Log Analayzer

A simple CLI-base tool which can help you with your log analysis.

Short description:

Base features:

- Parsing *.log files.
- Parsing *.log files rolled in *.zip, but only in specific format (described below).
- Logs for analysis comes from base directory for provided path and subdirectory called "archive".
- Logs for analysis should contain *SysMonError* in file name.
- Storage history of analysed *.log files as JSON file.
- Generation of Excel document based on JSON history file.

Single log format:

Format of analysed logs (sections are cut by pipe separator):

> [LOG|ERROR|2020 January 15, 06:35:30 (584)|TestServer|/var/log/Server_141012.log]
>
> Example message
>
> [END]
>
> com.marketdata.MarketDataException: No Currency Default Set up for null at com.util.CurrencyUtil.getFamilyCurrencyPair(CurrencyUtil.java:7) at com.util.CurrencyUtil.getCcyFamily(CurrencyUtil.java:10)

Prerequisites

- JDK 1.7
- Maven 3.6.3

Setup project:

- settings.xml for Maven is included in `/mvn_settings_runConfigs/settings.xml` directory
- run configurations (supported by IDEA) are included in `/mvn_settings_runConfigs/runConfigurations/*`
- Maven command to make fat-jar under JDK7: `mvn -Dhttps.protocols=TLSv1.2 install clean package` or an alternative *runConfiguration* named `log_analyzer___Dhttps_protocols_TLSv1_2____.xml` under `/mvn_settings_runConfigs/`

Step-by-step setup:

1. Clone git/svn repository from **release/0.1** branch for latest stable version
2. Open IntelliJ and import project as Maven project - **Cancel dependency resolution if you're using custom Maven settings.xml!**
3. Open Settings and go to Maven Settings and replace/override: *Maven home directory to apache-maven-3.6.3* and *settings.xml from mvn_settings_runConfigs subdirectory*
4. Copy **runConfigurations** directory under your **.idea** directory and restart IntelliJ
5. Now you're able to run Maven goal by choosing it from run configuration list in the upper area of the IntelliJ window
6. Now your dependencies will be resolved to those defined in pom.xml and project would be packaged into target/ directory.

How to use:

Available commands:

Action	Flag	Description
Help	--help	Shows available commands as also their description and briefly information about software version.
Directory Path	--path [argument]	Specify the path to the directory to scan. In case of any whitespaces in path use double quotes.
Date From	--datefrom [argument]	Specify the date with time where log analysis should be STARTED. Format: yyyyMMddHHmmss Example: 20190125121544 for 25-01-2019 12:15:44.
Date To	--dateto [argument]	Specify the date with time where log analysis should be FINISHED. Format: yyyyMMddHHmmss Example: 20190125121544 for 25-01-2019 12:15:44.
Generate report	--report	Generates Excel report file.

Examples of allowed flag combinations:

Show help:

```
java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --help
```

Analyse logs under provided path:

```
java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --path "/var/logs"
```

Analyse logs under provided path where logs dates are after '--datefrom':

> java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --path "/var/logs" --datefrom 20101001120000

Analyse logs under provided path where logs dates are before '--dateto':

> java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --path "/var/logs" --dateto 20101201120000

Analyse logs under provided path where logs dates are between time interval '--datefrom' and '--dateto':

> java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --path "/var/logs" --datefrom 20101001120000 --dateto 20101201120000

Create Excel report file based on LogHistory.json file:

> java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --report

Analyse logs under provided path where logs dates are before '--dateto' and create Excel report based on LogHistory.json and current analysis:

> java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --path "/var/logs" --dateto 20101201120000

GlobalConfiguration.json:

This configuration can be found under *'resources/'* directory inside project or in JAR archive under *'BOOT-INF/classes/'*

```
{
  "logDelimiterPattern": "|######|",
  "regexFilterList": [
    "(?<=\\[Error-ID: \\d\\d\\d-\\d\\d\\d\\d\\]).*",
    "([a-z]+[0-9]|[0-9]+[a-z])[a-z0-9]*",
    "(?s)\\{.*\\}(?=.*(\\[END\\]|$))"
  ],
  "historyFileName" : "LogHistory.json"
}
```

logDelimiterPattern - this pattern is responsible for exchange pipe operator in cut log files

regexFilterList - array of regular expressions responsible for filtering logs in every analysis

historyFileName - string which describes name of history file after analysis

Example application flows:

