```
 1  1. Maven Project 생성하기
 2    1)In Package Explorer > New > Project > Maven > Maven Project
 3
 4    2)In New Maven project, Select project name and location
 5      -Check [Create a simple project (skip archetype selection)]
 6      -Next
 7
 8    3)In New Maven project, Configure project
 9      -Group Id : MyDemo
10      -Artifact Id : MyDemo
11      -Finish
12
13
14  2. Class 생성하기
15    1)src/main/java > New > Class
16    2)Name : MyApp
17    3)Finish
18    4)내용 모두 지우기
19    5)아래의 코드를 새로 넣는다.
20
21      import org.slf4j.Logger;
22      import org.slf4j.LoggerFactory;
23
24      public class MyApp {
25        static Logger logger = LoggerFactory.getLogger("MyApp.class");
26
27        public static void main(String[] args) {
28          logger.info("Hello, World. ");
29
30          int result = sum(2, 2);
31          System.err.println("2 + 2 is " + result);
32        }
33
34        public static int sum(int a, int b) {
35          return a + b;
36        }
37      }
38
39
40  3. slf4j-api.jar
41    1)In mvnrepository.com,
42      -slf4j 검색
43      -SLF4J API Module
44      -아래 copy
45
46      <dependency>
47        <groupId>org.slf4j</groupId>
48        <artifactId>slf4j-api</artifactId>
49        <version>1.7.30</version>
50      </dependency>
51
52    2)pom.xml
53      <project xmlns="http://maven.apache.org/POM/4.0.0"
54        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
55        xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
```

          https://maven.apache.org/xsd/maven-4.0.0.xsd">
56   <modelVersion>4.0.0</modelVersion>
57   <groupId>MyDemo</groupId>
58   <artifactId>MyDemo</artifactId>
59   <version>0.0.1-SNAPSHOT</version>
60   <dependencies>
61   <dependency>
62   <groupId>org.slf4j</groupId>
63   <artifactId>slf4j-api</artifactId>
64   <version>1.7.30</version>
65   </dependency>
66   </dependencies>
67   </project>
68
69   3)pom.xml > right-click > Run As > Maven install
70   [INFO] BUILD SUCCESS
71
72   4)MyApp > right-click > Java Application
73   SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
74   SLF4J: Defaulting to no-operation (NOP) logger implementation
75   SLF4J: See http://www.slf4j.org/codes.html#StaticLoggerBinder for further details.
76   2 + 2 is 4
77
78   5)현재 SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".이다.
79   6)In mvnrepository.com,
80   -slf4j 검색
81   -SLF4J NOP Binding
82
83   <dependency>
84   <groupId>org.slf4j</groupId>
85   <artifactId>slf4j-nop</artifactId>
86   <version>1.7.30</version>
87   <scope>test</scope>
88   </dependency>
89
90   -pom.xml에 붙여넣기
91
92   7)pom.xml > right-click > Run As > Maven install
93   [INFO] BUILD SUCCESS
94
95   8)MyApp > right-click > Java Application
96   2 + 2 is 4
97
98   9)만일 여전히 위의 결과가 다른 즉, 처음 결과와 같게 나오면 Project Buildpath에서 직접
      slf4j-api.1.7.30.jar와 slf4j-nop-1.7.30.jar을 추가한다.
99
100
101   4. logback
102   1)pom.xml에서 아래 dependency 삭제
103   <dependency>
104   <groupId>org.slf4j</groupId>
105   <artifactId>slf4j-nop</artifactId>
106   <version>1.7.30</version>
107   <scope>test</scope>
108   </dependency>

```
109
110     2)또는 Buildpath에서 slf4j-nop-1.7.30.jar 삭제
111
112     3)In mvnrepository.com,
113       -logback 검색
114       -Logback Core Module
115
116       <!-- https://mvnrepository.com/artifact/ch.qos.logback/logback-core -->
117       <dependency>
118         <groupId>ch.qos.logback</groupId>
119         <artifactId>logback-core</artifactId>
120         <version>1.2.3</version>
121       </dependency>
122
123     4)In mvnrepository.com,
124       -logback 검색
125       -Logback Classic Module
126
127       <!-- https://mvnrepository.com/artifact/ch.qos.logback/logback-classic -->
128       <dependency>
129         <groupId>ch.qos.logback</groupId>
130         <artifactId>logback-classic</artifactId>
131         <version>1.2.3</version>
132         <scope>test</scope>
133       </dependency>
134
135     5)pom.xml에 붙여넣고 > right-click > Run As > Maven install
136       [INFO] BUILD SUCCESS
137
138     6)Buildpath에서 logback-core-1.2.3.jar, logback-classic-1.2.3.jar 추가
139
140     7)MyApp > right-click > Java Application
141       18:01:18.585 [main] INFO MyApp.class - Hello, World.
