Using Jni4Net (Part 3) - Writing and Invoking O2 Methods from Java and Eclipse

Using Jni4Net ProxyGen to create the java and .Net proxy files:

winforms.proxygen.xml* | Control.generated.cs | WinForms_ExtensionMethods.generated.cs | WinForms.generated.cs

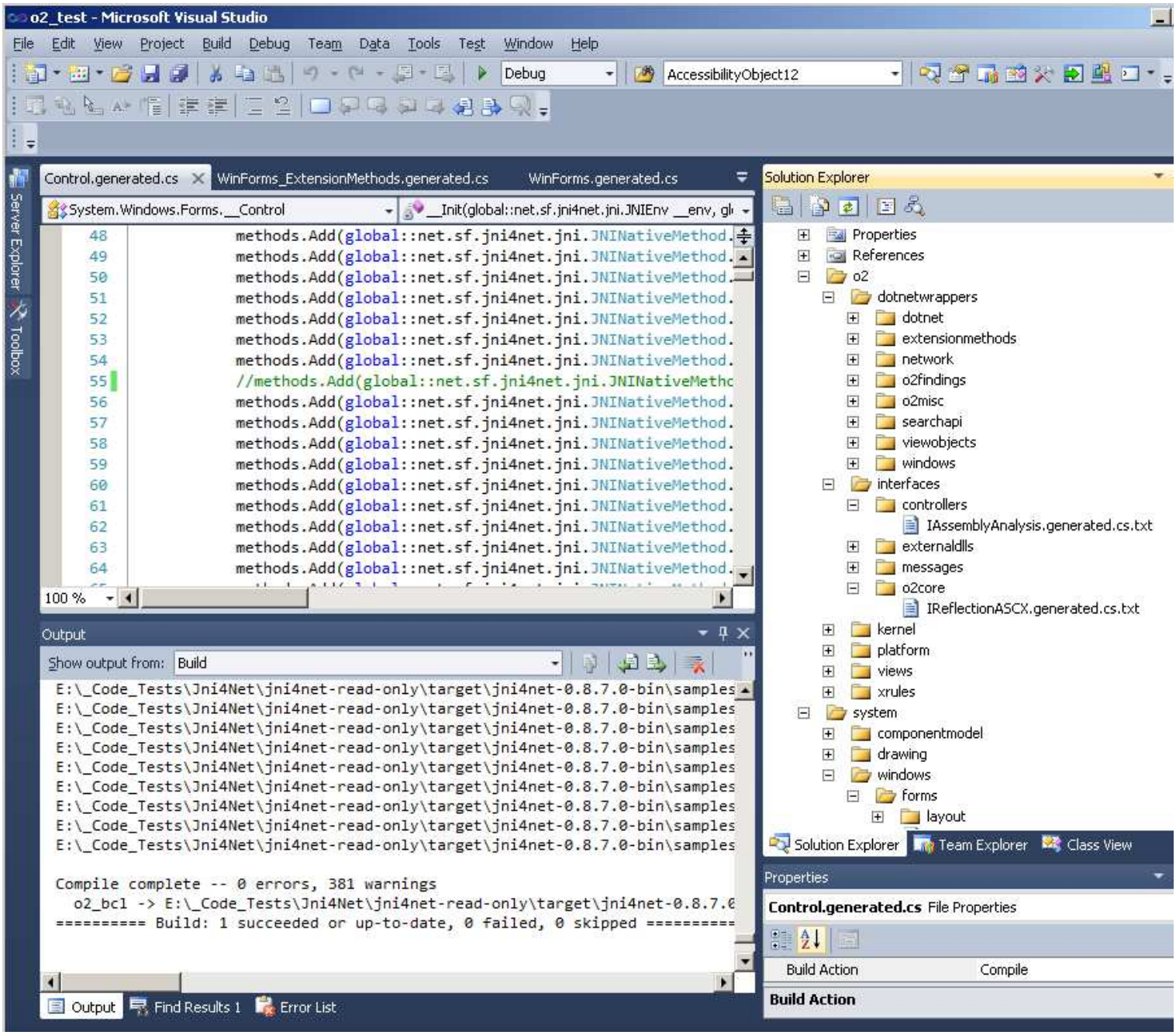
```
<!-- List of assemblies, which define known types for generator -->
<AssemblyReference Assembly="O2_FluentSharp_BCL, Version=4.5.1.0, Culture=neutral, PublicKeyToken=5
                   />

<!-- List of CLR types which should have proxy generated -->

<ClrType TypeName="O2.DotNetWrappers.DotNet.ClickOnceDeployment"/>
<ClrType TypeName="O2.DotNetWrappers.DotNet.CompileEngine_WinForms"/>
<ClrType TypeName="O2.DotNetWrappers.DotNet.Dnd"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.WinForms_ExtensionMethods_Misc_GUI_Helpers"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.WinForms_ExtensionMethods_WebBrowser_Add_Contro
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.WinForms_ExtensionMethods_WebBrowser_Open"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.WinForms_ExtensionMethods_WebBrowser_Dialogs"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.WinForms_ExtensionMethods_WebBrowser_Events"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.WinForms_ExtensionMethods_WebBrowser_Html"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.WinForms_ExtensionMethods_WebBrowser_Browser"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.WinForms_ExtensionMethods_WebBrowser_HtmlDocume
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.WinForms_ExtensionMethods_WebBrowser_Scripting"
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.WinForms_ExtensionMethods_WebBrowser_DefaultSit
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.Extra_Browser"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.Extra_Browser_Document"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.Extra_Browser_HtmlElement"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.Clipboard_ExtensionMethods"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.ComObjects_ExtensionMethods"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.Lists_for_ComObject_ExtensionMethods"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.Compilation_ExtensionMethods"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.ConfigFiles_ExtensionMethods_WinForms"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.Data_ExtensionMethods"/>
<ClrType TypeName="O2.DotNetWrappers.ExtensionMethods.Download_ExtensionMethods"/>
```

100 %

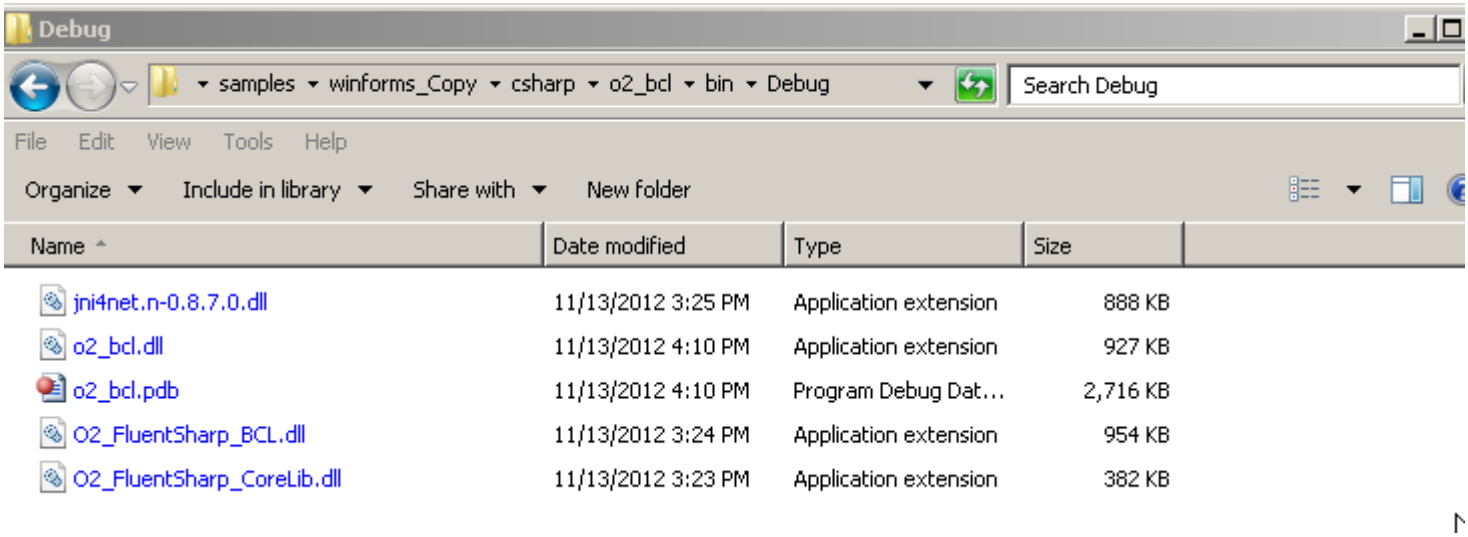
Here is the (quick hacked) script to help to create the ClrType stubs (needed since ProxyGen was crashing on a couple types)

```
var mapping = "";
foreach(var type in "O2_FluentSharp_BCL.dll".assembly().types())
       if (type.FullName.contains("+", "`").isFalse())
              mapping += "<ClrType TypeName=\"{0}\"/>".line().format(type.FullName);
textbox.set_Text(mapping);
return "O2_FluentSharp_BCL.dll".assembly().FullName;
return "done";

/*var mapping = "";
foreach(var type in "O2_FluentSharp_CoreLib.dll".assembly().types())
       if (type.FullName.contains("+", "`").isFalse())
              mapping += "<ClrType TypeName=\"{0}\"/>".line().format(type.FullName);
textbox.set_Text(mapping);*/
return "ok";
```

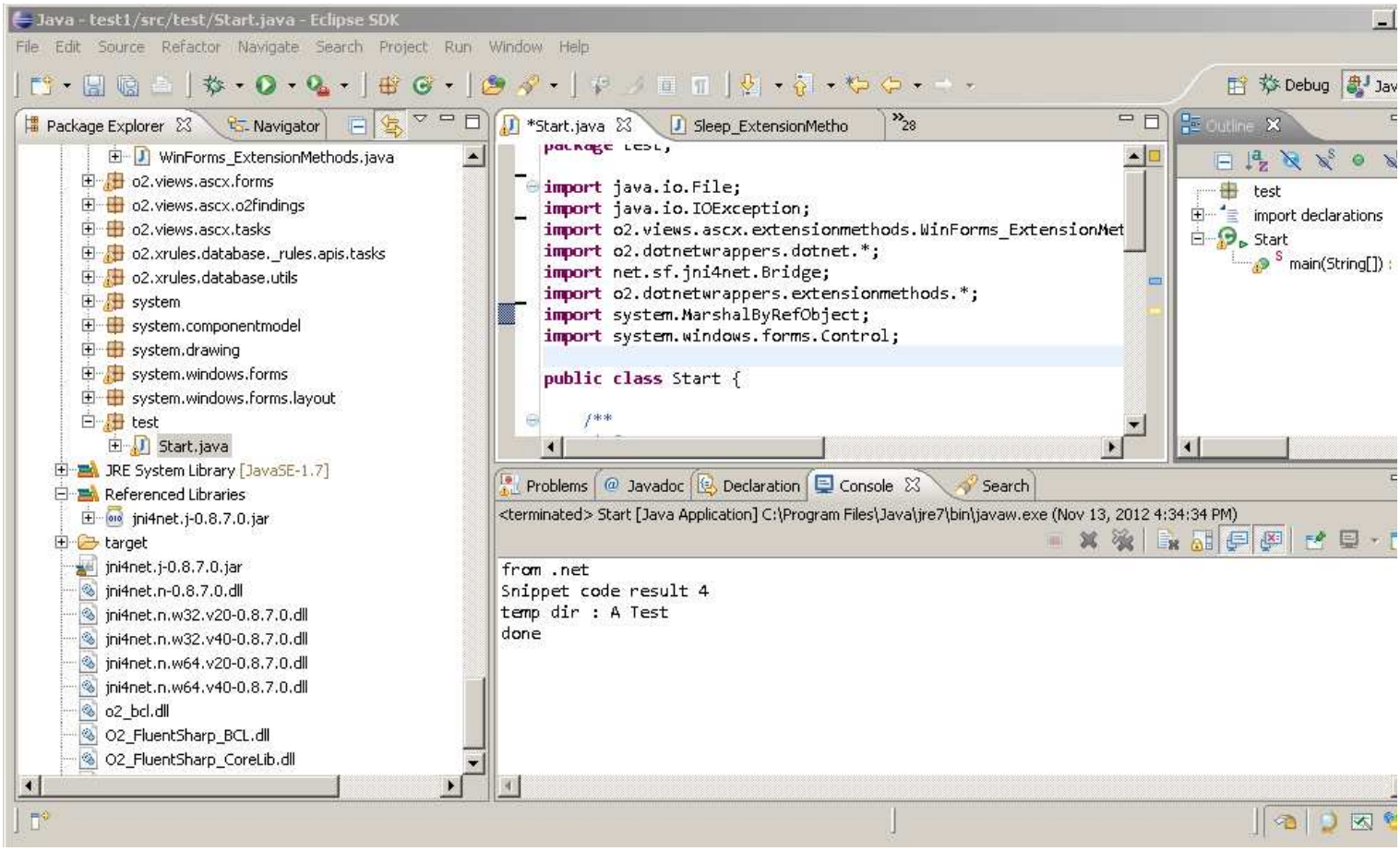
Here is visual studio compiling the *.cs proxy files (there were a couple minor changes required to compile it (in most cases it was just a case of removing a couple files or functions))



