

PRAKTIKUM SW2



Logging

LOGGING

- ❑ `java.util.logging`
- ❑ Framework for log outputs
- ❑ Output of log information and error messages

ARCHITECTURE

Logger objects with dot-separated names analogous to packages

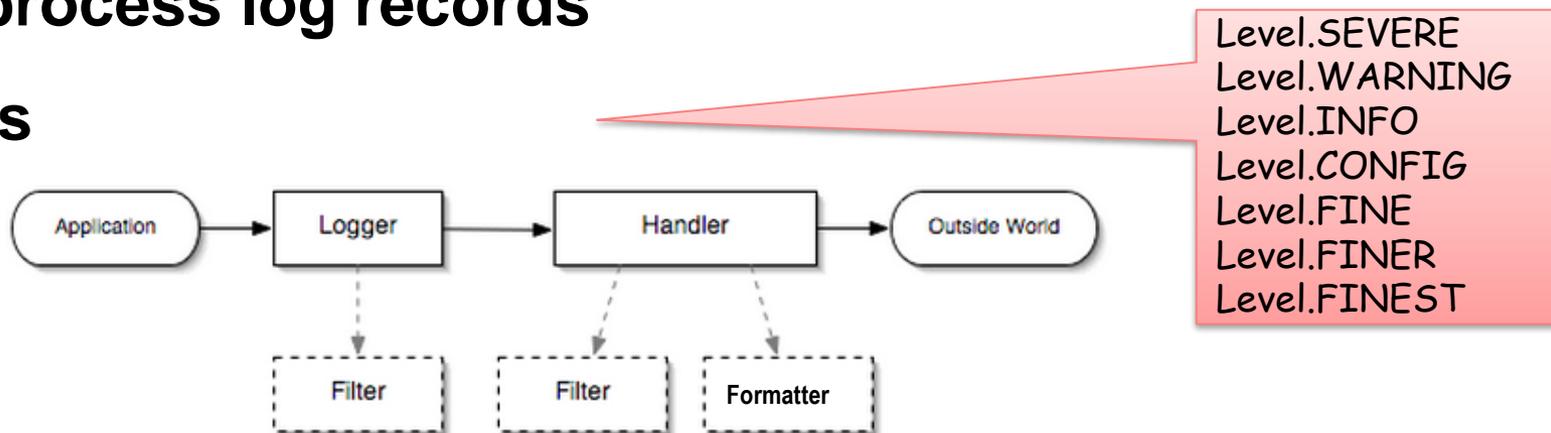
Hierarchy analogous to packages

- managed by LogManager
- Children inherit properties from parents
- Children forward calls to parents

Applications call log methods of logger → log records

Handler process log records

Log levels



Creating logger

```
static final Logger LOGGER = Logger.getLogger("at.jku.ssw.psw2.ue0x");
```

Settings

```
LOGGER.setLevel(Level.FINE);  
  
Handler handler1 = new ConsoleHandler();  
handler1.setFormatter(new XMLFormatter());  
handler1.setLevel(Level.ALL);  
LOGGER.addHandler(handler1);  
  
Handler handler2 = new FileHandler("log.txt");  
handler2.setLevel(Level.ALL);  
handler1.setFormatter(new SimpleFormatter());  
LOGGER.addHandler(handler2);
```

API

Log methods

```
public void log(Level level, String msg)
public void log(Level level, String msg, Object param)
public void log(Level level, String msg, Object params[])
public void logp(Level level, String sourceClass, String sourceMethod, String msg)
...
public void finest(String msg)
...
public void severe(String msg)
```

Location determined automatically

Allows setting location

```
LOGGER.log(Level.FINEST, " some text ");
LOGGER.log(Level.FINER, " some text ");
...
LOGGER.log(Level.SEVERE, " some text ");
```

```
LOGGER.finest(" some text ");
LOGGER.finer(" some text ");
...
LOGGER.severe(" some text ");
```

```
public void entering(String sourceClass, String sourceMethod)
...
public void exiting(String sourceClass, String sourceMethod)
...
```

SIMPLE APPLICATION

```
class MyApp {  
  
    public static final Logger LOGGER = Logger.getLogger("at.jku.ssw.psw2.ue0x");  
  
    static void main(String[] args) {  
  
        LOGGER.setLevel(Level.FINE);  
  
        Handler handler1 = new ConsoleHandler();  
        LOGGER.addHandler(handler1);  
  
        Handler handler2 = new FileHandler("log.txt");  
        LOGGER.addHandler(handler2);  
  
        ...  
        LOGGER.info("some log info");  
        ...  
        try {  
            ...  
            LOGGER.fine("operation succeeded");  
        catch (Exception e) {  
            LOGGER.severe("some error message");  
        }  
        ...  
    }  
}
```

CONFIGURATION

Settings in configuration file

```
handlers=java.util.logging.FileHandler, java.util.logging.ConsoleHandler

java.util.logging.ConsoleHandler.level=ALL
java.util.logging.ConsoleHandler.formatter=java.util.logging.SimpleFormatter

java.util.logging.FileHandler.level=SEVERE
java.util.logging.FileHandler.pattern=tutego.log
java.util.logging.FileHandler.formatter=java.util.logging.XMLFormatter
```

```
System.setProperty( "java.util.logging.config.file", "logging.properties" );
try { LogManager.getLogManager().readConfiguration(); }
catch ( Exception e ) { e.printStackTrace(); }
```

OUTPUT

Example

```
Apr 07, 2014 10:06:46 AM websearch.server.RestController readFromClient
FINE: <--RECV: SEARCH http://www.ssw.uni-linz.ac.at/Teaching/Lectures/PSW2/2014/index.html Java 3
Apr 07, 2014 10:06:46 AM websearch.server.RestController processUrl
FINE: Submitting: Request [url=http://www.ssw.uni-linz.ac.at/Teaching/Lectures/PSW2/2014/index.html, item=Java, depth=3] n getters = 1
Apr 07, 2014 10:06:46 AM websearch.server.RestController$Getter run
FINE: Getter start : Request [url=http://www.ssw.uni-linz.ac.at/Teaching/Lectures/PSW2/2014/index.html, item=Java, depth=3]
Apr 07, 2014 10:06:46 AM websearch.server.RestController writeToClient
FINE: -->SENT: FOUND http://www.ssw.uni-linz.ac.at/Teaching/Lectures/PSW2/2014/index.html 294 fortgeschrittene Konzepte der
Programmiersprache Java vermittelt.
Apr 07, 2014 10:06:46 AM websearch.server.RestController writeToClient
FINE: -->SENT: FOUND http://www.ssw.uni-linz.ac.at/Teaching/Lectures/PSW2/2014/index.html 316      <li>JavaBeans</li>
Apr 07, 2014 10:06:46 AM websearch.server.RestController writeToClient
FINE: -->SENT: FOUND http://www.ssw.uni-linz.ac.at/Teaching/Lectures/PSW2/2014/index.html 366      Martin Schader, Lars Schmidt-Thieme:
<i>Java - Eine Einf&uuml;hrung</i>. 3. Auflage, Springer-Verlag, 2000.<br>
Apr 07, 2014 10:06:46 AM websearch.server.RestController writeToClient
...
INFO: Done: Request [url=http://www.ssw.uni-linz.ac.at/Teaching/Lectures/PSW2/2014/index.html, item=Java, depth=3]
```