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Matrikelnummer: 917983
FB 1, Studiengang Wirtschaftsinformatik (online)
4. Fachsemester SS2022

Softwaretechnik
ESA 8 BUI

BUI - Buildmanagement

github repository <https://github.com/MikeW2022/ESA008_BUI>
github ressource <https://github.com/MikeW2022/ESA008_BUI/blob/main/build0.xml>

ANT Build file
1.)
build.xml-Datei für ANT
einfache Dateistruktur (Skelett) mit echo und einfacher Dependency Struktur für 2 weitere echos

```xml
1 <project basedir="e:/Michael/Bildung/Studium/FH Beuth/Sommersemester_2022/Softwaretechnik/ESA/008_BUI/" name="ESA_BUI" default="level2" >
2     <description>
3       example ANT file for ESA BUI
4     </description>
5
6     <!-- - - - - - - - - - - - - - - - - - -
7           target: hello
8           - - - - - - - - - - - - - - - - - - -->
9     <target name="hello" description="simply hello output">
10        <echo>Hello world</echo>
11    </target>
12
13    <!-- - - - - - - - - - - - - - - - - - -
14          target: level1
15          - - - - - - - - - - - - - - - - - - - -->
16    <target name="level1" depends="hello" description="">
17          <echo>You can read the output for level1 here </echo>
18      </target>
19
20    <!-- - - - - - - - - - - - - - - - - - -
21          target: level2
22          - - - - - - - - - - - - - - - - - - - -->
23    <target name="level2" depends="level1" description="output for level2">
24          <echo>You can read the output for level2 here.</echo>
25      </target>
26 </project>
```

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Ausgabe auf der Console

```
Buildfile: C:\Users\Michael\Java\de\vfh\gp1\SWT ANT\build0.xml
hello:
      [echo] Hello world
level1:
      [echo] You can read the output for level1 here
level2:
      [echo] You can read the output for level2 here.
BUILD SUCCESSFUL
Total time: 420 milliseconds
```

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2.)
github ressource <https://github.com/MikeW2022/ESA008_BUI/blob/main/build1.xml>
build.xml-Datei für ANT
Dateistruktur (Skelett) mit echo und Dependency Struktur zum Erstellen und Löschen eines Verzeichnisses

```xml
1 <project basedir="e:/Michael/Bildung/Studium/FH Beuth/Sommersemester_2022/Softwaretechnik/ESA/008_BUI/" name="ESA_BUI" default="cleanup" >
2     <description>
3       example ANT file for ESA BUI
4     </description>
5     <!-- set global properties -->
6     <property name="build" location="build"/>
7
8     <!-- - - - - - - - - - - - - - - - - -
9           target: hello
10          - - - - - - - - - - - - - - - - - -->
11    <target name="hello" description="Simply hello output">
12        <echo>Hello world</echo>
13    </target>
14
15    <!-- - - - - - - - - - - - - - - - -
16          target: hello2
17          - - - - - - - - - - - - - - - - - -->
18    <target name="hello2" depends = "hello" description="Another yet hello output">
19          <echo>Peace on earth and a good spirit for everyone! </echo>
20      </target>
21
22    <!-- - - - - - - - - - - - - - - - -
23          target: mkdir
24          - - - - - - - - - - - - - - - - - - -->
25    <target name="mkdir" depends = "hello2" description="make a directory">
26        <echo>Create a directory in "${dir}/lib</echo>
27        <!-- Create the desired target directory -->
28        <mkdir dir="${build}/lib"/>
29    </target>
30
31    <!-- ================================
32          target: cleanup
33          ================================ -->
34    <target name="cleanup" depends = "mkdir" description="clean up">
35        <echo>The created directory "${dir}/lib" will be deleted again.</echo>
36        <!-- Delete the desired target directory -->
37        <delete dir = "${build}/lib"/>
38    </target>
39 </project>
```

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Ausgabe auf der Console

```
Buildfile: C:\Users\Michael\Java\de\vfh\gp1\SWT_ANT\build1.xml
hello:
     [echo] Hello world
hello2:
     [echo] Peace on earth and a good spirit for everyone!
mkdir:
     [echo] Create a directory in "${dir}/lib
cleanup:
     [echo] The created directory "${dir}/lib" will be deleted again.
   [delete] Deleting directory e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\build\lib
BUILD SUCCESSFUL
Total time: 505 milliseconds
```