This created a o2_bcl.dll



which was added to an eclipse project

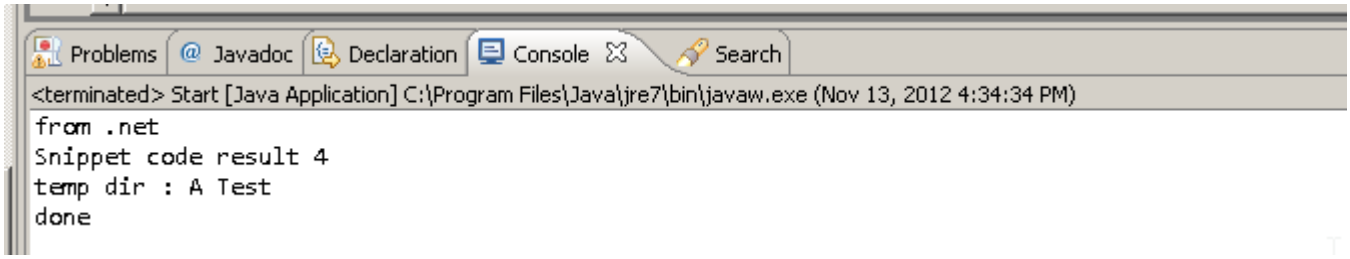


and will allow the invocation of .Net code (executed under the CLR) while coded in java/eclipse

Invoking .Net's *System.Console.Writeline,* O2's StringsAndLists method and dynamically compiling/executing a code snippet (from Java's JMV and coded in Eclipse)

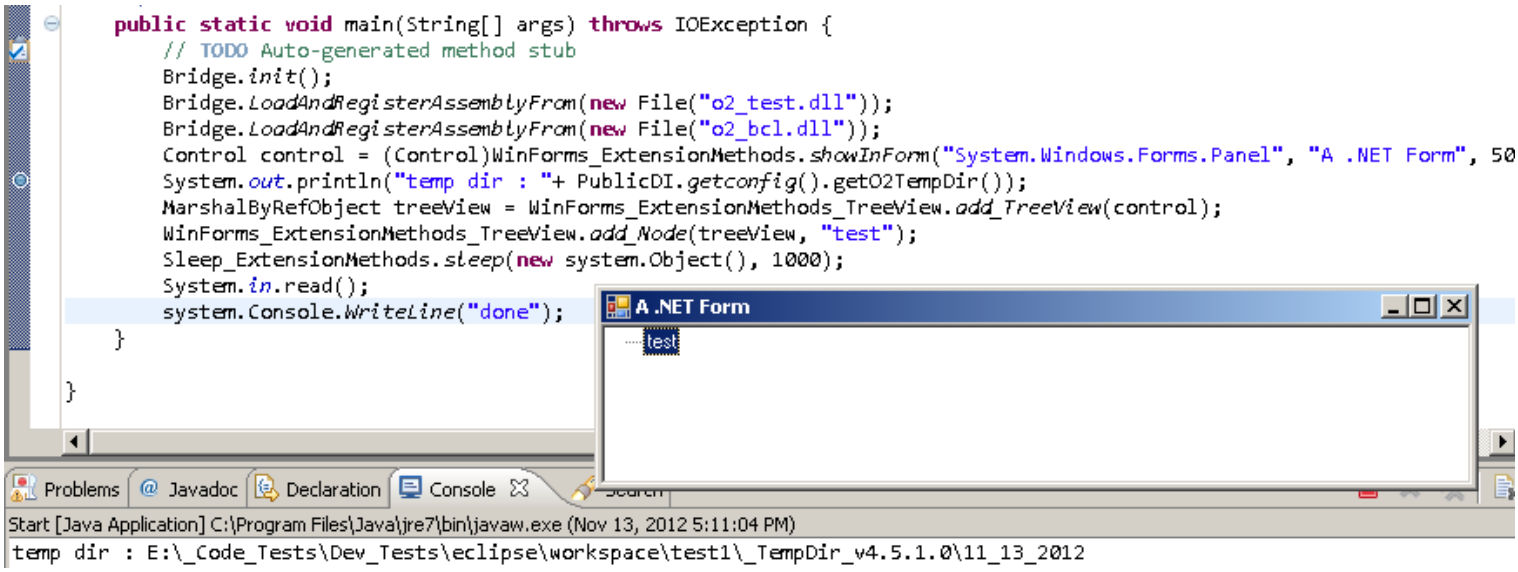
```
package test;

import java.io.File;
import java.io.IOException;
import o2.views.ascx.extensionmethods.WinForms_ExtensionMethods;
import o2.dotnetwrappers.dotnet.*;
import net.sf.jni4net.Bridge;
import o2.dotnetwrappers.extensionmethods.*;
import system.MarshalByRefObject;
import system.windows.forms.Control;

public class Start
{
	public static void main(String[] args) throws IOException
	{
		Bridge.init();
		Bridge.LoadAndRegisterAssemblyFrom(new File("o2_test.dll"));

		system.Console.WriteLine("from .net");
		CompileEngine compileEngine = new CompileEngine();
		String codeSnippet = "return 2+2;";
		Object result = CompileEngine_ExtensionMethods.compileAndExecuteCodeSnippet(codeSnippet);
		System.out.println("Snippet code result " + result);
		System.out.println("temp dir : " + StringsAndLists.addSpacesOnUpper("ATest"));
		system.Console.WriteLine("done");
	}
```

```
}
```



Creating a new Windows Form and adding a TreeView (with a node) to it (code written in pure Java)

```
	public static void main(String[] args) throws IOException
	{
		// TODO Auto-generated method stub
		Bridge.init();
		Bridge.LoadAndRegisterAssemblyFrom(new File("o2_test.dll"));
		Bridge.LoadAndRegisterAssemblyFrom(new File("o2_bcl.dll"));
		Control control = (Control)WinForms_ExtensionMethods.showInForm
("System.Windows.Forms.Panel", "A .NET Form", 500, 300);
		System.out.println("temp dir : "+ PublicDI.getconfig().getO2TempDir());
		MarshalByRefObject treeView = WinForms_ExtensionMethods_TreeView.add_TreeView(control);
		WinForms_ExtensionMethods_TreeView.add_Node(treeView, "test");
		Sleep_ExtensionMethods.sleep(new system.Object(), 1000);
		System.in.read();
		system.Console.WriteLine("done");
	}
```



Creating a Form, adding a TreeView and waiting for Form to close

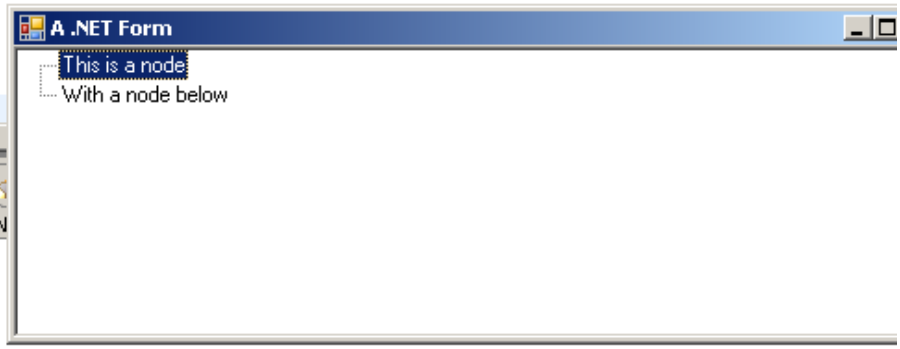
```
	public static void main(String[] args) throws IOException, InterruptedException
	{
		Bridge.init();

		Bridge.LoadAndRegisterAssemblyFrom(new File("o2_bcl.dll"));

		system.Console.WriteLine("Creating a Form");

		Control control = (Control)WinForms_ExtensionMethods.showInForm
("System.Windows.Forms.Panel", "A .NET Form", 500, 300);

		system.Console.WriteLine("Adding a TreeView and two nodes");
		MarshalByRefObject treeView = WinForms_ExtensionMethods_TreeView.add_TreeView(control);
		WinForms_ExtensionMethods_TreeView.add_Node(treeView, "This is a node");
		WinForms_ExtensionMethods_TreeView.add_Node(treeView, "With a node below");

		system.Console.WriteLine("Waiting for Form to close");
		O2Gui parentForm = (O2Gui)WinForms_ExtensionMethods_Control_Object.parentForm(control);
```

```
        parentForm.waitForFormClose();

        system.Console.WriteLine("done");
    }
```

```
    public static void main(String[] args) throws IOException, InterruptedException {
        Bridge.init();

        Bridge.LoadAndRegisterAssemblyFrom(new File("o2_bcl.dll"));

        system.Console.WriteLine("Creating a Form");

        Control control = (Control)WinForms_ExtensionMethods.showInForm("System.Windows.Forms.Panel", "A .NET Fo

        system.Console.WriteLine("Adding a TreeView and two nodes");
        MarshalByRefObject treeView = WinForms_ExtensionMethods_TreeView.add_TreeView(control);
        WinForms_ExtensionMethods_TreeView.add_Node(treeView, "This is a node");
        WinForms_ExtensionMethods_TreeView.add_Node(treeView, "With a node below");

        system.Console.WriteLine("Waiting for Form to close");
        O2Gui parentForm = (O2Gui)WinForms_ExtensionMethods_Control_Object.parentForm(control);
        parentForm.waitForFormClose();

        system.Console.WriteLine("done");
    }
```

Problems | Javadoc | Declaration | Console

```
Start [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (N
Creating a Form
Adding a TreeView and two nodes
Waiting for Form to close
```



