

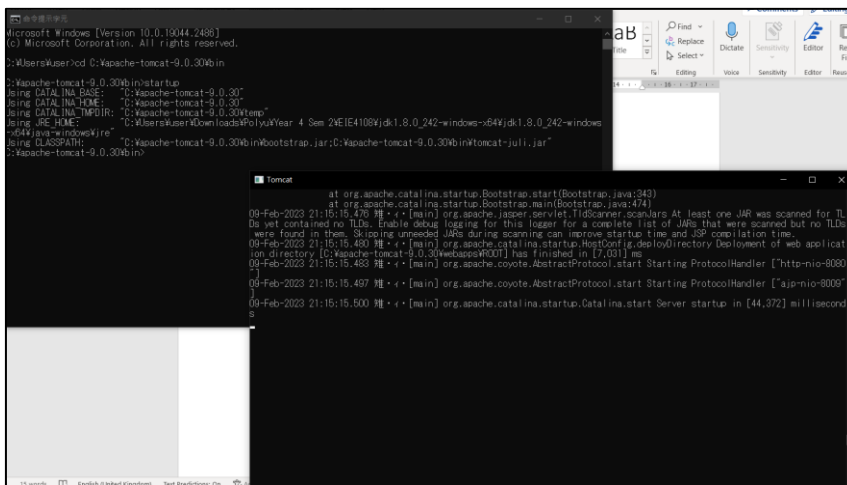
# EIE4108 Distributed Systems and Cloud Computing

## Assignment 3

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### Web Services Initiating



The screenshot shows a Windows command prompt window with the following commands and output:

```
C:\Users\User>cd C:\apache-tomcat-9.0.306\bin
C:\apache-tomcat-9.0.306\bin>startup
Using CATALINA_BASE:   "C:\apache-tomcat-9.0.306\"
Using CATALINA_HOME:   "C:\apache-tomcat-9.0.306\"
Using CATALINA_TMPDIR: "C:\apache-tomcat-9.0.306\temp\"
Using JRE_HOME:         "C:\Users\User\Downloads\JavaYear 4 Sem 2\EIE4108Vjdk1.8.0_242-windows-x64\jdk1.8.0_242-windows-x64\java-winows\jre\"
Using CLASSPATH:        "C:\apache-tomcat-9.0.306\bin\bootstrap.jar;C:\apache-tomcat-9.0.306\bin\tomcat-juli.jar"
C:\apache-tomcat-9.0.306\bin>
```

The Tomcat console output shows the following logs:

```
at org.apache.catalina.startup.Bootstrap.start(Bootstrap.java:343)
at org.apache.catalina.startup.Bootstrap.main(Bootstrap.java:474)
09-Feb-2023 21:15:15.436 堆 * * [main] org.apache.jasper.servlet.TldScanner.scanJars At least one JAR was scanned for TLD
0s yet contained no TLDs. Enable debug logging for this logger for a complete list of JARs that were scanned but no TLDs
were found in them. Skipping unneeded JARs during scanning can improve startup time and JSP compilation time.
09-Feb-2023 21:15:15.480 堆 * * [main] org.apache.catalina.startup.HostConfig.deployDirectory Deployment of web applicat
ion directory [C:\apache-tomcat-9.0.306\webapps\ROOT] has finished in [7.00] ms
09-Feb-2023 21:15:15.483 堆 * * [main] org.apache.coyote.AbstractProtocol.start Starting ProtocolHandler ["http-nio-8080"]
09-Feb-2023 21:15:15.497 堆 * * [main] org.apache.coyote.AbstractProtocol.start Starting ProtocolHandler ["ajp-nio-8009"]
09-Feb-2023 21:15:15.500 堆 * * [main] org.apache.catalina.startup.Catalina.start Server startup in [44,372] millisecond
s
```

Web 服務	
服務名稱: (http://calculator) CalculatorImplService	地址: http://localhost:8080/ExampleJAX-WS_Assignment_3/calculator
連接埠名稱: (http://calculator) CalculatorImplPort	WSDL: http://localhost:8080/ExampleJAX-WS_Assignment_3/calculator?wsdl
執行類別: calculator.CalculatorImpl	

