

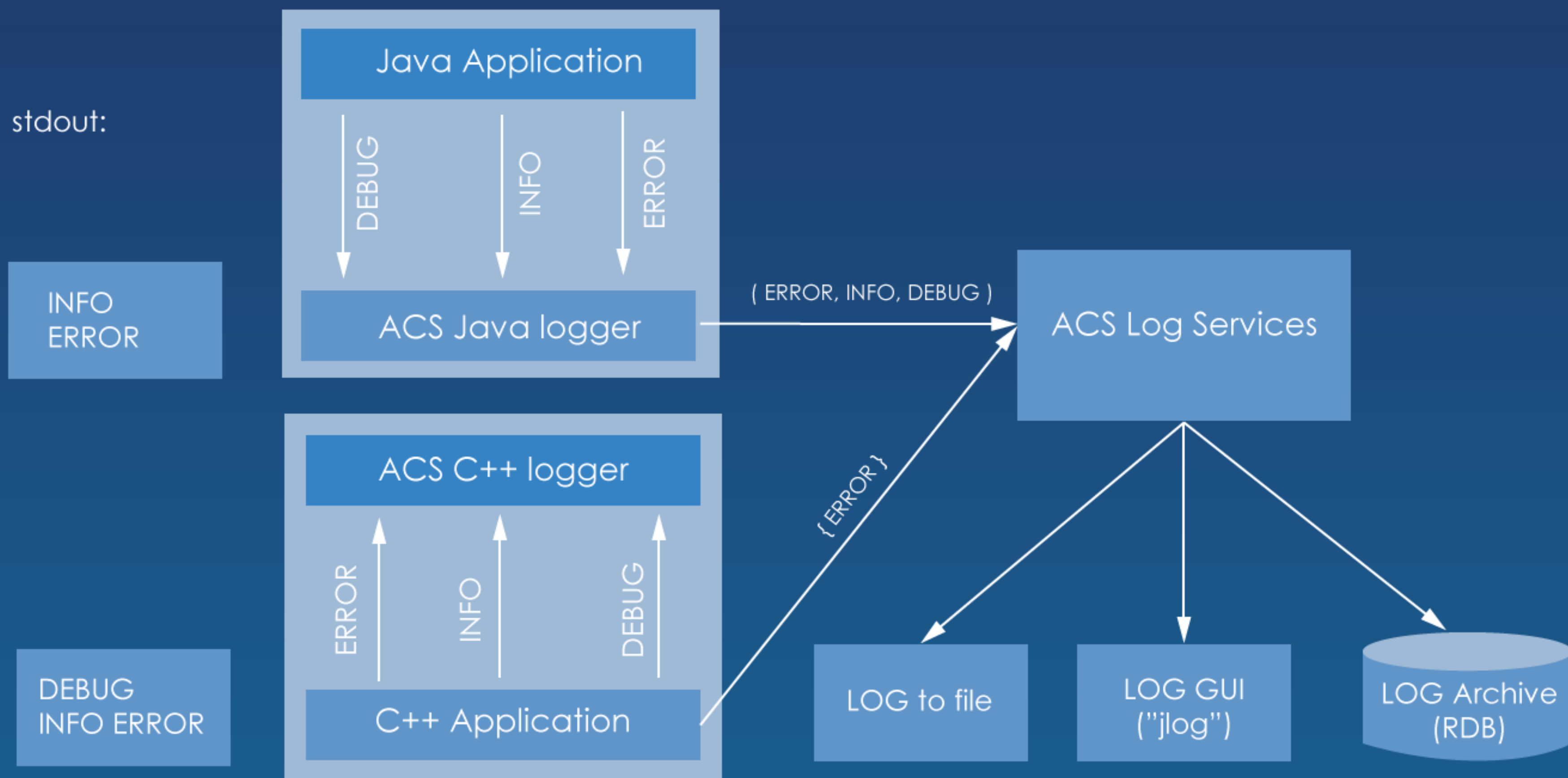


ALMA Common Software

Basic Track

Logging and Error Systems





- ✧ The logging system provide
 - ✧ status and diagnostic information
 - ✧ historical archive
 - ✧ filtering capabilities by level/audience
- ✧ Several logging levels:
 - ✧ Trace (1), Delouse (2), Debug (3), Info (4), Notice (5), Warning (6) , Error (8), Critical (9), Alert (10), Emergency (11), Off (99)
- ✧ Three logging audiences (orthogonal to log levels):
 - ✧ ENGINEER, OPERATOR, SCIOLOG
- ✧ They are essential for post-mortem analysis
- ✧ They are normally intended for developers and operators

- ✧ Logging service:
 - ✧ Transport through a notification channel
 - ✧ Graphical user interface to visualize them in runtime or offline (jlog)
- ✧ For later processing can be:
 - ✧ written to file
 - ✧ stored in DB