Request for help:

CLI input command:

```
EE55288@GUSDZ9050182 MINGW64 /c/projects/EE55288/log-analyzer (development)
$ java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --help
```

Answer:

```
EE55288@GUSDZ9050182 MINGW64 /c/projects/EE55288/log-analyzer (development)
$ java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --help
2020-02-11 13:35:50 [main] INFO  (RunnerCLI:41) - ================================================
2020-02-11 13:35:50 [main] INFO  (RunnerCLI:42) -               Log Analyzer v 0.1
2020-02-11 13:35:50 [main] INFO  (RunnerCLI:43) - ================================================
2020-02-11 13:35:50 [main] INFO  (GlobalConfigurationHandler:23) - Trying to initialize settings...
2020-02-11 13:35:51 [main] INFO  (GlobalConfigurationHandler:63) - Settings are successfully initialized.

Available commands:

Help                --help                          Shows available commands as also their description and briefly information about software version
Directory Path      --path [argument]               Specify the path to the directory to scan. In case of any whitespaces in path use double quotes.
Date From           --datefrom [argument]           Specify the date with time where log analysis should be STARTED. Format: yyyyMMddHHmmss Example: 20190125121544 for 25-01-2019 12:15:44.
Date To             --dateto [argument]             Specify the date with time where log analysis should be FINISHED. Format: yyyyMMddHHmmss Example: 20190125121544 for 25-01-2019 12:15:44.
Generate report     --report                        Generates Excel report file.


2020-02-11 13:35:51 [main] INFO  (App:32) - Execution time: 00:00:00.630
```

Example application flows:

Analysis of simple *.log file with report generation:

CLI input command:

```
EE55288@GUSDZ9050182 MINGW64 /c/projects/EE55288/log-analyzer (development)
$ java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --path "C:\projects\IdeaProjects\LOG_EXAMPLES\documentation-log" --report
```

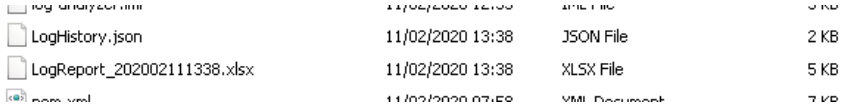
Analysis:

```
EE55288@GUSDZ9050182 MINGW64 /c/projects/EE55288/log-analyzer (development)
$ java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --path "C:\projects\IdeaProjects\LOG_EXAMPLES\documentation-log" --report
2020-02-11 13:38:30 [main] INFO  (RunnerCLI:41) - ================================================
2020-02-11 13:38:30 [main] INFO  (RunnerCLI:42) -                 Log Analyzer v 0.1
2020-02-11 13:38:30 [main] INFO  (RunnerCLI:43) - ================================================
2020-02-11 13:38:30 [main] INFO  (GlobalConfigurationHandler:23) - Trying to initialize settings...
2020-02-11 13:38:31 [main] INFO  (GlobalConfigurationHandler:63) - Settings are successfully initialized.
2020-02-11 13:38:31 [main] INFO  (HistoryLoader:18) - --------------------------------
2020-02-11 13:38:31 [main] INFO  (HistoryLoader:23) - Trying to load JSON history file...
2020-02-11 13:38:31 [main] INFO  (HistoryLoader:35) - History JSON not available.
2020-02-11 13:38:31 [main] INFO  (DirectoryExplorer:24) - --------------------------------
2020-02-11 13:38:31 [main] INFO  (DirectoryExplorer:25) - Resolving all paths in passed directory...
2020-02-11 13:38:31 [main] INFO  (DirectoryExplorer:49) - Collection of File path has size of: 1
2020-02-11 13:38:31 [main] INFO  (Analyzer:75) - --------------------------------
2020-02-11 13:38:31 [main] INFO  (Analyzer:78) - [1/1] [LOG FILE] Found ERROR or FATAL logs in file: C:\projects\IdeaProjects\LOG_EXAMPLES\documentation-log\TEST_SysMonError.log
2020-02-11 13:38:31 [main] INFO  (Analyzer:94) - This process could take a while. Stay calm.
2020-02-11 13:38:31 [main] INFO  (Analyzer:84) - Successfully processed 3 logs from file.
2020-02-11 13:38:31 [main] INFO  (Analyzer:86) - --------------------------------
2020-02-11 13:38:31 [main] INFO  (Analyzer:87) - Sum of processed files: 1
2020-02-11 13:38:31 [main] INFO  (Analyzer:88) - Sum of processed logs: 3
2020-02-11 13:38:31 [main] INFO  (Analyzer:89) - --------------------------------
2020-02-11 13:38:31 [main] INFO  (HistoryLoader:49) - Rewriting the LogHistory.json file...
2020-02-11 13:38:31 [main] INFO  (HistoryLoader:51) - Newer version of history has been successfully saved!
2020-02-11 13:38:31 [main] INFO  (ReportGenerator:40) - Report [1/10]: Creating new sheet...
2020-02-11 13:38:32 [main] INFO  (ReportGenerator:47) - Report [2/10]: Creating column headers...
2020-02-11 13:38:32 [main] INFO  (ReportGenerator:55) - Report [3/10]: Creating cell styles...
2020-02-11 13:38:32 [main] INFO  (ReportGenerator:63) - Report [4/10]: Inserting data to the report...
2020-02-11 13:38:32 [main] INFO  (ReportGenerator:70) - Report [5/10]: Resizing columns...
2020-02-11 13:38:32 [main] INFO  (ReportGenerator:80) - Report [6/10]: Setting up auto filters...
2020-02-11 13:38:32 [main] INFO  (ReportGenerator:89) - Report [7/10]: Setting up possible values for statuses...
2020-02-11 13:38:32 [main] INFO  (ReportGenerator:94) - Report [8/10]: Creating report 'xlsx' file...
2020-02-11 13:38:32 [main] INFO  (ReportGenerator:97) - Report [9/10]: Trying to save created file...
2020-02-11 13:38:32 [main] INFO  (ReportGenerator:106) - Report [10/10]: Report has been successfully generated!
2020-02-11 13:38:32 [main] INFO  (App:32) - Execution time: 00:00:02.005
```