## Client Proxy Creating

```
命令提示字元

C:\Users\User\Documents\Eclipse-2019-12-workspace\ExampleJAX-WS_Assignment_3\src>set PATH=C:\Users\User\Downloads\Polyu
Year 4 Sem 2\IE4108\jdk1.8.0_242-windows-x64\jdk1.8.0_242-windows-x64\java-windows\bin;%PATH%

C:\Users\User\Documents\Eclipse-2019-12-workspace\ExampleJAX-WS_Assignment_3\src>java --version
Unrecognized option: --version
Error: Could not create the Java Virtual Machine.
Error: A fatal exception has occurred. Program will exit.

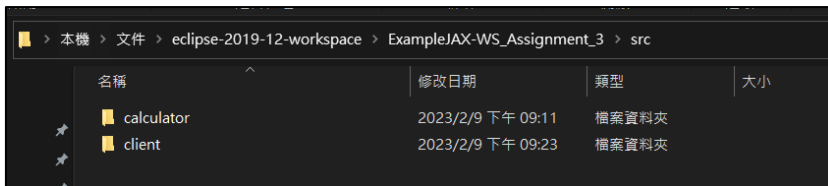
C:\Users\User\Documents\Eclipse-2019-12-workspace\ExampleJAX-WS_Assignment_3\src>java -version
openjdk version "1.8.0_242"
OpenJDK Runtime Environment (AdoptOpenJDK)(build 1.8.0_242-b08)
OpenJDK 64-Bit Server VM (AdoptOpenJDK)(build 25.242-b08, mixed mode)

C:\Users\User\Documents\Eclipse-2019-12-workspace\ExampleJAX-WS_Assignment_3\src>wsimport -keep -p client http://localhost:8080/ExampleJAX-WS_Assignment_3/calculate?wsdl
正在剖析 WSDL...

正在生成程式碼...

正在編譯程式碼...

C:\Users\User\Documents\Eclipse-2019-12-workspace\ExampleJAX-WS_Assignment_3\src>
```



```
eclipse-2019-12-workspace - ExampleJAX-WS_Assignment_3\src\client\CalculatorImplService.java - Eclipse SDK
File Edit Source Refactor Navigate Search Project Run Window Help

CalculatorImplService.java
1 package client;
2
3 import java.net.MalformedURLException;
4
5 /**
6  * This class was generated by the JAX-WS RI.
7  * JAX-WS RI 2.2.9-b130926.1015
8  * Generated source version: 2.2
9  */
10
11 @WebServiceClient(name = "CalculatorImplService", targetNamespace = "http://calculator/", wsdlLocation = "http://localhost:8080/ExampleJAX-WS_Assignment_3/calculate?wsdl")
12 public class CalculatorImplService
13 extends Service
14 {
15     private final static URL CALCULATORIMPLSERVICE_WSDL_LOCATION;
16     private final static WebServiceException CALCULATORIMPLSERVICE_EXCEPTION;
17     private final static QName CALCULATORIMPLSERVICE_QNAME = new QName("http://calculator/", "CalculatorImplService");
18
19     static {
20         URL url = null;
21         WebServiceException e = null;
22         try {
23             url = new URL("http://localhost:8080/ExampleJAX-WS_Assignment_3/calculate?wsdl");
24         } catch (MalformedURLException ex) {
25             e = new WebServiceException(ex);
26             CALCULATORIMPLSERVICE_WSDL_LOCATION = url;
27             CALCULATORIMPLSERVICE_EXCEPTION = e;
28         }
29     }
30
31     public CalculatorImplService() {
32         super(__getWsdlLocation(), CALCULATORIMPLSERVICE_QNAME);
33     }
34
35     public CalculatorImplService(WebServiceFeature... features) {
36         super(__getWsdlLocation(), CALCULATORIMPLSERVICE_QNAME, features);
37     }
38
39     private String __getWsdlLocation() {
40         String wsdlLocation = CALCULATORIMPLSERVICE_WSDL_LOCATION.toExternalForm();
41         return wsdlLocation;
42     }
43 }
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```
eclipse-2019-12-workspace - ExampleJAX-WS_Assignment_3\src\client\CalculatorInterface.java - Eclipse SDK
File Edit Source Refactor Navigate Search Project Run Window Help

CalculatorInterface.java
1 package client;
2
3 import javax.xml.ws.WebMethod;
4
5 /**
6  * This class was generated by the JAX-WS RI.
7  * JAX-WS RI 2.2.9-b130926.1015
8  * Generated source version: 2.2
9  */
10
11 @WebService(name = "CalculatorInterface", targetNamespace = "http://calculator/")
12 @SOAPBinding(style = SOAPBinding.Style.RPC)
13 public interface CalculatorInterface {
14
15     /**
16      *
17      * @param arg1
18      * @param arg0
19      * @return
20      * returns int
21      */
22     @WebMethod
23     @ActionResult(partName = "return")
24     @Action(input = "http://calculator/CalculatorInterface/addRequest", output = "http://calculator/CalculatorInterface/addResponse")
25     public int add(
26         @WebParam(name = "arg0", partName = "arg0")
27         int arg0,
28         @WebParam(name = "arg1", partName = "arg1")
29         int arg1);
30 }
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## Client Calling Function