3.)
github ressource <https://github.com/MikeW2022/ESA008_BUI/blob/main/build2.xml>
build.xml-Datei für ANT
Dateistruktur (Skelett) mit den targets „get", „javadoc", „exec", „mkdir", „buildDir", „compile", „jar", „junit", „junitreport", „cleanup"

```xml
 1  <?xml version="1.0" encoding="ISO-8859-1"?>
 2  <project basedir="e:/Michael/Bildung/Studium/FH Beuth/Sommersemester_2022/Softwaretechnik/ESA/008_BUI/" name="ESA_BUI" default="control" >
 3      <description>
 4        example ANT file for ESA BUI
 5      </description>
 6      <!-- set global properties -->
 7      <property name="projectName" value="SWT_ESA_BUI" />
 8      <property name="author" value="Michael Wischniewski" />
 9      <property name="authors-e-mail" value="s76826@bht-berlin.de" />
10      <property name="creationDate"  value="06092022" />
11      <property name="testDir" value="test"/>
12      <property name="os" value="Microsoft Windows 10.0.19044.1706"/>
13      <property name="buildDir" location="build" />
14      <property name="srcDir" location="src/refactoring" />
15      <property name="docDir" location="doc" />
16      <property name="jarDir" location="${buildDir}/lib"/>
17      <property name="junitDir" location="${testDir}/junit/xml" />
18      <property name="reportDir" location="${testDir}/junit/html" />
19      <property name="urlDir" location="github" />
20      <property name="antTest.libDir" location="C:/Users/Michael/apache_ant/lib" />
21      <property name="antReportDir" location="test/junit/report" />
22      <property name="browser" location="C:/Program Files (x86)/Microsoft/Edge/Application/msedge.exe"  />
23
24      <!-- - - - - - - - - - - - - - - - - -
25          target: welcome
26          - - - - - - - - - - - - - - - - - -->
27      <target name="welcome" description="Welcome message">
28          <echo>Hello, This build file compiles java source code into bin, compresses it and executes it.</echo>
29      </target>
30
31      <!-- ================================
32              target: cleanup
33              ================================ -->
34      <target name="cleanup" description="clean up">
35          <echo>Deletes all files that are not longer needed.</echo>
36          <delete dir = "${buildDir}"/>
37          <delete dir = "${testDir}"/>
38          <delete dir = "${urlDir}"/>
39      </target>
40
```

```xml
41  <!-- - - - - - - - - - - - - - - - - - -
42        target: get
43        - - - - - - - - - - - - - - - - - - -->
44  <target name="get" description="Gets files from URL ">
45      <delete dir = "${urlDir}"/>
46      <mkdir dir="${urlDir}"/>
47      <get src="https://github.com/MikeW2022/SWT_2022/files/8647145/MichaelWischniewski.pdf"
48          dest = "${urlDir}"
49          verbose="true"
50          usetimestamp="true" />
51  </target>
52
53  <!-- - - - - - - - - - - - - - - - - -
54        target: javadoc
55        - - - - - - - - - - - - - - - - - -->
56  <target name="javadoc" depends = "get" description="Generates code documentation using the javadoc tool.">
57      <delete dir = "${docDir}"/>
58      <mkdir dir = "${docDir}"/>
59      <javadoc author="true" verbose="false" windowtitle="JavaDoc" version="true" destdir="${docDir}" >
60          <fileset dir="${srcDir}" >
61              <exclude name = "Country.java" />
62              <exclude name = "Dozent.java" />
63              <exclude name = "Student.java" />
64              <exclude name = "MainProg.java" />
65          </fileset>
66      </javadoc>
67  </target>
68
69  <!-- - - - - - - - - - - - - - - - - -
70        target: exec
71        - - - - - - - - - - - - - - - - - -->
72  <target name="exec" depends="javadoc" description="Opens downloade file" >
73      <echo> "Opens the downloaded file in a browser." </echo>
74      <exec executable="${browser}" timeout="10000" os="${os}" >
75          <arg value="${urlDir}/MichaelWischniewski.pdf" />
76          <arg value="${docDir}/refactoring/Person.html" />
77      </exec>
78  </target>
79
80  <!-- - - - - - - - - - - - - - - - - -
81        target: buildDir
82        - - - - - - - - - - - - - - - - - -->
83  <target name="buildDir" depends = "exec" description="Create a directory for Java binaries">
84      <echo>Create the build directory structure in "${buildDir} used by target "compile" </echo>
85      <delete dir="${buildDir}"/>
86      <!-- Create the build directory structure in "${builddir} used by target "compile" -->
87      <mkdir dir="${buildDir}"/>
88  </target>
```

```xml
 89
 90    <!-- - - - - - - - - - - - - - - - - -
 91        target: javac
 92        - - - - - - - - - - - - - - - - - -->
 93    <target name="javac" depends="buildDir"  description="Compiles the source">
 94        <!-- Compile java code from ${srcDir} into ${buildDir} -->
 95            <javac srcDir = "${srcDir}"  destdir = "${buildDir}" includeantruntime="yes" />
 96        </target>
 97
 98    <!-- - - - - - - - - - - - - - - - - -
 99        target: jar
100        - - - - - - - - - - - - - - - - - -->
101    <target name="jar" depends="javac" description="Compresses the Java binaries into a jar file">
102        <!-- create a timestamp -->
103        <tstamp />
104        <!-- Compresses the Java binaries into a jar in "${jarDir} used by target "compile" -->
105        <jar jarfile="${jarDir}/${DSTAMP}/${DSTAMP}${TSTAMP}-${projectName}.jar" basedir="${buildDir}"/>
106    </target>
107
108    <!-- - - - - - - - - - - - - - - - - -
109        target: junit
110        - - - - - - - - - - - - - - - - - -->
111    <target name="junit" depends="jar" description="Unit tests for the java project files" >
112        <mkdir  dir="${junitDir}"/>
113        <junit printsummary="yes" timeout="30000" haltonfailure="no" fork="yes" >
114            <modulepath>
115                <pathelement path="${antTest.libDir}/junit-4.13.1.jar"/>
116            </modulepath>
117            <test name="testcases.SimpleTestClassTest"
118                haltonfailure="no" todir="${junitDir}" outfile="junitTest">
119                <formatter type="xml" />
120            </test>
121        </junit>
122    </target>
```

```xml
124    <!-- - - - - - - - - - - - - - - - - - -
125          target: junitreport
126          - - - - - - - - - - - - - - - - - -->
127    <target name="junitreport" depends="junit" description="Creates a report for the rest result">
128        <mkdir dir="${reportDir}"/>
129        <junitreport todir="${reportDir}">
130            <fileset dir="${junitDir}">
131                <include name="*.xml"/>
132            </fileset>
133            <report format="frames" todir="${reportDir}"/>
134        </junitreport>
135    </target>
136
137    <!-- - - - - - - - - - - - - - - - - - -
138          target: control
139          - - - - - - - - - - - - - - - - - -->
140    <target name="control" depends="welcome, cleanup, junitreport"
141        description="Runs unit tests, creates jar files, compiles java files, creates Javadocs, gets files from a web ressource,
142        and opens these in a web browser" >
143        <echo message="Control target for the excution of the targets &quot;welcome&quot;, &quot;cleanup&quot;, and &quot;junitreport&quot;" />
144    </target>
145
146
147 </project>
148
```