Getting the Log object, writing some events and viewing the log's content:

```
    public static void main(String[] args) throws IOException, InterruptedException {
        Bridge.init();
        Bridge.LoadAndRegisterAssemblyFrom(new File("o2_test.dll"));


        KO2Log log = PublicDI.getlog();
        log.info("this is an info message");
        log.debug("this is an debug message");
        log.error("this is an error message");

        MemoryLogger memoryLogger = (MemoryLogger)log.getLogRedirectionTarget();
        Object logData = memoryLogger.getLogData();
        system.Console.WriteLine(logData.toString());
```

Problems | Javadoc | Declaration | Console | Search

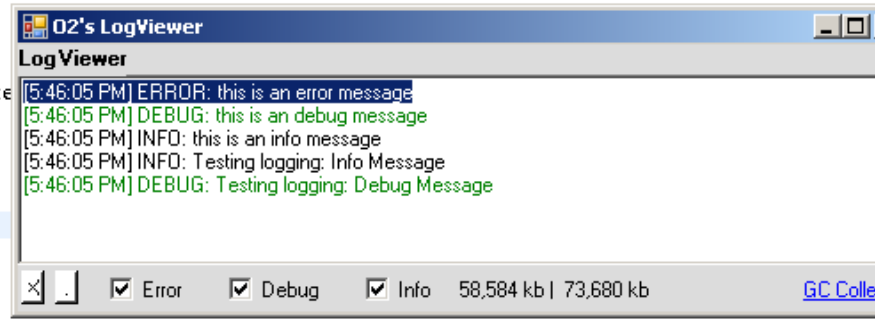
```
<terminated> Start [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Nov 13, 2012 5:23:50 PM)
Creating a Form
Adding a TreeView and two nodes
Waiting for Form to close
done
```

Opening the O2's LogView control

```
package test;

import java.io.File;
import java.io.IOException;
```

```
import o2.views.ascx.ascx.maingui.ascx_LogViewer;
import o2.views.ascx.classes.maingui.O2Gui;
import net.sf.jni4net.Bridge;
import o2.dotnetwrappers.extensionmethods.*;
import o2.kernel.PublicDI;
import o2.kernel.interfacesbaseimpl.KO2Log;
import system.MarshalByRefObject;

public class Start
{

	public static void main(String[] args) throws IOException, InterruptedException
	{
		Bridge.init();
		Bridge.LoadAndRegisterAssemblyFrom(new File("o2_test.dll"));
		Bridge.LoadAndRegisterAssemblyFrom(new File("o2_bcl.dll"));
		MarshalByRefObject control = WinForms_ExtensionMethods_Form.popupWindow("O2's
LogViewer",500,150);
		WinForms_ExtensionMethods_Control_Object.add_Control(control, ascx_LogViewer.typeof());

		KO2Log log = PublicDI.getlog();
		log.info("this is an info message");
		log.debug("this is an debug message");
		log.error("this is an error message");

		O2Gui parentForm = (O2Gui)WinForms_ExtensionMethods_Control_Object.parentForm(control);
		parentForm.waitForFormClose();
	}

}
```

```
public static void main(String[] args) throws IOException, InterruptedException
{
    Bridge.init();
    Bridge.LoadAndRegisterAssemblyFrom(new File("o2_test.dll"));
    Bridge.LoadAndRegisterAssemblyFrom(new File("o2_bcl.dll"));
    MarshalByRefObject control = WinForms_ExtensionMethods_Form.popupWindow("O2's LogViewer",500,150);
    WinForms_ExtensionMethods_Control_Object.add_Control(control, ascx_LogViewer.typeof());

    KO2Log log = PublicDI.getlog();
    log.info("this is an info message");
    log.debug("this is an debug message");
    log.error("this is an error message");

    O2Gui parentForm = (O2Gui)WinForms_Exte
    parentForm.waitForFormClose();
}
```



Getting current version of CLR and process Id+Name:

```
package test;

import java.io.File;
import java.io.IOException;

import net.sf.jni4net.Bridge;
import o2.dotnetwrappers.windows.Processes;
import o2.kernel.*;

public class Start
{

	public static void main(String[] args) throws IOException
	{
		Bridge.init();
		Bridge.LoadAndRegisterAssemblyFrom(new File("o2_test.dll"));

		system.Console.WriteLine(clr.details()  + " and name: " + Processes.getCurrentProcessName
());
	}
```

```
}
```

```
    public static void main(String[] args) throws IOException
    {
        Bridge.init();
        Bridge.LoadAndRegisterAssemblyFrom(new File("o2_test.dll"));

        system.Console.WriteLine(clr.details()  + " and name: " + Processes.getCurrentProcessName());
    }
```

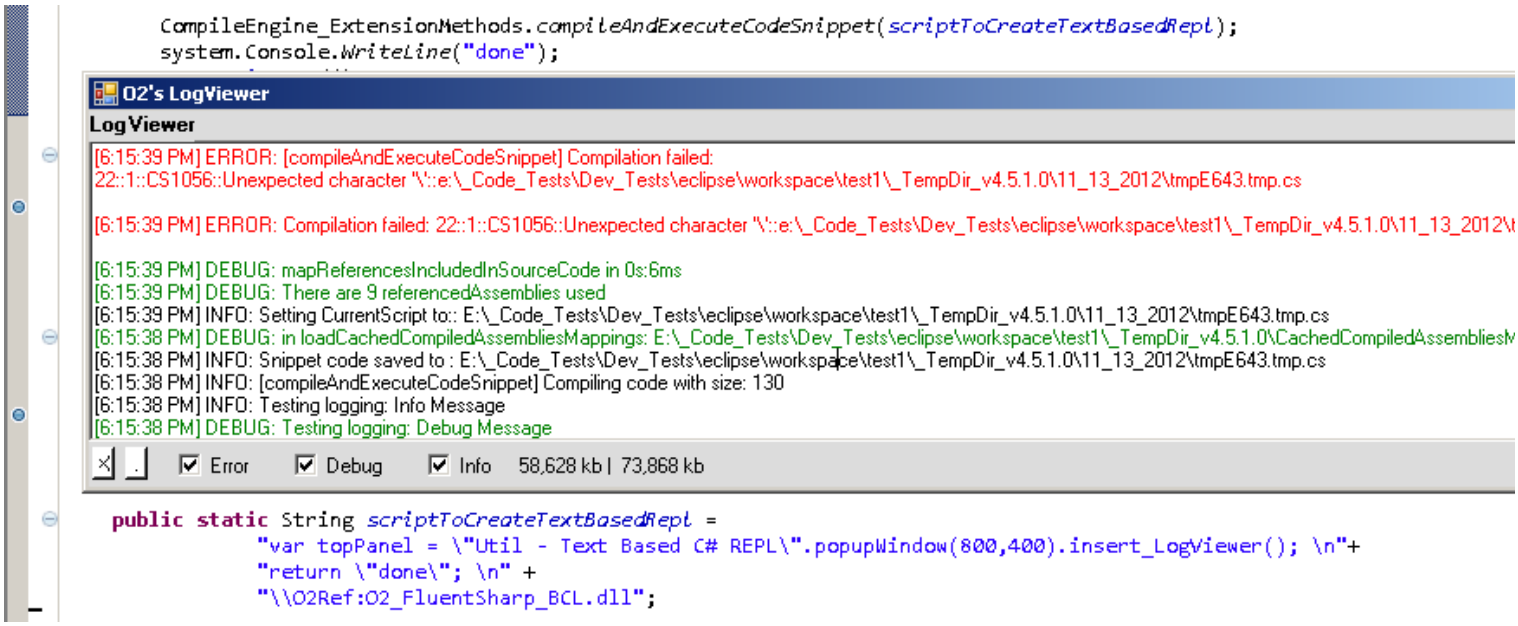
```
Problems  Javadoc  Declaration  Console  Search
<terminated> Start [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (Nov 13, 2012 5:50:40 PM)
CLR: 4.0 in 32 bit process with id: 17248  and name: javaw
```

Seeing the result of a code snippet compilation in a Log Viewer

```
package test;

import java.io.File;
import java.io.IOException;

import net.sf.jni4net.Bridge;
import o2.dotnetwrappers.extensionmethods.CompileEngine_ExtensionMethods;
import o2.dotnetwrappers.extensionmethods.WinForms_ExtensionMethods_Control_Object;
import o2.dotnetwrappers.extensionmethods.WinForms_ExtensionMethods_Form;
import o2.views.ascx.ascx.maingui.ascx_LogViewer;
import system.MarshalByRefObject;

public class Start
{

	public static void main(String[] args) throws IOException
	{
		setupBridge();
		openLogViewer();

		system.Console.WriteLine("compiling and invoking script");

		CompileEngine_ExtensionMethods.compileAndExecuteCodeSnippet(scriptToCreateTextBasedRepl);
		system.Console.WriteLine("done");
		System.in.read();
	}

	public static void setupBridge() throws IOException
	{
		Bridge.init();
		Bridge.LoadAndRegisterAssemblyFrom(new File("o2_test.dll"));
		Bridge.LoadAndRegisterAssemblyFrom(new File("o2_bcl.dll"));

	}
	public static void openLogViewer()
	{
		MarshalByRefObject control = WinForms_ExtensionMethods_Form.popupWindow("O2's
LogViewer",700,550);
		WinForms_ExtensionMethods_Control_Object.add_Control(control, ascx_LogViewer.typeof());
	}


	public static String scriptToCreateTextBasedRepl =
				"var topPanel = \"Util - Text Based C# REPL\".popupWindow
(800,400).insert_LogViewer(); \n"+
				"return \"done\"; \n" +
				"\\O2Ref:O2_FluentSharp_BCL.dll";

 }
```

