

2G1523

Programming Web Services Homework 2

Course leader:

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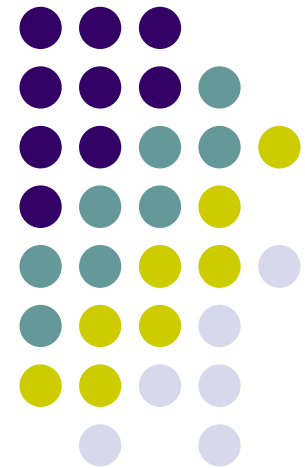
misha@imit.kth.se

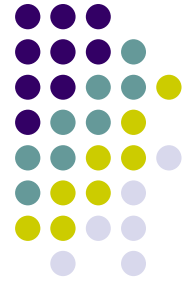
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KTH/ICT/ECS , VT07





Homework #2 - Deadline

- Start date: 2007-02-01
- Due date: 2007-02-11
- Deliverable: Report (See course web)



Homework #2 - Aims

- Aim: To learn the followings:
 - WSDL and SOAP
 - Tomcat and Axis
 - How to invoke a web service by SOAP message in Java



Homework #2 - Tomcat

- Tomcat
 - Apache Jakarta Tomcat **5.5**
 - Servlet container for Java Servlet and JavaServer Pages
 - You need J2SE 5 JRE. Set JAVA_HOME variable
 - <http://jakarta.apache.org/tomcat/index.html>
 - Download and install Tomcat 5.5.
 - Start: bin\tomcat5.exe
 - Do NOT close the console window!
 - Try <http://127.0.0.1:8080/>



Homework #2 - Tomcat

- Administration:
 - Status
 - Tomcat Administration:
 - Configuring Server, Resources and Users
 - Tomcat Manager:
 - Manageing application, deploy new applications
- Documentation:
 - Tomcat Documentation



Homework #2 - Axis

- Axis
 - An implementation of the SOAP submission to web services
 - Apache eXtensible Interaction System!
 - <http://ws.apache.org/axis/>
 - Download and install final version **1.4**
 - You need a web server up and running!
 - Copy webapps/axis to the webapps directory of your server.
 - You may need to copy more library files!



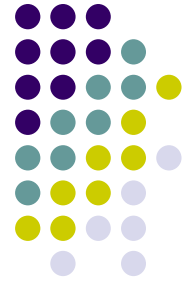
Homework #2 - Axis

- Start the web server
- Try to open <http://127.0.0.1:8080/axis/>
- You should see the welcome page!
- Try to validate the configuration.
- If any core or optional component is missing, try to fix it.
- Try to view the list of deployed web services
- Try to call a local endpoint



Homework #2 – New WS

- Calculator:
 - There is a calculator web service with four operations: addition, subtraction, multiplication and division.
 - There is a WSDL document for this Web service
 - Generate the service using **WSDL2Java**. You should use -s parameter to generate wsdd file for deploy



Homework #2 – New WS

- WSDL for calculator

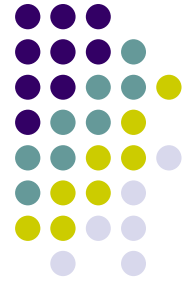
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```
<wsdl:message name="multiplicationResponse">  
<wsdl:part name="multiplicationReturn" type="xsd:int"/>  
</wsdl:message>
```

```
<wsdl:message name="subtractionResponse">  
<wsdl:part name="subtractionReturn" type="xsd:int"/>  
</wsdl:message>
```

```
<wsdl:message name="addRequest">  
<wsdl:part name="addend1" type="xsd:int"/>  
<wsdl:part name="addend2" type="xsd:int"/>  
</wsdl:message>
```

.....



Homework #2 – New WS

- Complete the code in Impl class
- Deploy it in axis
- Construct incoming and outgoing SOAP messages for invoking the "ADD" operation.
- Write a java program to invoke this web service. The functions of this Java program are as follows:
 - The user should be able to choose an operation for calculation.
 - The user is required to input the value of two input parameters.
 - The result is returned to the user after the invocation of the correct operation of the Web service.



Homework #2 – Report

- A short description of your activities for installation of the tools (what problems did you face)
- a protocol of compilation of the WSDL service to Java
- Completed code for the implementation of the service
- Protocol of deployment of the service in the axis.
- Texts of incoming and outgoing SOAP messages for invoking "add" operation
- Source code of Java program for invocation of the Calculator service according to required functionality in the Exercise



Homework #2 - Delivery

- Send your report by e-mail to both misha@imit.kth.se and hrmizani@imit.kth.se.
- Deadline: 2007-02-11
- See course web for more information.

GOOD LUCK!