body use="literal"/>
   </input>

   <output>
    <soap:body use="literal"/>
   </output>
  </operation>
 </binding>

 <service name="CalculadoraService">

  <port name="CalculadoraPort" binding="tns:CalculadoraPortBinding">
   <soap:address location="http://tleyolt:8080/Calculadora/CalculadoraService"/>
  </port>
 </service>
</definitions>
```


The result

An simple C# Client

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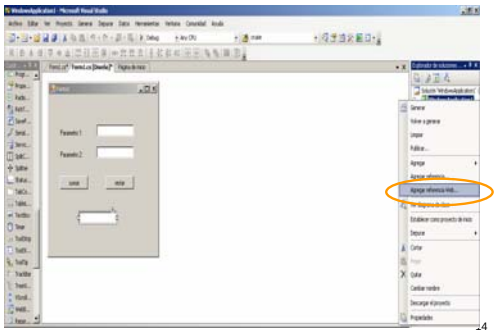
Add the reference



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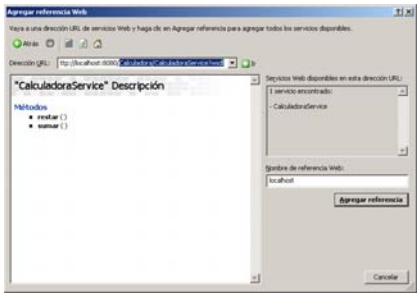
Add the reference

http://localhost:8080/Calculadora/CalculadoraService?wsdl



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code

```
private void sumar_Click(object sender, EventArgs e)
    {
        localhost.CalculadoraService cal;
        cal = new localhost.CalculadoraService();
        int a = int.Parse(pr1.Text);
        int b = int.Parse(pr2.Text);
        resultado.Text = Convert.ToString(cal.sumar(a,b));
    }
```

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The result

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