Note: the error shown below is actually the .Net compilation error from trying to compile the snippet code stored in the

scriptToCreateTextBasedRepl java variable



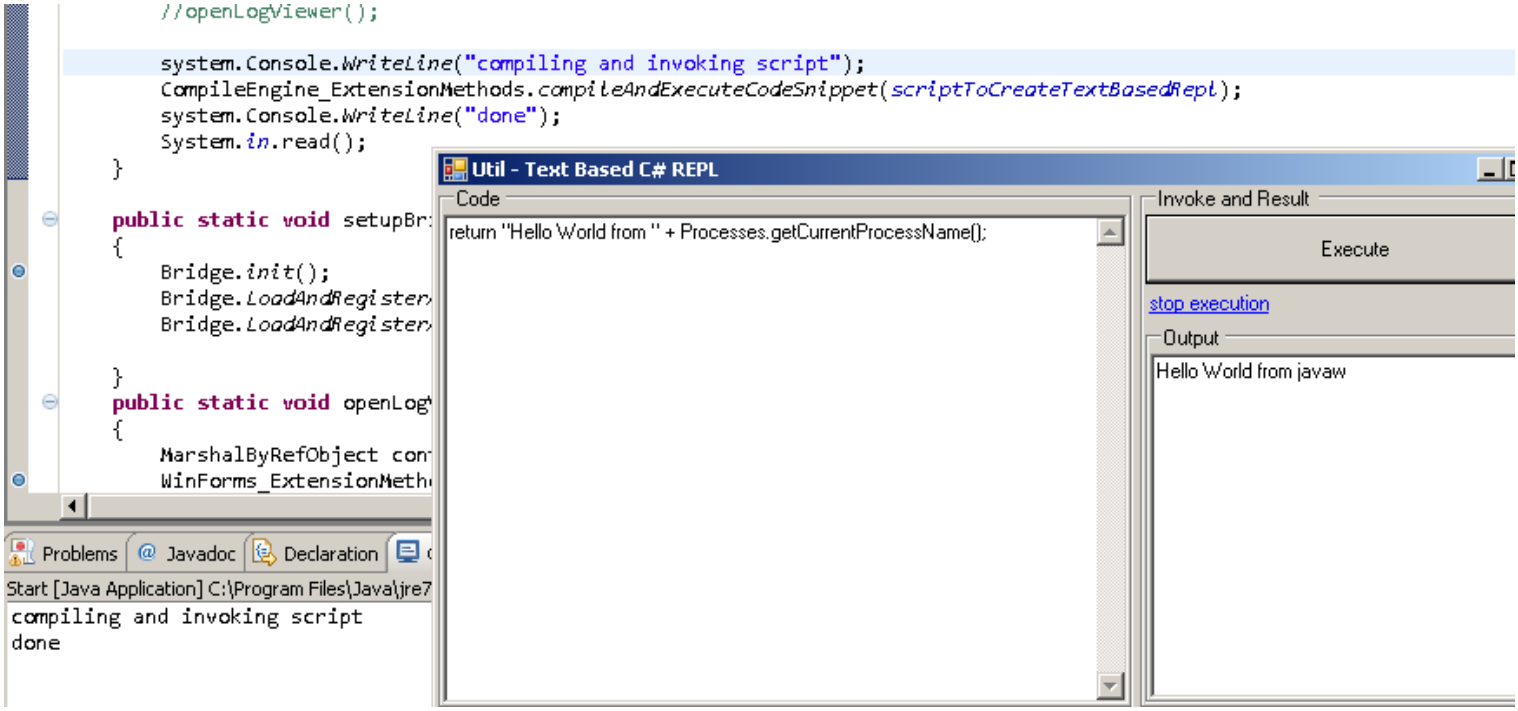
After some debuging and code changes (due to some extension methods not being detected) , here is the final version of the:

- **Java code (executed in the JVM)**
- **which will invoke the .Net method to compile a snippet**
- **invoke (in the CRL) thefirst method of the compiled assembly**

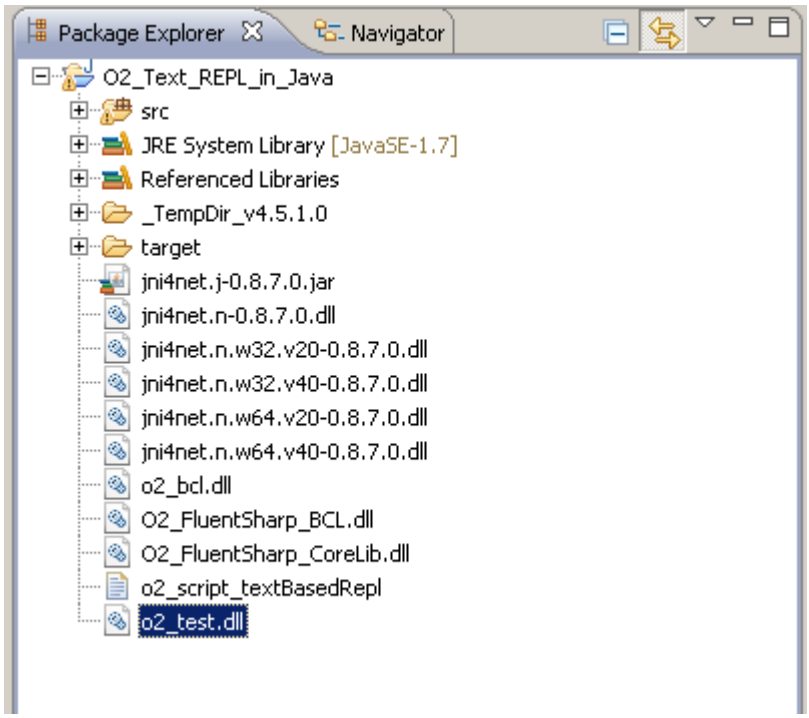
```
package test;

import java.io.File;
import java.io.IOException;

import net.sf.jni4net.Bridge;
import o2.dotnetwrappers.extensionmethods.CompileEngine_ExtensionMethods;
import o2.dotnetwrappers.extensionmethods.WinForms_ExtensionMethods_Control_Object;
import o2.dotnetwrappers.extensionmethods.WinForms_ExtensionMethods_Form;
import o2.views.ascx.ascx.maingui.ascx_LogViewer;
import system.MarshalByRefObject;

public class Start
{

	public static void main(String[] args) throws IOException
	{
		setupBridge();
		//openLogViewer();

		system.Console.WriteLine("compiling and invoking script");
		system.Console.WriteLine(scriptToCreateTextBasedRepl);
		CompileEngine_ExtensionMethods.compileAndExecuteCodeSnippet(scriptToCreateTextBasedRepl);
		system.Console.WriteLine("done");
		System.in.read();
	}

	public static void setupBridge() throws IOException
	{
		Bridge.init();
		Bridge.LoadAndRegisterAssemblyFrom(new File("o2_test.dll"));
		Bridge.LoadAndRegisterAssemblyFrom(new File("o2_bcl.dll"));

	}
	public static void openLogViewer()
	{
		MarshalByRefObject control = WinForms_ExtensionMethods_Form.popupWindow("O2's
```

```
LogViewer",700,550);
            WinForms_ExtensionMethods_Control_Object.add_Control(control, ascx_LogViewer.typeof());
      }


      public static String scriptToCreateTextBasedRepl =
            "var topPanel = \"Util - Text Based C# REPL\".popupWindow(800,400).insert_LogViewer(); \n"+
                                    //
            "var replGui = O2.XRules.Database.Utils.REPL_Gui_ExtensionMethods.add_REPL_Gui(topPanel);
\n" +
            "var codeText = replGui.Code_Panel.add_TextArea().allowTabs(); \n"  +
            "Action execute = \n" +
                  "()=>{  \n" +
                  "            var compilationOk = false;  \n" +
                  "            var code = codeText.get_Text();  \n" +
                  "            var result = code.compileAndExecuteCodeSnippet(  \n" +
                  "                                                        (okMsg)=>   {
O2.XRules.Database.Utils.REPL_Gui_ExtensionMethods.showOutput(replGui,okMsg); compilationOk = true;},
\n" +
                  "                                                       (failMsg)=> {
O2.XRules.Database.Utils.REPL_Gui_ExtensionMethods.showErrorMessage(replGui,failMsg); });  \n" +
                  "            if(compilationOk)  \n" +
                  "                  O2.XRules.Database.Utils.REPL_Gui_ExtensionMethods.showOutput
(replGui, result);   \n" +
                  "      };  \n" +
            "replGui.On_ExecuteCode = execute;  \n" +

            "codeText.set_Text(\"return \\\"Hello World\\\";\");  \n" +
            "replGui.Execute_Button.click(); \n" +

            "return \"done\"; \n" +
            "//using O2.XRules.Database.Utils;\n"+
            "//O2Ref:O2_FluentSharp_BCL.dll";

 }
```

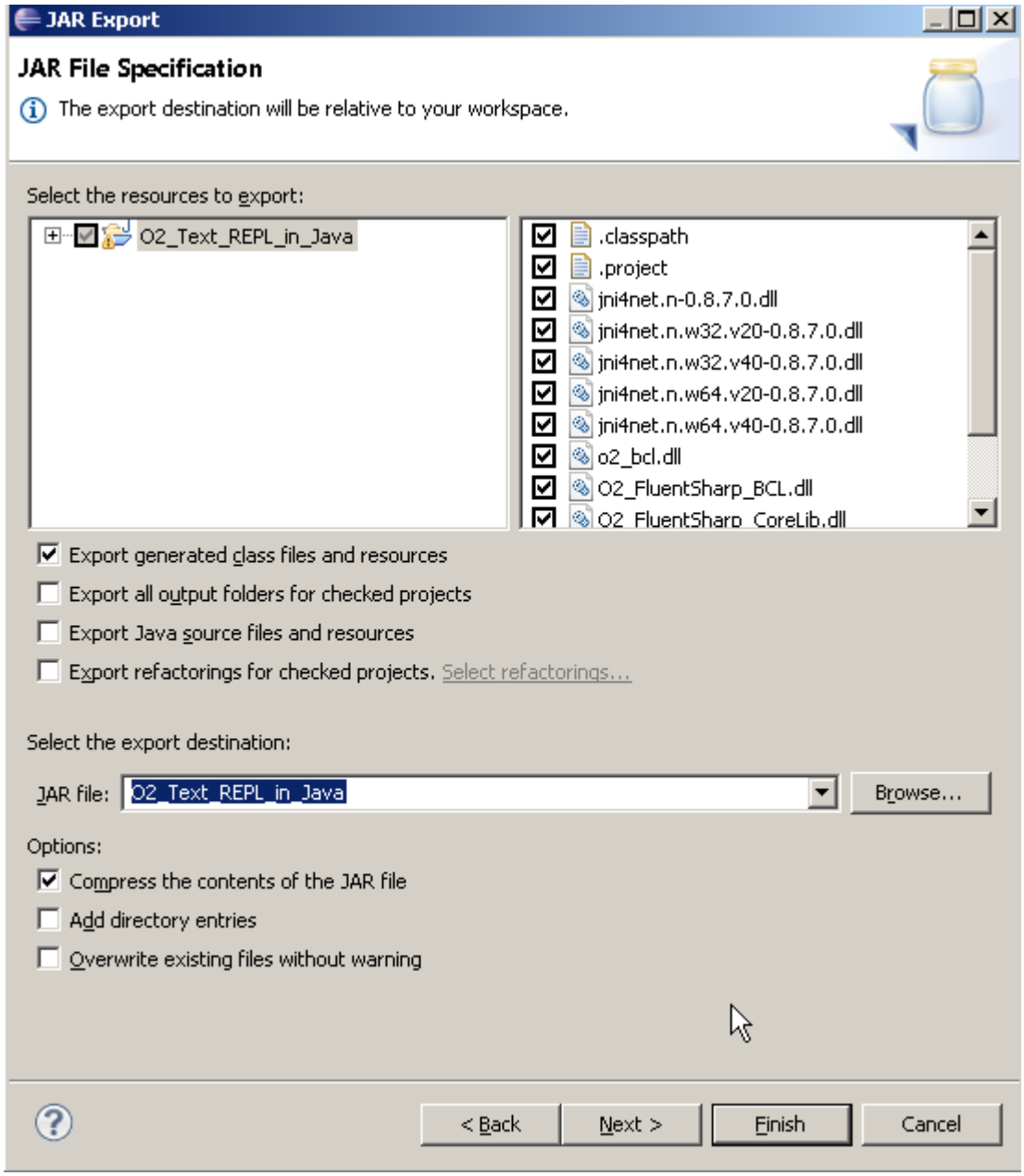
this will compile and invoke the *`scriptToCreateTextBasedRepl`* code snippet, which provides a C# REPL GUi:

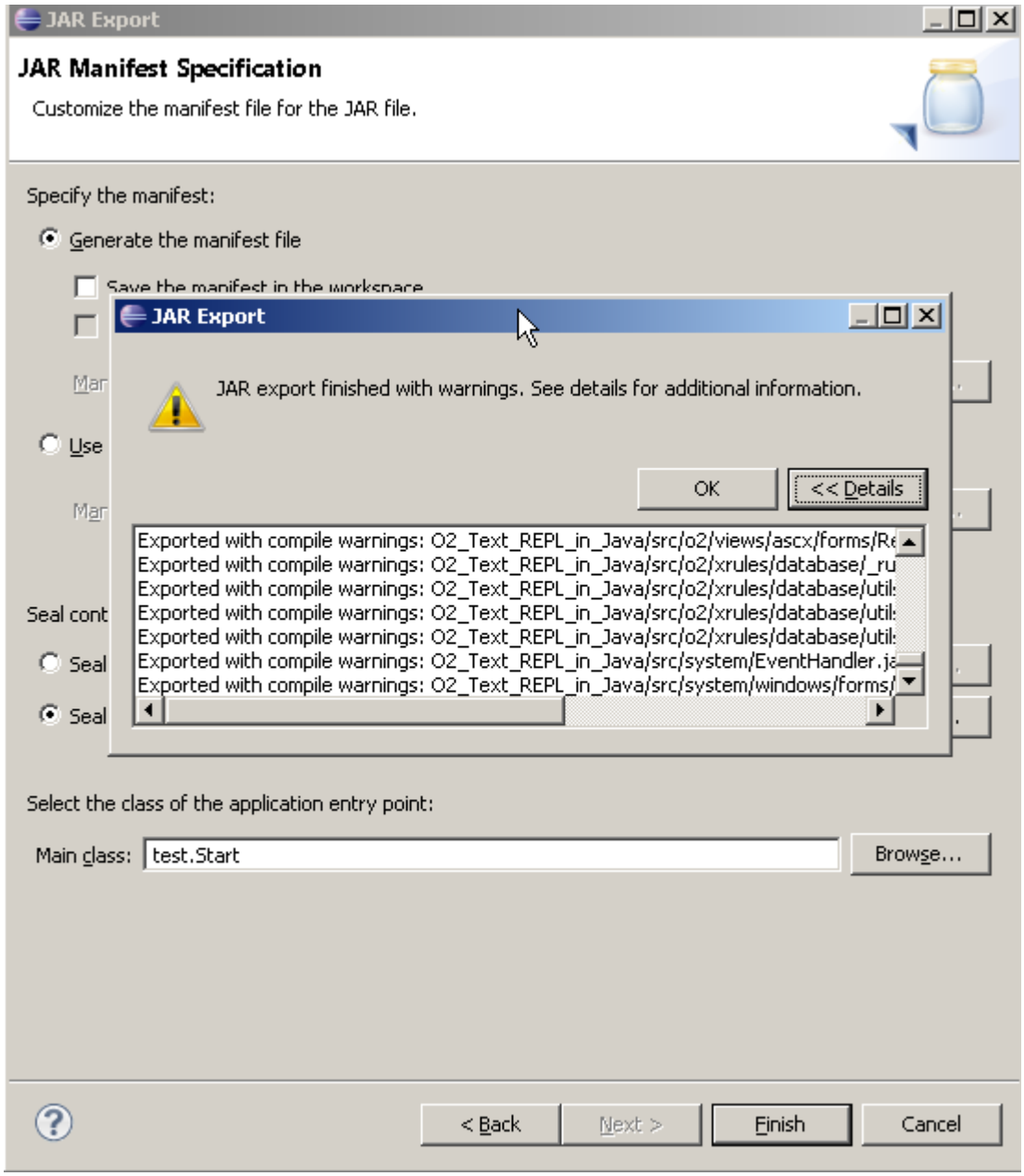


changing the name of the project

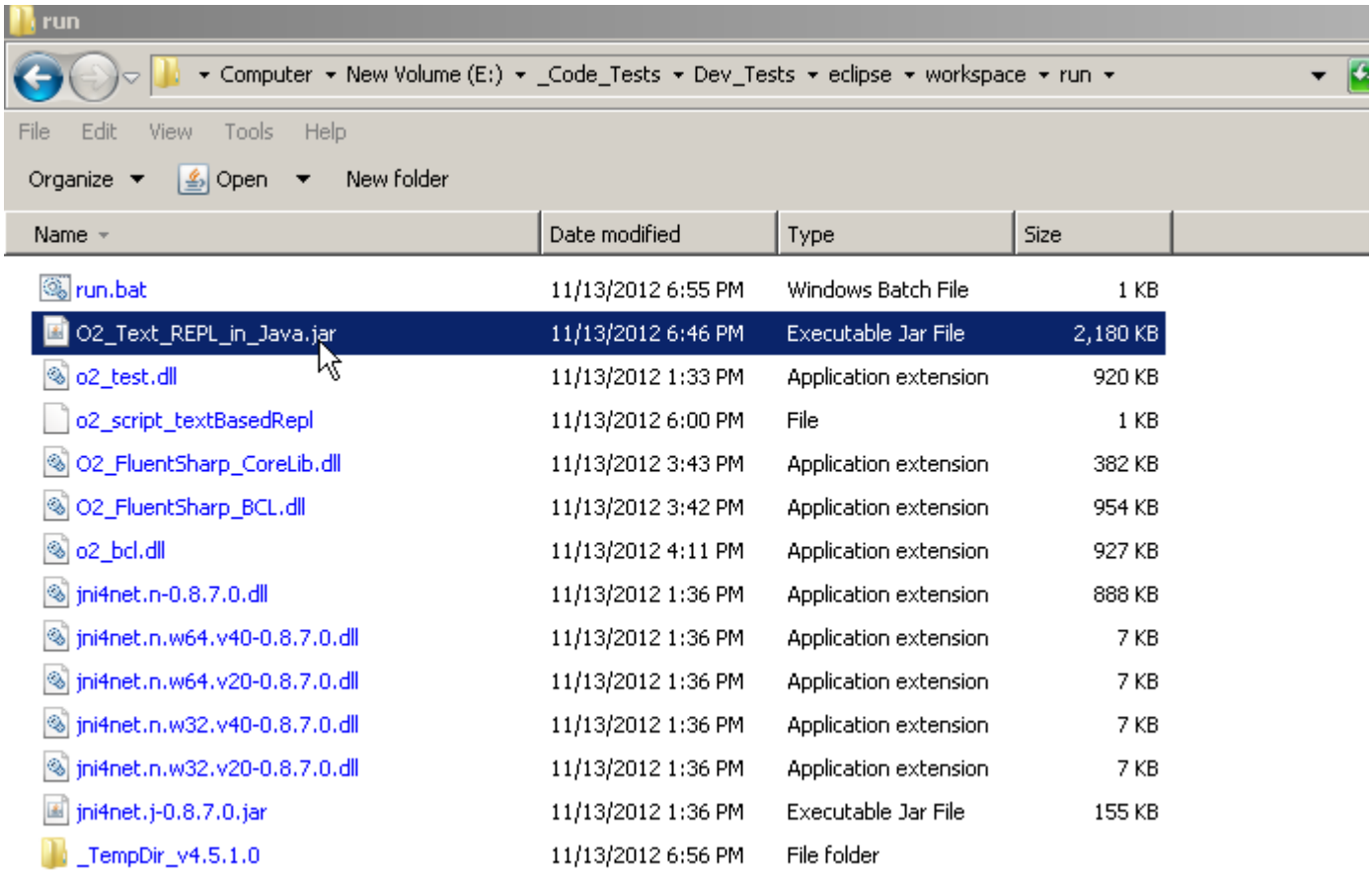


Which we will export as a Jar

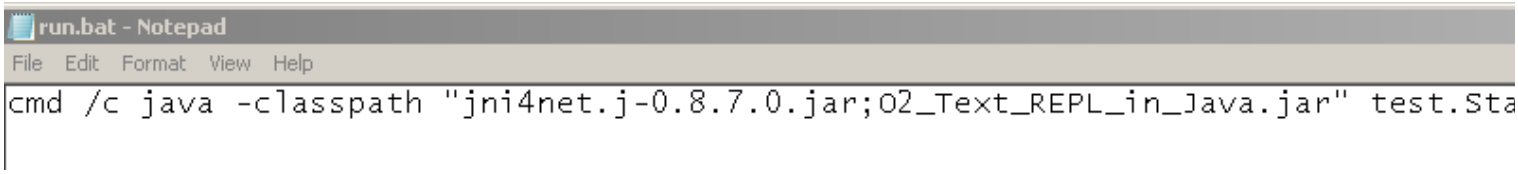

JAR Export
JAR File Specification
The export destination will be relative to your workspace.
Select the resources to export:
O2_Text_REPL_in_Java
.classpath
.project
jni4net.n-0.8.7.0.dll
jni4net.n.w32.v20-0.8.7.0.dll
jni4net.n.w32.v40-0.8.7.0.dll
jni4net.n.w64.v20-0.8.7.0.dll
jni4net.n.w64.v40-0.8.7.0.dll
o2_bcl.dll
O2_FluentSharp_BCL.dll
O2_FluentSharp_CoreLib.dll
Export generated class files and resources
Export all output folders for checked projects
Export Java source files and resources
Export refactorings for checked projects. Select refactorings...
Select the export destination:
JAR file: O2_Text_REPL_in_Java
Browse...
Options:
Compress the contents of the JAR file
Add directory entries
Overwrite existing files without warning
< Back
Next >
Finish
Cancel



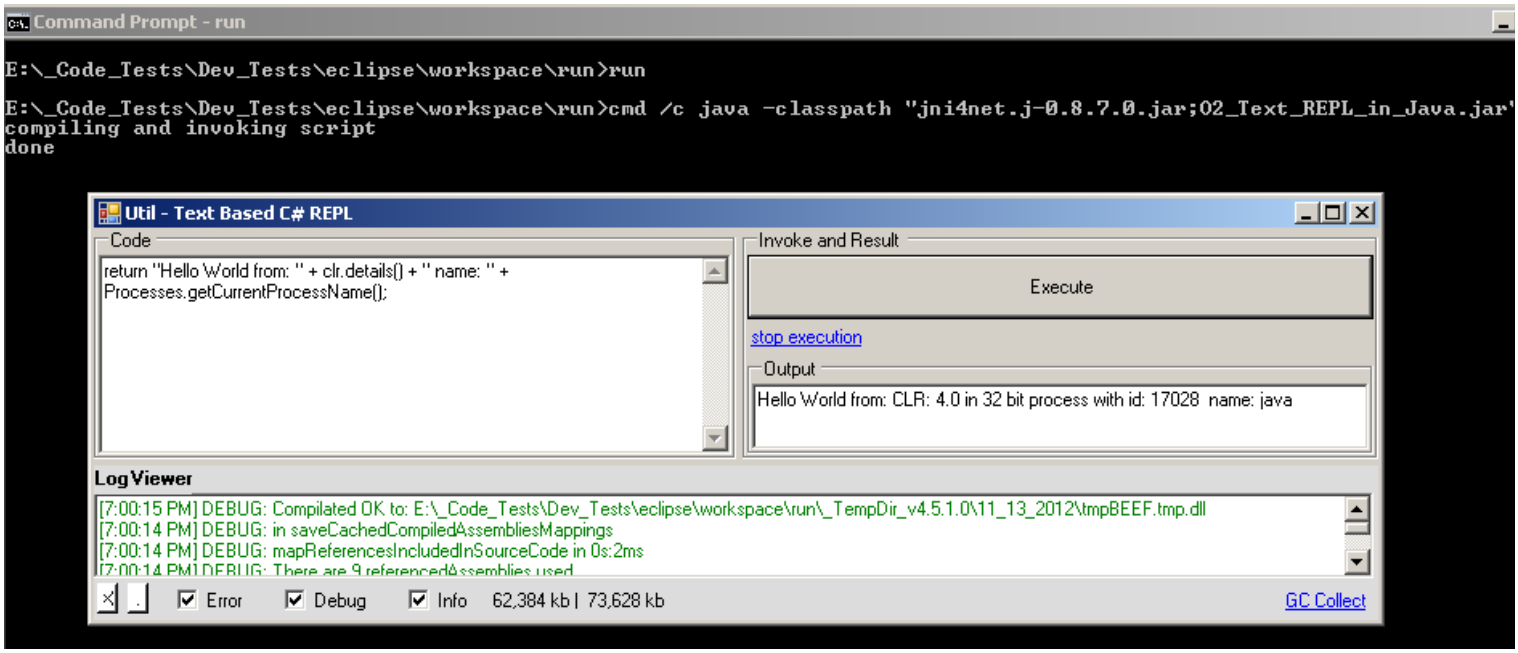
which can then be placed in a folder with the dependencies



and started using:



which will look like this :