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```
Ausgabe auf der Console
```

```
Buildfile: C:\Users\Michael\Java\de\vfh\gp1\SWT_ANT\build2.xml
welcome:
     [echo] Hello, This build file compiles java source code into bin, compresses it and executes it.
cleanup:
     [echo] Deletes all files that are not longer needed.
   [delete] Deleting directory e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\build
   [delete] Deleting directory e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\test
   [delete] Deleting directory e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\github
get:
    [mkdir] Created dir: e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\github
      [get] Getting: https://github.com/MikeW2022/SWT_2022/files/8647145/MichaelWischniewski.pdf
      [get] To: e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\github\MichaelWischniewski.pdf
      [get] https://github.com/MikeW2022/SWT_2022/files/8647145/MichaelWischniewski.pdf moved to https://objects.githubusercontent.com/github-production-repository-file
      [get] ....................................................
      [get] ................
      [get] last modified = Sun May 08 16:23:17 CEST 2022
javadoc:
   [delete] Deleting directory e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\doc
    [mkdir] Created dir: e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\doc
  [javadoc] Generating Javadoc
  [javadoc] Javadoc execution
  [javadoc] Loading source file e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\src\refactoring\Person.java...
  [javadoc] Constructing Javadoc information...
  [javadoc] Building index for all the packages and classes...
  [javadoc] Standard Doclet version 17.0.3+7
  [javadoc] Building tree for all the packages and classes...
  [javadoc] Generating e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\doc\refactoring\Person.html...
  [javadoc] Generating e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\doc\refactoring\package-summary.html...
  [javadoc] Generating e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\doc\refactoring\package-tree.html...
  [javadoc] Generating e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\doc\overview-tree.html...
  [javadoc] Building index for all classes...
  [javadoc] Generating e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\doc\allclasses-index.html...
  [javadoc] Generating e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\doc\allpackages-index.html...
  [javadoc] Generating e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\doc\index-all.html...
  [javadoc] Generating e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\doc\index.html...
  [javadoc] Generating e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\doc\help-doc.html...
exec:
     [echo]  "Opens the downloaded file in a browser."
buildDir:
     [echo] Create the build directory structure in "e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\build used by target "compile"
    [mkdir] Created dir: e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\build
javac:
    [javac] Compiling 5 source files to e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\build
jar:
      [jar] Building jar: e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\build\lib\20220612\202206121531-SWT_ESA_BUI.jar
```

