

# Log4j hello world example

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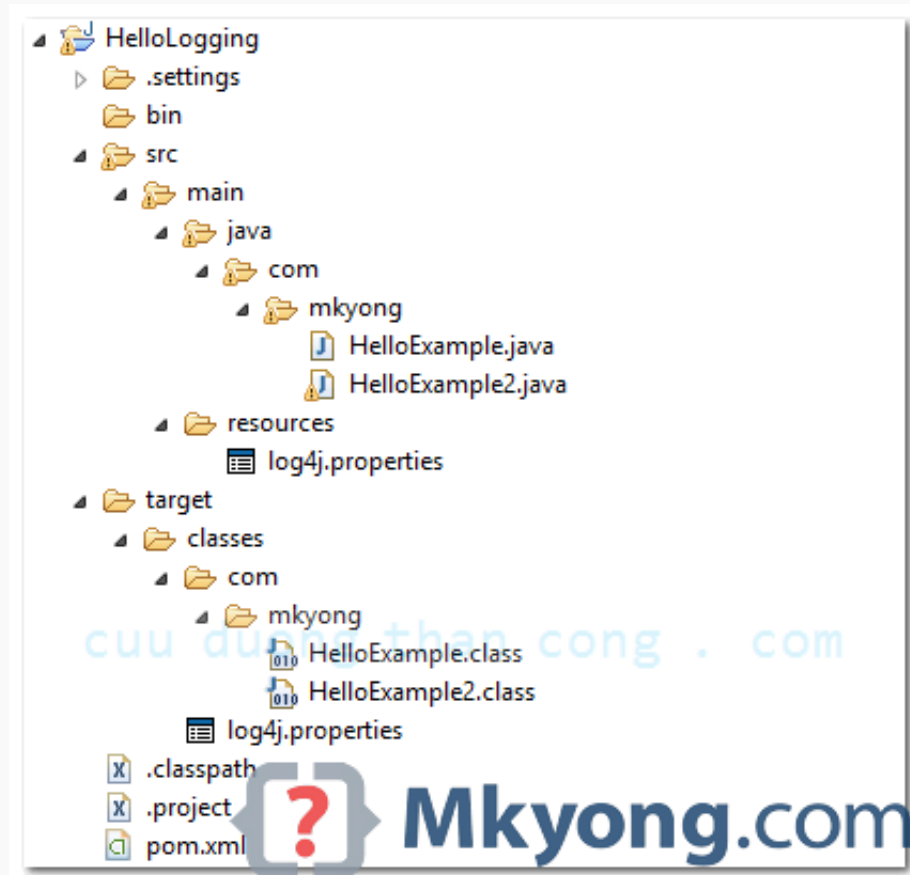
In this tutorial, we will show you how to use the classic log4j 1.2.x to log a debug or error message in a Java application.

## 1. Project Directory

Review the final project structure, a standard Maven style Java project.

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## 2. Get Log4j

Declares the following dependencies :

pom.xml

```
<dependency>  
  <groupId>log4j</groupId>
```

Markup

```
<artifactId>log4j</artifactId>
<version>1.2.17</version>
</dependency>
```

For non-Maven user, visit [log4j official page](#), download the jar and put it in the project library path manually.

### 3. log4j.properties

Create a `log4j.properties` file and put it into the resources folder. Refer to the step #1 above.

#### Note

1. For standalone Java app, make sure the `log4j.properties` file is under the `project/classes` directory
2. For Java web applications, make sure the `log4j.properties` file is under the `WEB-INF/classes` directory

#### log4j.properties

**Bash**

```
# Root logger option
log4j.rootLogger=DEBUG, stdout, file

# Redirect log messages to console
log4j.appender.stdout=org.apache.log4j.ConsoleAppender
log4j.appender.stdout.Target=System.out
log4j.appender.stdout.layout=org.apache.log4j.PatternLayout
log4j.appender.stdout.layout.ConversionPattern=%d{yyyy-MM-dd HH:mm:ss} %-5p %c{1}:%L - %m%n

# Redirect log messages to a log file, support file rolling.
log4j.appender.file=org.apache.log4j.RollingFileAppender
log4j.appender.file.File=C:\\log4j-application.log
```

```
log4j.appender.file.MaxFileSize=5MB
log4j.appender.file.MaxBackupIndex=10
log4j.appender.file.layout=org.apache.log4j.PatternLayout
log4j.appender.file.layout.ConversionPattern=%d{yyyy-MM-dd HH:mm:ss} %-5p %c{1}:%L - %m%n
```

### Note

To understand the symbols in the `ConversionPattern`, please refer to this [log4j PatternLayout guide](#).