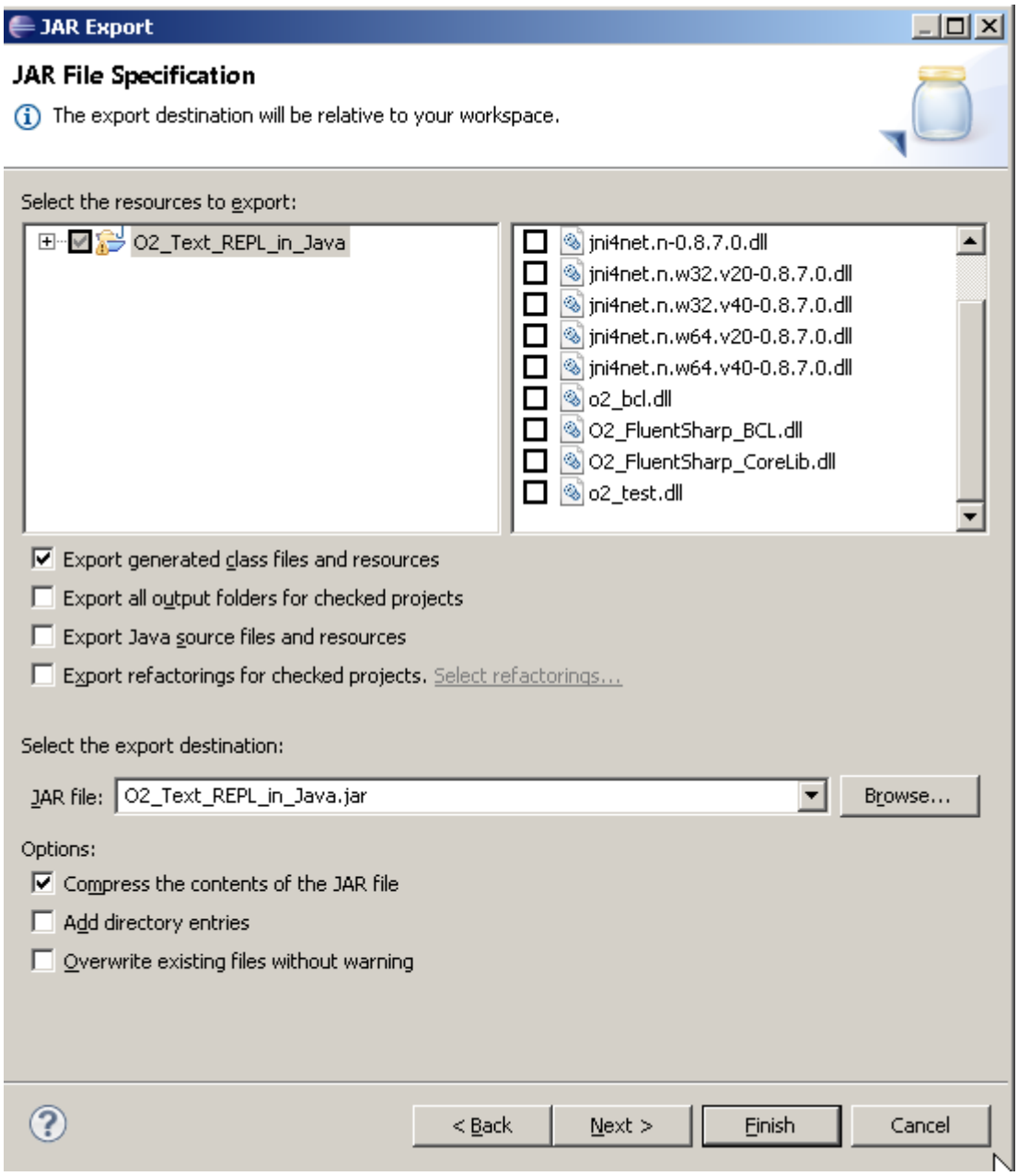


the image above is of an:

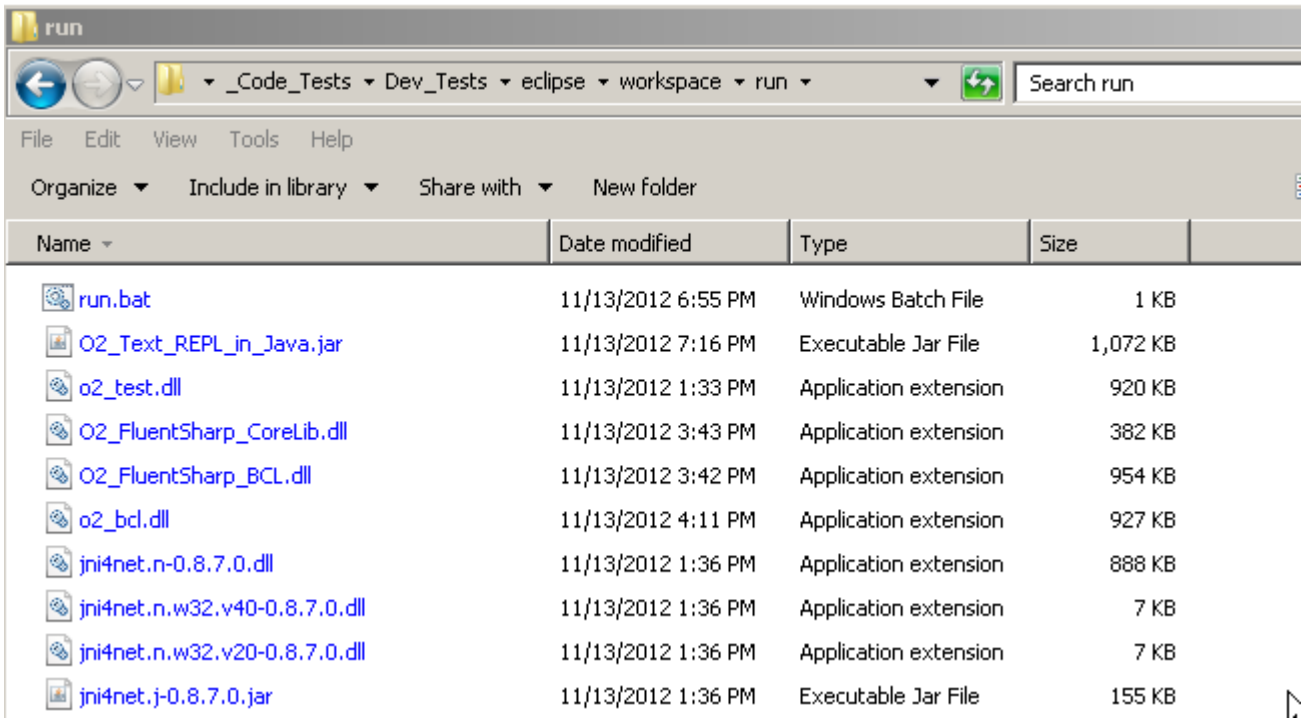
- CLR object/Form

- that existed in a dynmically compiled assembly
- that was compiled from code stored in a Java variable
- that existed in a Java class file
- that was compiled using Eclipse
- and was executed in a JVM

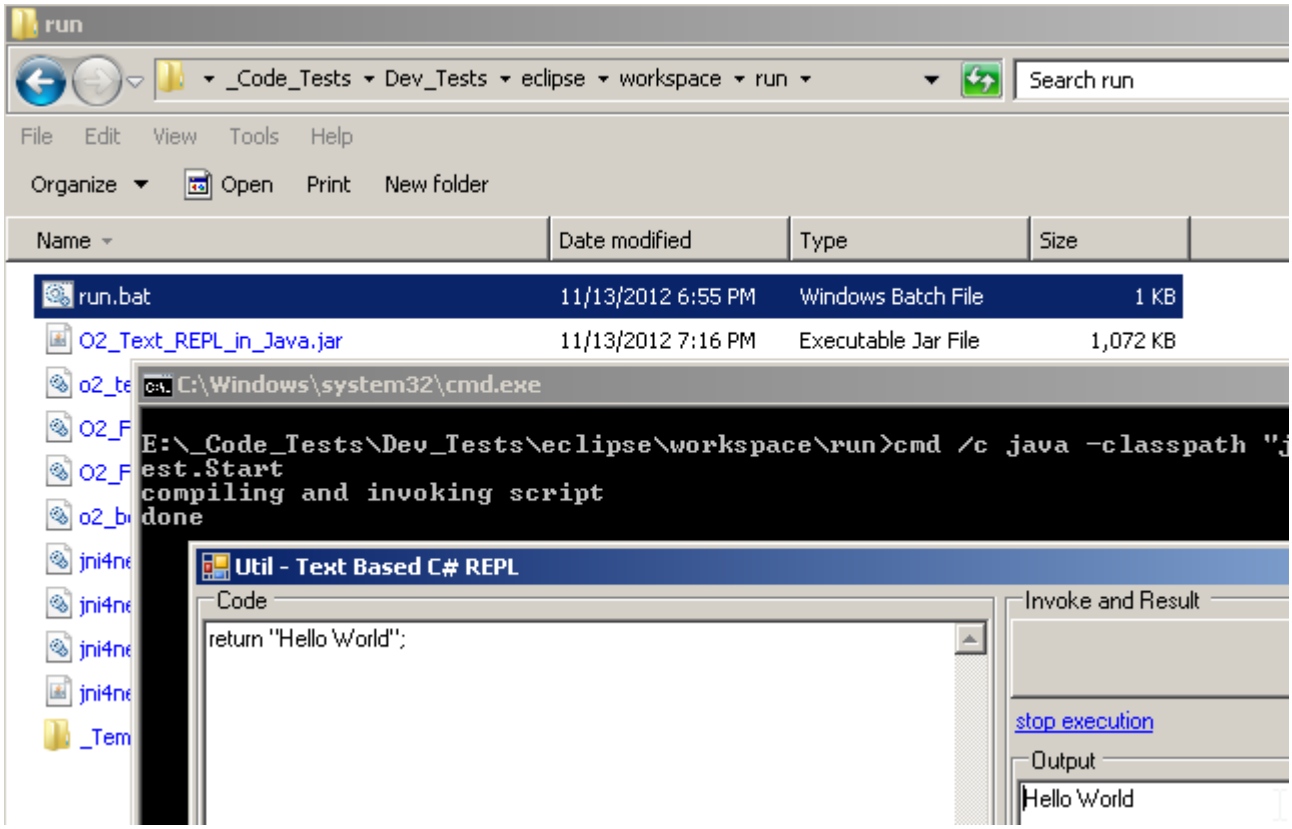
Creating a version without the dlls embeded



which makes it a bit smaller (1M vs 2Mb)



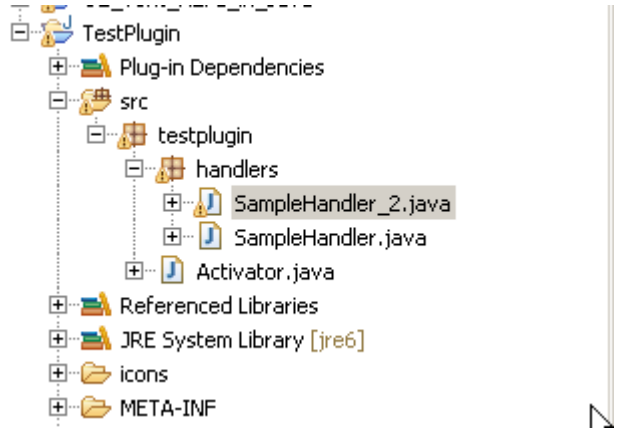
and can be executed by just double-clicking on run.bat



Creating a Plugin that invokes .NET code

The next step is to create a Eclipse Plug-in to allow the easy distribution of this new capabilities.