```
junit:
    [mkdir] Created dir: e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\test\junit\xml
    [junit] Fehler: Hauptklasse org.apache.tools.ant.taskdefs.optional.junit.JUnitTestRunner konnte nicht gefunden oder geladen werden
    [junit] Ursache: java.lang.NoClassDefFoundError: junit/framework/TestListener
    [junit] Running testcases.SimpleTestClassTest
    [junit] Tests run: 1, Failures: 0, Errors: 1, Skipped: 0, Time elapsed: 0 sec
    [junit] Test testcases.SimpleTestClassTest FAILED (crashed)
junitreport:
    [mkdir] Created dir: e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\test\junit\html
[junitreport] Processing e:\Michael\Bildung\Studium\FH Beuth\Sommersemester_2022\Softwaretechnik\ESA\008_BUI\test\junit\html\TESTS-TestSu
[junitreport] Loading stylesheet jar:file:/C:/Users/Michael/.p2/pool/plugins/org.apache.ant_1.10.12.v20211102-1452/lib/ant-junit.jar!/org
[junitreport] Transform time: 561ms
[junitreport] Deleting: C:\Users\Michael\AppData\Local\Temp\null1007671238
control:
    [echo] Control target for the excution of the targets "welcome", "cleanup", and "junitreport"
BUILD SUCCESSFUL
Total time: 7 seconds
```
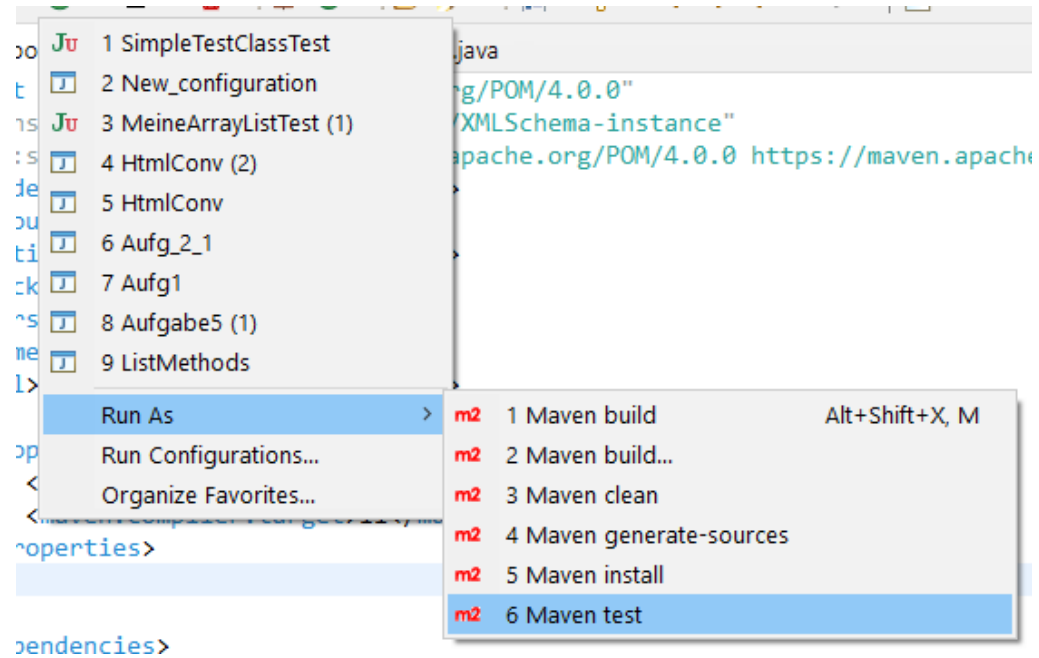
Maven

Github ressource <https://github.com/MikeW2022/ESA008_BUI/blob/main/pom.xml>