- ✧ For high performance / robustness:
 - ✧ Transparent caching
 - ✧ Transfer asynchronously in batches
- ✧ Transparent insertion of additional data:
 - ✧ host / container names
 - ✧ thread name

Warning: Every logging client considerably slows down the logging system! Congestions can lead to a logging service crash

- ✧ Conveniently reduce number of executions of identical activity
 - ✧ e.g. Logging of same log message, e.g. “incident detected”, N times/s
 - ✧ Can be used for other activities, is wrapped around activity
- ✧ Configurable based on:
 - ✧ Number of executions
 - ✧ Time interval
 - ✧ Combinations of both



Log entry example



<Debug

TimeStamp="2002-10-7T13:44:16.530"

Host="tel.hq.eso.org"

Process="baciTestServer"

Thread="main"

Context=""

File="baciTestClassImpl.cpp"

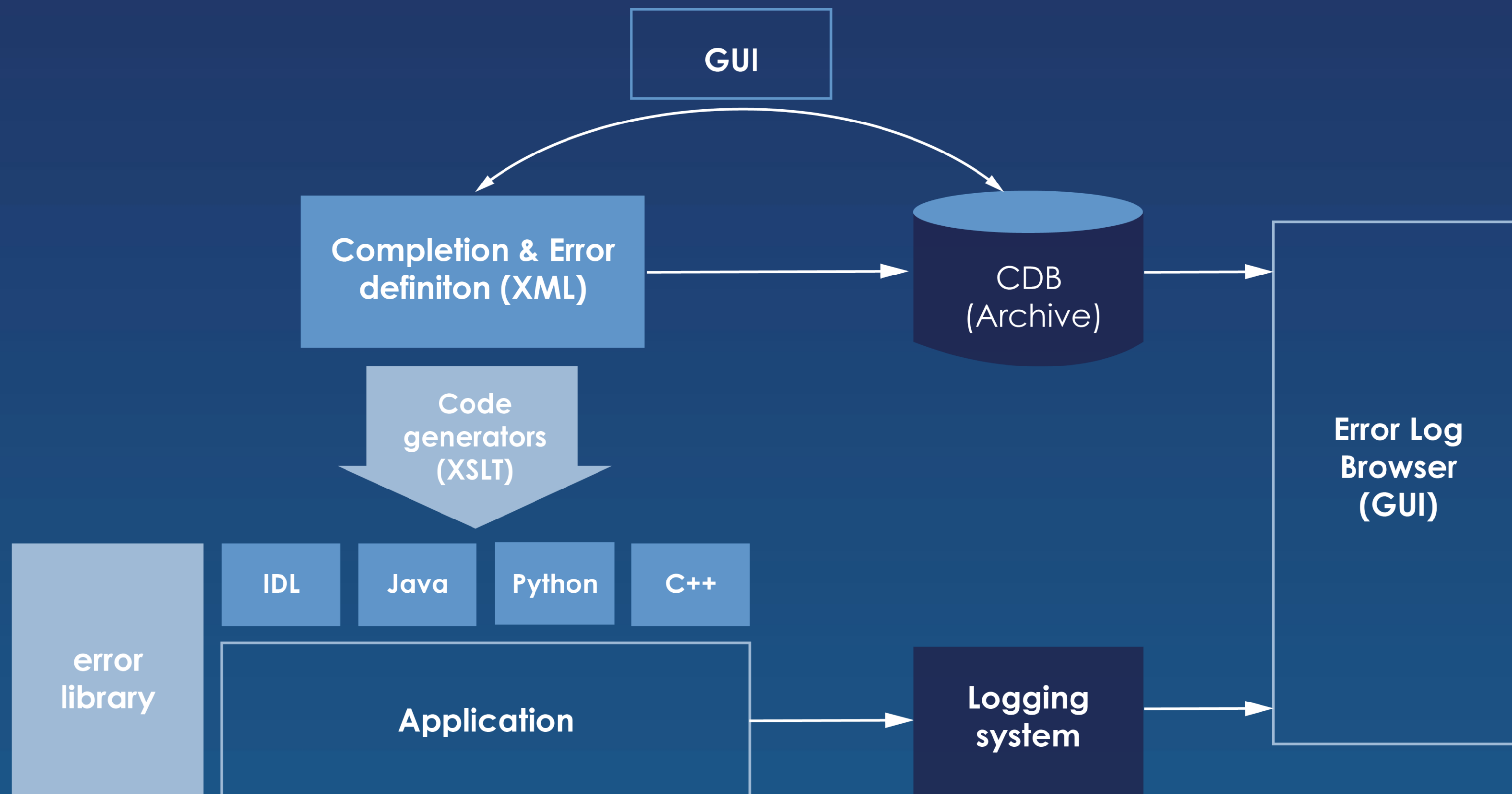
Line="205"

