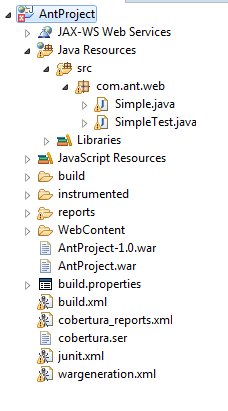
**Compile and instrument**

**Prerequisites**

1.Create simple ant build for java program

**Simple ant project**

Folder Structure



**Source**

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| --- |
| **Simple.java** |
| **Path 🡪 src/com/ant/web/Simple.java** |
| package com.ant.web;  import java.util.Collection;  import java.util.Iterator;  import org.slf4j.Logger;  import org.slf4j.LoggerFactory;  public class Simple  {  private static final Logger logger = LoggerFactory.getLogger(Simple.class);  public int square(int x)  {  if (logger.isDebugEnabled())  {  logger.debug("x: " + x) ;  }  int result = x \* x;  if (logger.isDebugEnabled())  {  logger.debug("result: " + result);  }  return result;  }  public int f(int x)  {  if (logger.isDebugEnabled())  {  logger.debug("x: " + x);  }  if (x < 0)  {  if (logger.isDebugEnabled())  {  logger.debug("negative x");  }  return square(x);  }  else if ((x >= 0) && (x <= 5))  {  if (logger.isDebugEnabled())  {  logger.debug("0<=x<=5");  }  return x + 3;  }  else  {  return 2 \* x;  }  }  public int sum(Collection c)  {  int result = 0;  for (Iterator i = c.iterator(); i.hasNext();)  {  int value = ((Number)i.next()).intValue();  if (logger.isDebugEnabled())  {  logger.debug("value: " + value);  }  result += value;  }  if (logger.isDebugEnabled())  {  logger.debug("result: " + result);  }  return result;  }  } |

|  |
| --- |
| **SimpleTest.java** |
| **Path 🡪 src/com/ant/web/ SimpleTest.java** |
| package com.ant.web;  import junit.framework.TestCase;  import java.util.Collection;  import java.util.LinkedList;  public class SimpleTest extends TestCase  {  final Simple simple = new Simple();  public SimpleTest(String nm)  {  super(nm);  }  public void testSquare()  {  assertEquals(1, simple.square(1));  assertEquals(1, simple.square(-1));  }  public void testF()  {  assertEquals(1, simple.f(-1));  assertEquals(12, simple.f(6));  }  public void testSum()  {  Collection c = new LinkedList();  c.add(new Integer(3));  c.add(new Integer(5));  c.add(new Integer(8));  assertEquals(16, simple.sum(c));  }  } |

Include build properties(path of the src. Directory and report folders) in build . properties

|  |
| --- |
| **Build.properties** |
| **Path 🡪 AntProject/ Build.properties** |
| # The source code for the examples can be found in this directory  src.dir=D:/Jenkins/security/cloned\_repo/AntProject/src  # The path to cobertura.jar  cobertura.dir=D:/Jenkins/security/cloned\_repo/AntProject/WebContent/WEB-INF/lib  # Classes generated by the javac compiler are deposited in this directory  classes.dir=D:/Jenkins/security/cloned\_repo/AntProject/build/classes  # Instrumented classes are deposited into this directory  instrumented.dir=D:/Jenkins/security/cloned\_repo/AntProject/instrumented  # All reports go into this directory  reports.dir=D:/Jenkins/security/cloned\_repo/AntProject/reports  # Unit test reports from JUnit are deposited into this directory  reports.xml.dir=${reports.dir}/junit-xml  reports.html.dir=${reports.dir}/junit-html  # Coverage reports are deposited into these directories  coverage.xml.dir=${reports.dir}/cobertura-xml  coverage.summaryxml.dir=${reports.dir}/cobertura-summary-xml  coverage.html.dir=${reports.dir}/cobertura-html |