142       2 + 2 is 4
143
144  5. SLF4J LOG4J 12 Binding
145     1)In mvnrepository.com,
146       -slf4j 검색
147       -SLF4J LOG4J 12 Binding
148
149       <!-- https://mvnrepository.com/artifact/org.slf4j/slf4j-log4j12 -->
150       <dependency>
151         <groupId>org.slf4j</groupId>
152         <artifactId>slf4j-log4j12</artifactId>
153         <version>1.7.30</version>
154         <scope>test</scope>
155       </dependency>
156
157     2)Buildpath에서 logback-core-1.2.3.jar, logback-classic-1.2.3.jar 삭제
158
159     3)pom.xml
160       <project xmlns="http://maven.apache.org/POM/4.0.0"
161         xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
162         xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
163         https://maven.apache.org/xsd/maven-4.0.0.xsd">
```

```
163        <modelVersion>4.0.0</modelVersion>
164        <groupId>MyDemo</groupId>
165        <artifactId>MyDemo</artifactId>
166        <version>0.0.1-SNAPSHOT</version>
167        <dependencies>
168          <dependency>
169            <groupId>org.slf4j</groupId>
170            <artifactId>slf4j-api</artifactId>
171            <version>1.7.30</version>
172          </dependency>
173
174          <!-- https://mvnrepository.com/artifact/org.slf4j/slf4j-log4j12 -->
175          <dependency>
176            <groupId>org.slf4j</groupId>
177            <artifactId>slf4j-log4j12</artifactId>
178            <version>1.7.30</version>
179            <scope>test</scope>
180          </dependency>
181        </dependencies>
182      </project>
183
184    4)pom.xml에 붙여넣고 > right-click > Run As > Maven install
185      [INFO] BUILD SUCCESS
186
187    5)Buildpath에서 log4j-1.2.17.jar, slf4j-log4j12-1.7.30.jar  추가
188
189    6)MyApp > right-click > Java Application
190      log4j:WARN No appenders could be found for logger (MyApp.class).
191      log4j:WARN Please initialize the log4j system properly.
192      log4j:WARN See http://logging.apache.org/log4j/1.2/faq.html#noconfig for more info.
193      2 + 2 is 4
194
195  6. log4j.properties 파일 생성하기
196    1)User Manual 에서
197      [Example 303: BasicConfiguration.configure()
      equivalent(examples/chapter3/sample().properties)]에서
198      #Set root logger level to BEBUG and add an appender called A1.
199      log4j.rootLogger=DEBUG, A1
200
201      #A1 is set to be a ConsoleAppender.
202      log4j.appender.A1=org.apache.log4j.ConsoleAppender
203
204      #A1 uses PatternLayout.
205      log4j.appender.A1.layout=org.apache.log4j.PatternLayout
206      log4j.appender.A1.layout.ConversionPattern=%-4r [%t] %-5p %c %x - %m%n
207
208    2)위의 코드를 복사하여
209      -src/main/java/log4j.properties 파일에 넣고 저장한다.
210
211    3)MyApp > right-click > Java Application
212      0    [main] INFO  MyApp.class  - Hello, World.
213      2 + 2 is 4
214
215  7. SLF4J JDK14 Binding
216    1)In mvnrepository.com,
```

```
217        -slf4j 검색
218        -SLF4J JDK14 Binding
219
220        <!-- https://mvnrepository.com/artifact/org.slf4j/slf4j-jdk14 -->
221        <dependency>
222          <groupId>org.slf4j</groupId>
223          <artifactId>slf4j-jdk14</artifactId>
224          <version>1.7.30</version>
225          <scope>test</scope>
226        </dependency>
227
228      2)pom.xml에 붙여넣고 > right-click > Run As > Maven install
229        [INFO] BUILD SUCCESS
230
231      3)Buildpath에서 slf4j-api-1.7.30.jar와 slf4j-jdk14-1.7.30.jar를 제외하고 나머지 삭제
232
233      4)MyApp > right-click > Java Application
234        2월 19, 2020 6:28:32 오후 MyApp main
235        정보: Hello, World.
236        2 + 2 is 4
```