Routine="BaciTestClass::~~BaciTestClass

>

- ✧ Default configuration
 - ✧ log TRACE and above levels
- ✧ Optional environment variables can set per-process log levels
- ✧ CDB can set per-process log levels / per-logger level
- ✧ Tools to dynamically change log levels in running system
- ✧ Environment variables:
 - ✧ Log level for console: `$ACS_LOG_STDOUT`
 - ✧ Central logging level: `$ACS_LOG_CENTRAL`
 - ✧ Log file name: `$ACS_LOG_FILE`

- ✧ ACS: faults or errors are a situation that requires handling
- ✧ Handled by developer
- ✧ Helpers (acserr.idl):
 - ✧ Completion
 - ✧ Not critically failed execution / execution OK
 - ✧ Errors
 - ✧ Critically failed execution
 - ✧ ACS (CORBA) exceptions predefined in XML
(ACSErrTypeCommon.xml, ACSErrTypeCommon.idl)
- ✧ Error propagation → Error trace
 - ✧ Chaining of Completions
 - ✧ Chaining of errors / ACS exceptions
 - ✧ Possible across process boundaries



□ not yet available

■ not part of error



✧ Logging and Archiving:

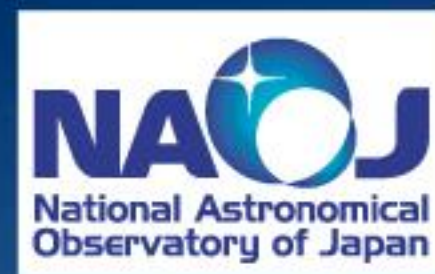
✧ http://www.eso.org/projects/alma/develop/acs/OnlineDocs/Logging_and_Archiving.pdf

✧ Definitive guide to logs and errors

✧ <http://almasw.hq.eso.org/almasw/bin/view/HLA/LoggingErrorAlarmsGuidelines>

✧ And of course, the source code

Questions?



Acknowledgements

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