In Eclipse create a Plugin project:



with this code on a menu button callback:

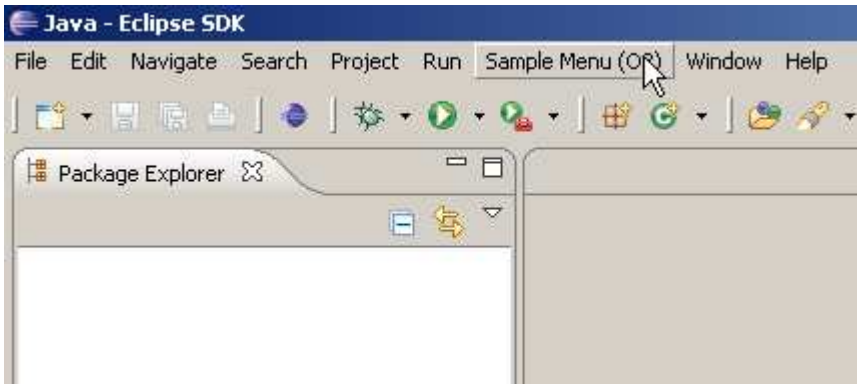
```
	public Object execute(ExecutionEvent event) throws ExecutionException
	{
		JOptionPane.showMessageDialog(null,"In version 1.3e");
		try
		{
			Bridge.init();
		}
		catch (IOException ex)
		{
			JOptionPane.showMessageDialog(null,"setupBridge failed: " + ex.getMessage());

			return null;
		}
		JOptionPane.showMessageDialog(null,"setupBridge was ok, showing form");


		System.out.println("[JVM] **SampleHandler_2    ********");
		system.Console.WriteLine("This is the CLR");

		Assembly assembly = system.reflection.Assembly.GetExecutingAssembly();
		system.Console.WriteLine(assembly.toString());

		Assembly forms = Assembly.LoadFrom("C:\\Windows\\Microsoft.NET\\Framework\\v4.0.30319
\\System.Windows.Forms.dll");
		system.Console.WriteLine(forms.toString());
		system.Type formType = forms.GetType("System.Windows.Forms.Form");
		ConstructorInfo ctor = formType.GetConstructor(new system.Type[] {} );
		system.Object form = ctor.Invoke(new system.Object[] {});
		PropertyInfo text = formType.GetProperty("Text");
		text.SetValue(form, new system.String("My Form"), new system.Object[] {});

		MethodInfo showDialog = formType.GetMethod("ShowDialog", new system.Type[] {} );
		showDialog.Invoke(form , new system.Object[] {});
```

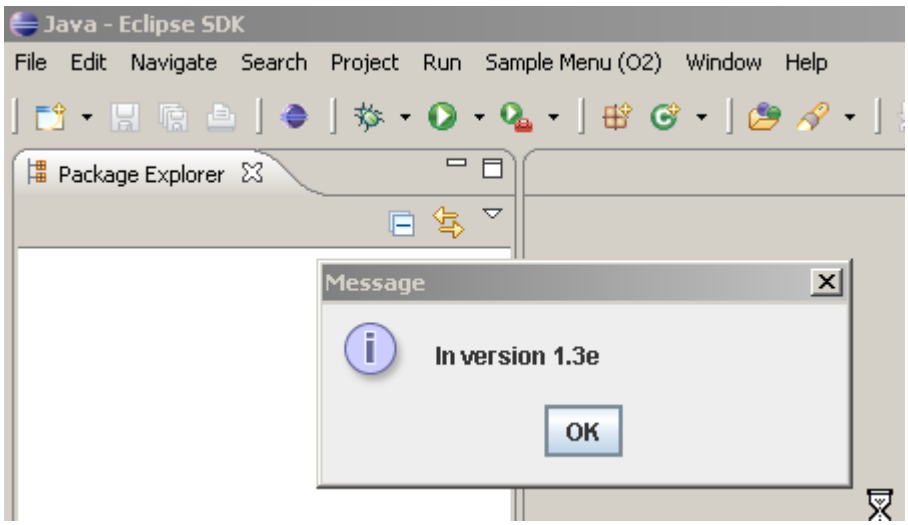
what this code is doing is:

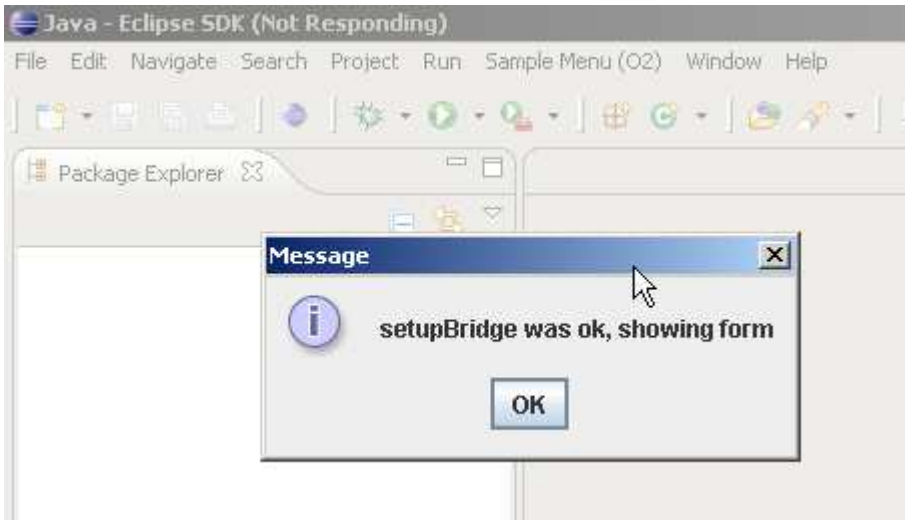
- Showing a couple status messeges using javax.swing.JOptionPane
- setting up Jni4Net bridge (ie. loading the CLR in the current process)
- writing a couple test message to the Console out
- using (the Jni4net) emded reflection calls to:
  - load System.***Windows.Forms.dll***
  - get a ***Type*** object of the ***Form*** object
  - get the contructore method of the ***Form*** object

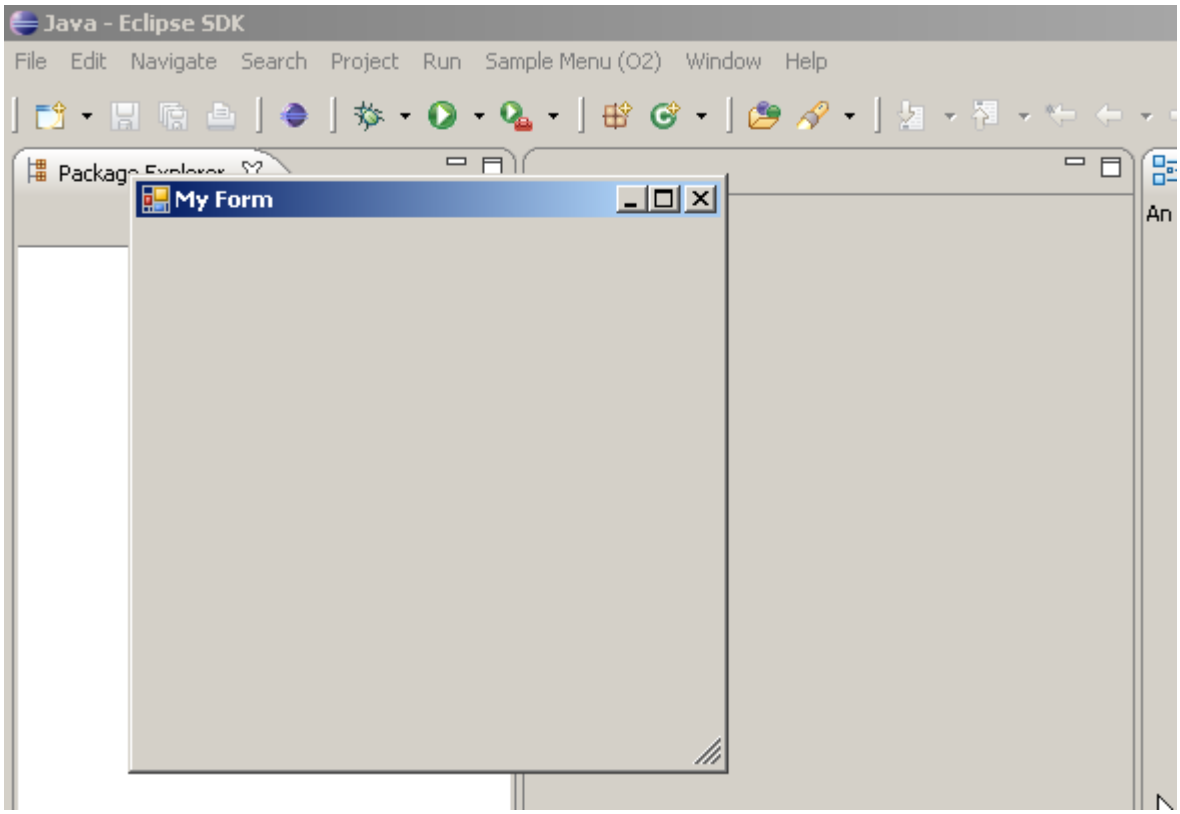
- invoke the constructor to
- get the ***Text*** property and set its value
- get the ***ShowDialog*** method and invole it

This is what this looks like when executed (in a separate Eclipse instance)









Weird error: At the moment (only when running from eclipse) the JNI connections are not working for dlls created independently (like the clientForm Jni4Net example)