Let break it down :

1. `%d{yyyy-MM-dd HH:mm:ss}` = Date and time format, refer to [SimpleDateFormat](#) JavaDoc.
2. `%-5p` = The logging priority, like DEBUG or ERROR. The -5 is optional, for the pretty print format.
3. `%c{1}` = The logging name we set via `getLogger()`, refer to [log4j PatternLayout guide](#).
4. `%L` = The line number from where the logging request.
5. `%m%n` = The message to log and line break.

Log message examples :

```
2014-07-02 20:52:39 DEBUG className:200 - This is debug message
2014-07-02 20:52:39 DEBUG className:201 - This is debug message2
```

Bash

## 4. Demo – How to log a Message?

To log a message, first, create a `final static` logger and define a name for the logger, normally, we use the full package class name.

```
final static Logger logger = Logger.getLogger(classname.class);
```

Java

Then, logs messages with different priorities, for example, debug, info, warn, error and fatal. Normally, you just need to use debug or

error.

```
//logs a debug message
if(logger.isDebugEnabled()){
    logger.debug("This is debug");
}

//logs an error message with parameter
logger.error("This is error : " + parameter);

//logs an exception thrown from somewhere
logger.error("This is error", exception);
```

Java

4.1 Example : Logger is set to **debug** priority.

log4j.properties

```
log4j.rootLogger=DEBUG, stdout

#...
```

Bash

HelloExample.java

```
package com.mkyong;

import org.apache.log4j.Logger;

public class HelloExample{

    final static Logger logger = Logger.getLogger(HelloExample.class);
```

Java

```
public static void main(String[] args) {  
  
    HelloExample obj = new HelloExample();  
    obj.runMe("mkyong");  
  
}  
  
private void runMe(String parameter){  
  
    if(logger.isDebugEnabled()){  
        logger.debug("This is debug : " + parameter);  
    }  
  
    if(logger.isInfoEnabled()){  
        logger.info("This is info : " + parameter);  
    }  
  
    logger.warn("This is warn : " + parameter);  
    logger.error("This is error : " + parameter);  
    logger.fatal("This is fatal : " + parameter);  
  
}  
  
}
```

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## Output

```
2014-07-02 20:52:39 DEBUG HelloExample:19 - This is debug : mkyong  
2014-07-02 20:52:39 INFO HelloExample:23 - This is info : mkyong  
2014-07-02 20:52:39 WARN HelloExample:26 - This is warn : mkyong  
2014-07-02 20:52:39 ERROR HelloExample:27 - This is error : mkyong  
2014-07-02 20:52:39 FATAL HelloExample:28 - This is fatal : mkyong
```

Bash

#### 4.2 Example – Logger is set to **error** priority.

log4j.properties

Bash

```
log4j.rootLogger=error, stdout
```

```
#...
```

Run the `HelloExample` again, you will get the following output

Bash

```
2014-07-02 20:56:02 ERROR HelloExample:27 - This is error : mkyong
```

```
2014-07-02 20:56:02 FATAL HelloExample:28 - This is fatal : mkyong
```

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Review the log4j's `Priority` class.

Priority.java

Java

```
package org.apache.log4j;
```

```
public class Priority {
```

```
    public final static int OFF_INT = Integer.MAX_VALUE;
```

```
    public final static int FATAL_INT = 50000;
```

```
    public final static int ERROR_INT = 40000;
```

```
    public final static int WARN_INT = 30000;
```

```
    public final static int INFO_INT = 20000;
```

```
    public final static int DEBUG_INT = 10000;
```

```
    //public final static int FINE_INT = DEBUG_INT;
```

```
    public final static int ALL_INT = Integer.MIN_VALUE;
```

If priority is defined in `log4j.properties`, only the same or above priority message will be logged.

## 5. Demo – How to log an Exception

An example to show you how to use log4j to log an exception.

HelloExample2.java

Java

```
package com.mkyong;

import org.apache.log4j.Logger;

public class HelloExample2{

    final static Logger logger = Logger.getLogger(HelloExample2.class);

    public static void main(String[] args) {

        HelloExample2 obj = new HelloExample2();

        try{
            obj.divide();
        }catch(ArithmeticException ex){
            logger.error("Sorry, something wrong!", ex);
        }

    }

    private void divide(){

        int i = 10 / 0;

    }

}
```



```
}  
  
}
```

## Output

```
2014-07-02 21:03:10 ERROR HelloExample2:16 - Sorry, something wrong!  
java.lang.ArithmeticException: / by zero  
    at com.mkyong.HelloExample2.divide(HelloExample2.java:24)  
    at com.mkyong.HelloExample2.main(HelloExample2.java:14)
```

Bash

Done.

## Download Source Code

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Download Source Code – [log4j-hello-world-example.zip](#)(8 KB)

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