

# Logging

## Logging Frameworks

- Apache Log4j (don't use that anymore)
- java.util.logging (JDK 1.4) - nobody uses that
- commons.logging (Facade) (don't use that anymore)
- **Logback** (Ceki Gülcü)
- **SLF4J** - Simple Logging Facade 4 Java
- **Log4j2** - Good Choice

## Log Levels

Level	Content
NONE (virtual)	All logging turned off
FATAL / SEVERE	Save what's worth saving, shut down application
ERROR	Save what's possible, gracefully shut down or (if agreed upon) try to recover
WARN	Impact only for one user/group, rest works fine - easy to recover from
INFO	Business facts / Compliance
DEBUG	Where and when I am in my execution flow, minimal data logging (just for identification)
TRACE	Values, values, ... try to limit the number of log messages
ALL (virtual)	All logging turned on

## Logger declaration

```
private final Logger logger = LoggerFactory.getLogger(this.getClass());  
private final Logger dataQualityLogger = LoggerFactory.getLogger("DATA QUALITY");
```

```
@Slf4j // or  
@Log4j2  
public class Service {}
```

## Logger Hierarchy

1. ROOT logger

2. Package loggers (e.g. at.spengergasse)
3. Class loggers (e.g. at.spengergasse.sj2324posproject.service.BookService)
4. Named loggers (e.g. "DataQuality", "Security")

## Log Formats (aka Layouts)

- TEXT
- JSON

## Logger Outputs (aka Appenders)

- Console (default)
- Files
- Databases
- Network
- Mail
- Implement your very own