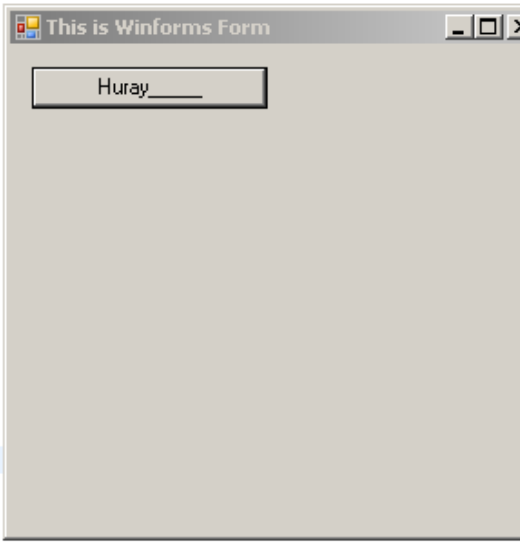
we get a ***java.lang.UnsatisfiedLinkError***, which seems to be an error that happen on Jni issues

```
*****start*****
[JVM] **SampleHandler_2 ********
This is the CLR
jni4net.n-0.8.7.0, Version=0.8.7.0, Culture=neutral, PublicKeyToken=ec6b23cda025a43a
System.Windows.Forms, Version=4.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089
Before dialog
!SESSION 2012-11-14 03:35:05.967 -----------------------------------------------
eclipse.buildId=M20110909-1335
java.version=1.7.0_06
java.vendor=Oracle Corporation
BootLoader constants: OS=win32, ARCH=x86, WS=win32, NL=en_US
Framework arguments:  -product org.eclipse.sdk.ide
Command-line arguments:  -product org.eclipse.sdk.ide -data E:\_Code_Tests\Dev_Tests\eclipse\workspace/../r

!ENTRY org.eclipse.ui 4 0 2012-11-14 03:35:58.443
!MESSAGE Unhandled event loop exception
!STACK 0
java.lang.UnsatisfiedLinkError: system.windows.forms.Form.__ctorForm0(Lnet/sf/jni4net/inj/IClrProxy;)V
        at system.windows.forms.Form.__ctorForm0(Native Method)
        at system.windows.forms.Form.<init>(Form.java:25)
        at jni4net.winforms.TestForm.<init>(TestForm.java:25)
        at jni4net.winforms.Program.main(Program.java:39)
        at testplugin.handlers.SampleHandler_2.execute(SampleHandler_2.java:92)
        at org.eclipse.ui.internal.handlers.HandlerProxy.execute(HandlerProxy.java:293)
        at org.eclipse.core.commands.Command.executeWithChecks(Command.java:476)
        at org.eclipse.core.commands.ParameterizedCommand.executeWithChecks(ParameterizedCommand.java:508)
        at org.eclipse.ui.internal.handlers.HandlerService.executeCommand(HandlerService.java:169)
```

but if we run that same code from a standard java project (i.e. not inside eclipse)

it works

```
/**
 * @author Pavel Savara (original)
 */


public class Program
{
    public static void main(String[] args) throws IOException {
        Bridge.init();



        Bridge.LoadAndRegisterAssemblyFrom(new File("winforms.dll"));

        TestForm test=new TestForm();
        test.init();
        test.Show();
        Application.Run(test);
```



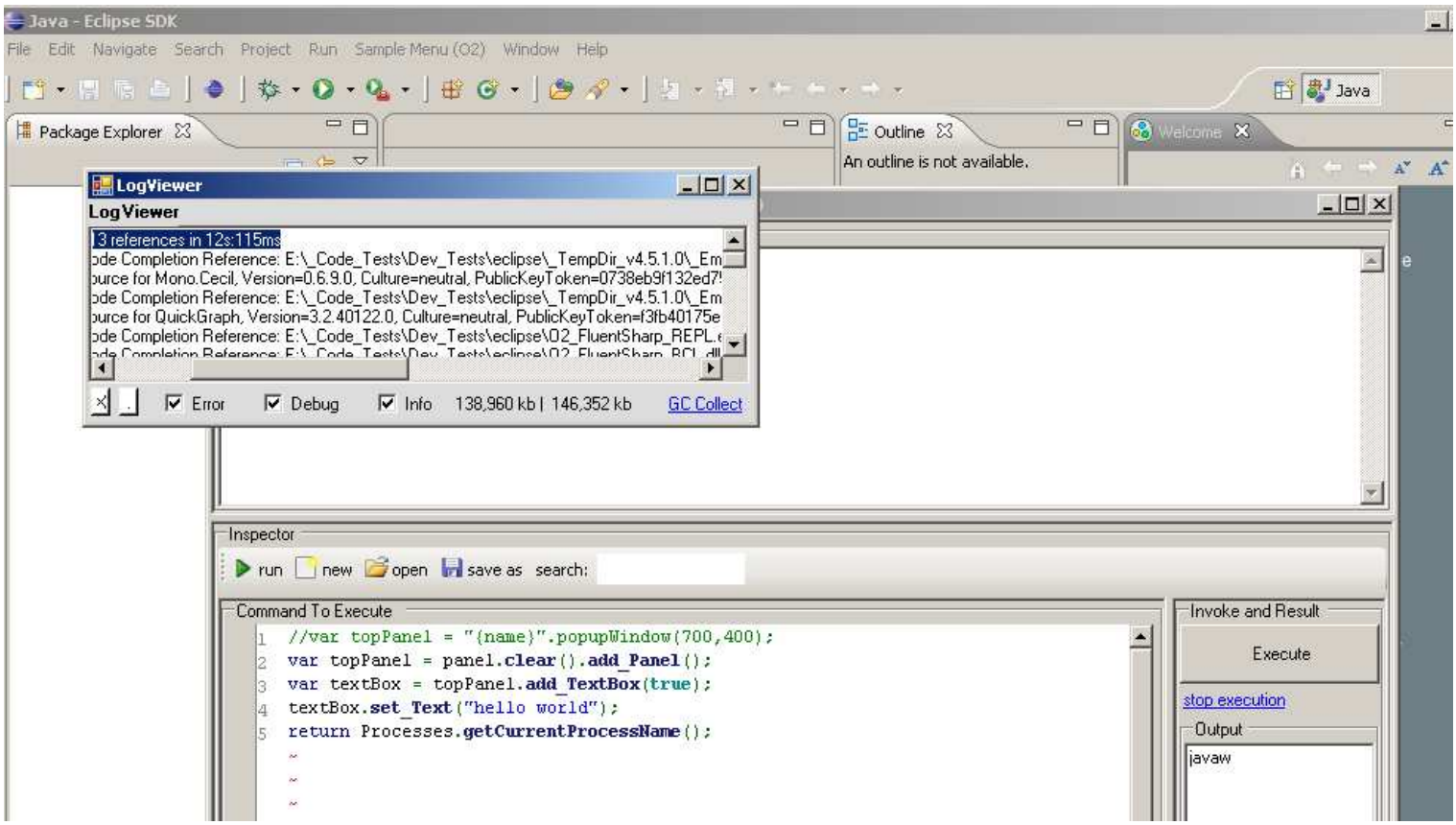
here is the code that creates that form (using the Jni4Net sample app 'clientForm')

```
public class Program
{
	public static void main(String[] args) throws IOException {
		Bridge.init();



		Bridge.LoadAndRegisterAssemblyFrom(new File("winforms.dll"));

		TestForm test=new TestForm();
		test.init();
		test.Show();
		Application.Run(test);

	}

}



public class TestForm extends Form {
	private system.windows.forms.Button button1;

	int i=0;

	public void init(){
		this.button1 = new system.windows.forms.Button();
		this.SuspendLayout();
		//
		// button1
		//
		this.button1.setLocation(new system.drawing.Point(12, 12));
		this.button1.setName("button1");
		this.button1.setSize(new system.drawing.Size(130, 23));
		this.button1.setTabIndex(0);
		this.button1.setText("Huray_____");
		this.button1.addClick(new system.EventHandler(){
			// this is implementation of .NET delegate by Java anonymous class
				public void Invoke(system.Object sender, system.EventArgs e){
					i++;
					button1.setText("Clicked " + i + "x times");
				}
			});
		//
		// TestForm
		//
		this.setAutoScaleDimensions (new system.drawing.SizeF(8F, 16F));
		this.setClientSize(new system.drawing.Size(292, 269));
		this.getControls().Add(this.button1);
		this.setName("TestForm");
		this.setText("This is Winforms Form");
		this.ResumeLayout(false);
```

```
	}
```

Although it is anoying that we can't consume the O2 dlls directly in Eclipse (with the O2 procxy methods invoked via the JVM), since we have the ability to .Net Reflection (i.e. 'load assmblies, create classes and invoke methods'), we can load up the entire O2 REPL gui (tiggered from the .Net CLR not from the JVM):

```
	public Object execute(ExecutionEvent event) throws ExecutionException
	{
		JOptionPane.showMessageDialog(null,"In version 1.3e");
		try
		{
			Bridge.init();
		}
		catch (IOException ex)
		{
			JOptionPane.showMessageDialog(null,"setupBridge failed: " + ex.getMessage());

			return null;
		}
		JOptionPane.showMessageDialog(null,"setupBridge was ok, showing form");



		String currentDirectory = Environment.getCurrentDirectory();

		Assembly coreLib = Assembly.LoadFrom(currentDirectory + "\\O2_FluentSharp_CoreLib.dll");
		JOptionPane.showMessageDialog(null,"coreLib: {0}" + coreLib.toString() + "\n" +
coreLib.getLocation());

		Assembly bcl = Assembly.LoadFrom(currentDirectory + "\\O2_FluentSharp_BCL.dll");
		JOptionPane.showMessageDialog(null,"bcl: {0}" + bcl.toString());

		Assembly repl = Assembly.LoadFrom(currentDirectory + "\\O2_FluentSharp_REPL.exe");
		JOptionPane.showMessageDialog(null,"repl: {0}" + repl.toString());
		//system.Console.WriteLine(repl.toString());

		Type open = repl.GetType("O2.Kernel.open");
		MethodInfo openLogViewer = open.GetMethod("logViewer");
		openLogViewer.Invoke(null, new system.Object[] {});

		open.GetMethod("scriptEditor", new Type[] {}).Invoke(null, new system.Object[] {});
		system.Console.WriteLine(open.GetMethod("scriptEditor", new Type[] {}).toString());
```


Java - Eclipse SDK
File Edit Navigate Search Project Run Sample Menu (O2) Window Help
Java
Package Explorer
Outline
An outline is not available.
Welcome
LogViewer
LogViewer
3 references in 12s:115ms
ode Completion Reference: E:_Code_Tests\Dev_Tests\eclipse_TempDir_v4.5.1.0_Em
ource for Mono.Cecil, Version=0.6.9.0, Culture=neutral, PublicKeyToken=0738eb9f132ed7
ode Completion Reference: E:_Code_Tests\Dev_Tests\eclipse_TempDir_v4.5.1.0_Em
ource for QuickGraph, Version=3.2.40122.0, Culture=neutral, PublicKeyToken=f3fb40175e
ode Completion Reference: E:_Code_Tests\Dev_Tests\eclipse\O2_FluentSharp_REPL.e
Error
Debug
Info
138,960 kb | 146,352 kb
GC Collect
Inspector
run
new
open
save as
search:
Command To Execute
1 //var topPanel = "{name}".popupWindow(700,400);
2 var topPanel = panel.clear().add_Panel();
3 var textBox = topPanel.add_TextBox(true);
4 textBox.set_Text("hello world");
5 return Processes.getCurrentProcessName();
Invoke and Result
Execute
stop execution
Output
javaw