**Build .xml-for compiling and instrumenting the code**

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| --- |
| **Build.xml** |
| **Path 🡪 AntProject/ Build.xml** |
| <?xml version="1.0" encoding="UTF-8"?>  <project name="cobertura.examples.basic" default="instrument" basedir=".">  <description>  Cobertura - http://cobertura.sourceforge.net/  Copyright (C) 2003 jcoverage ltd.  Copyright (C) 2005 Mark Doliner &lt;thekingant@users.sourceforge.net&gt;  Copyright (C) 2006 Dan Godfrey  Cobertura is licensed under the GNU General Public License  Cobertura comes with ABSOLUTELY NO WARRANTY  </description>  <property file="build.properties" />  <path id="cobertura.classpath">  <pathelement location="WebContent/WEB-INF/lib/asm-5.0.1.jar"/>  <pathelement location="WebContent/WEB-INF/lib/asm-analysis-5.0.1.jar" />  <pathelement location="WebContent/WEB-INF/lib/asm-commons-5.0.1.jar"/>  <pathelement location="WebContent/WEB-INF/lib/asm-tree-5.0.1.jar"/>  <pathelement location="WebContent/WEB-INF/lib/asm-util-5.0.1.jar"/>  <pathelement location="WebContent/WEB-INF/lib/commons-lang3-3.3.2.jar"/>  <pathelement location="WebContent/WEB-INF/lib/hamcrest-core-1.3.jar"/>  <pathelement location="WebContent/WEB-INF/lib/jaxen-1.1.4.jar"/>  <pathelement location="WebContent/WEB-INF/lib/jetty-6.1.14.jar"/>  <pathelement location="WebContent/WEB-INF/lib/jetty-util-6.1.14.jar"/>  <pathelement location="WebContent/WEB-INF/lib/ant-contrib-1.0b3.jar"/>  <pathelement location="WebContent/WEB-INF/lib/cobertura-2.1.1.jar"/>  <pathelement location="WebContent/WEB-INF/lib/junit-4.11.jar"/>  <pathelement location="WebContent/WEB-INF/lib/logback-classic-1.0.13.jar"/>  <pathelement location="WebContent/WEB-INF/lib/logback-core-1.0.13.jar"/>  <pathelement location="WebContent/WEB-INF/lib/oro-2.0.8.jar"/>  <pathelement location="WebContent/WEB-INF/lib/servlet-api-2.5-6.1.14.jar"/>  <pathelement location="WebContent/WEB-INF/lib/slf4j-api-1.7.5.jar"/>  <pathelement location="WebContent/WEB-INF/lib/spring-context-2.0.5 .jar"/>    <fileset dir="${cobertura.dir}">  <include name="cobertura\*.jar" />  <include name="lib/\*\*/\*.jar" />  </fileset>  </path>        <taskdef classpathref="cobertura.classpath" resource="tasks.properties">  <classpath refid="cobertura.classpath" />  </taskdef>  <target name="init" depends="clean">  <mkdir dir="${classes.dir}" />  <mkdir dir="${instrumented.dir}" />  <mkdir dir="${reports.xml.dir}" />  <mkdir dir="${reports.html.dir}" />  <mkdir dir="${coverage.xml.dir}" />  <mkdir dir="${coverage.summaryxml.dir}" />  <mkdir dir="${coverage.html.dir}" />  </target>          <target name="compile" depends="init">  <javac srcdir="${src.dir}" destdir="${classes.dir}" debug="yes" includeantruntime="false">  <classpath refid="cobertura.classpath" />  </javac>  </target>          <target name="instrument" depends="init,compile">  <!--  Remove the coverage data file and any old instrumentation.  -->  <!--<delete file="cobertura.ser"/>  <delete dir="${instrumented.dir}" />-->  <!--  Instrument the application classes, writing the  instrumented classes into ${build.instrumented.dir}.  -->  <cobertura-instrument todir="${instrumented.dir}" >  <!--  The following line causes instrument to ignore any  source line containing a reference to slf4j/logback, for the  purposes of coverage reporting.  -->  <!--<ignore regex="org.slf4j.\*" /> -->  <fileset dir="${classes.dir}">  <!--  Instrument all the application classes, but  don't instrument the test classes.  -->  <include name="\*\*/\*.class" />  <exclude name="\*\*/\*Test.class" />  </fileset>  </cobertura-instrument>  </target>    <target name="clean" description="Remove all files created by the build/test process.">  <delete dir="${classes.dir}" />  <delete dir="${instrumented.dir}" />  <delete dir="${reports.dir}" />  <delete file="cobertura.log" />  <delete file="cobertura.ser" />  </target>  </project> |

**Note :**

Include the required jars into lib folder

AntProject->webcontent->WEB-INF->lib

* asm-5.0.1.jar
* asm-analysis-5.0.1.jar
* asm-commons-5.0.1.jar
* asm-tree-5.0.1.jar
* asm-util-5.0.1.jar
* commons-lang3-3.3.2.jar
* hamcrest-core-1.3.jar
* jaxen-1.1.4.jar
* jetty-6.1.14.jar
* jetty-util-6.1.14.jar
* ant-contrib-1.0b3.jar
* cobertura-2.1.1.jar
* junit-4.11.jar
* logback-classic-1.0.13.jar
* logback-core-1.0.13.jar
* oro-2.0.8.jar
* servlet-api-2.5-6.1.14.jar
* slf4j-api-1.7.5.jar
* spring-context-2.0.5 .jar

->Add these jars into the classpath