```xml
 1  <?xml version="1.0" encoding="UTF-8"?>
 2  <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 https://maven.apache.org/xsd/maven-4.0.0.xsd">
 3      <modelVersion>4.0.0</modelVersion>
 4      <groupId>swt_maven</groupId>
 5      <artifactId>swt_maven</artifactId>
 6      <packaging>jar</packaging>
 7      <version>1.0-SNAPSHOT</version>
 8      <name>swt-maven</name>
 9      <url>http://maven.apache.org</url>
10
11      <properties>
12          <maven.compiler.source>1.7</maven.compiler.source>
13          <maven.compiler.target>1.7</maven.compiler.target>
14      </properties>
15
16
17      <dependencies>
18          <dependency>
19                  <groupId>junit</groupId>
20                  <artifactId>junit</artifactId>
21                  <version>[4.13.1,)</version>
22                  <scope>test</scope>
23          </dependency>
24      </dependencies>
25
26  <build>
27      <pluginManagement>
28          <plugins>
29              <plugin>
30                  <artifactId>maven-clean-plugin</artifactId>
31                  <version>3.1.0</version>
32                  <executions>
33                      <execution>
34                          <id>cleanup</id>
35                          <phase>initialize</phase>
36                          <goals>
37                              <goal>clean</goal>
38                          </goals>
39                      </execution>
40                  </executions>
41              </plugin>
42              <plugin>
43                  <artifactId>maven-resources-plugin</artifactId>
44                  <version>3.0.2</version>
45              </plugin>
```

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```xml
46      <plugin>
47        <artifactId>maven-compiler-plugin</artifactId>
48        <version>3.8.0</version>
49      </plugin>
50      <plugin>
51        <artifactId>maven-jar-plugin</artifactId>
52        <version>3.0.2</version>
53        <executions>
54          <execution>
55            <id>default-jar</id>
56            <phase>package</phase>
57            <goals>
58              <goal>jar</goal>
59            </goals>
60          </execution>
61        </executions>
62      </plugin>
63    </plugins>
64   </pluginManagement>
65  </build>
66
67 </project>
68
```

Ausgabe auf der Console

```
[INFO] Scanning for projects...
[INFO]
[INFO] ----------------------< swt_maven:swt_maven >------------------------
[INFO] Building swt-maven 1.0-SNAPSHOT
[INFO] --------------------------------[ jar ]---------------------------------
[INFO]
[INFO] --- maven-clean-plugin:3.1.0:clean (cleanup) @ swt_maven ---
[INFO] Deleting C:\Users\Michael\Java\de\vfh\gp1\swt_maven\target
[INFO]
[INFO] --- maven-resources-plugin:3.0.2:resources (default-resources) @ swt_maven ---
[WARNING] Using platform encoding (Cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] Copying 0 resource
[INFO]
[INFO] --- maven-compiler-plugin:3.8.0:compile (default-compile) @ swt_maven ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-resources-plugin:3.0.2:testResources (default-testResources) @ swt_maven ---
[WARNING] Using platform encoding (Cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] Copying 0 resource
[INFO]
[INFO] --- maven-compiler-plugin:3.8.0:testCompile (default-testCompile) @ swt_maven ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding Cp1252, i.e. build is platform dependent!
[INFO] Compiling 3 source files to C:\Users\Michael\Java\de\vfh\gp1\swt_maven\target\test-classes
[INFO] -------------------------------------------------------------
[ERROR] COMPILATION ERROR :
[INFO] -------------------------------------------------------------
[ERROR] /C:/Users/Michael/Java/de/vfh/gp1/swt_maven/src/test/java/swt_maven/TestTest.java:[2,36] package org.junit.jupiter.api does not exist
[ERROR] /C:/Users/Michael/Java/de/vfh/gp1/swt_maven/src/test/java/swt_maven/TestTest.java:[4,29] package org.junit.jupiter.api does not exist
[ERROR] /C:/Users/Michael/Java/de/vfh/gp1/swt_maven/src/test/java/swt_maven/TestTest.java:[14,6] incompatible types: swt_maven.Test cannot be converted to java.lang.annotation.Annotation
[ERROR] /C:/Users/Michael/Java/de/vfh/gp1/swt_maven/src/test/java/swt_maven/TestTest.java:[16,9] cannot find symbol
  symbol:   method assertEquals(int,int,java.lang.String)
  location: class swt_maven.TestTest
[INFO] 4 errors
[INFO] -------------------------------------------------------------
```