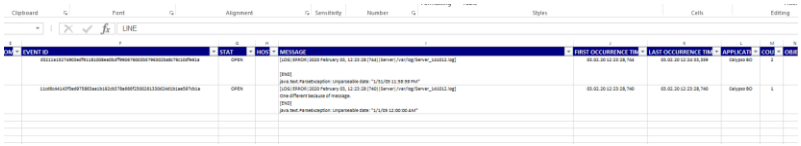
LogHistory.json view:


```
{
  "d3211a15274903edf91181008ea0b4ff990676003b5796302ba8c76c10dfe61a": {
    "hashId": "d3211a15274903edf91181008ea0b4ff990676003b5796302ba8c76c10dfe61a",
    "type": "ERROR",
    "firstCallDateString": "2020-02-03 12:24:28.744",
    "firstCallDateTimeStamp": 1580729068744,
    "lastCallDateString": "2020-02-03 12:24:33.359",
    "lastCallDateTimeStamp": 1580729073359,
    "origin": "TEST_SysMonError.log",
    "logFileDetails": "/var/log/Server_141012.log]",
    "occurrences": 2,
    "fullLogMessage": "[LOG|ERROR|2020 February 03, 12:24:28 (744)|Server|/var/log/Server_141012.log]\n\n[END]\njava.text.ParseException: Unpars
  },
  "11cd6c44143f5ed975863aa1b192cb378a666f2500261330d24d1b1ae597cb1a": {
    "hashId": "11cd6c44143f5ed975863aa1b192cb378a666f2500261330d24d1b1ae597cb1a",
    "type": "ERROR",
    "firstCallDateString": "2020-02-03 12:23:28.740",
    "firstCallDateTimeStamp": 1580729008740,
    "lastCallDateString": "2020-02-03 12:23:28.740",
    "lastCallDateTimeStamp": 1580729008740,
    "origin": "TEST_SysMonError.log",
    "logFileDetails": "/var/log/Server_141012.log]",
    "occurrences": 1,
    "fullLogMessage": "[LOG|ERROR|2020 February 03, 12:23:28 (740)|Server|/var/log/Server_141012.log]\nOne different because of message.\n[END]\
  }
}
```


Directory view after analysis:



Excel report:



Example application flows:

Analysis of simple *.log file with date provided interval and report generation:

CLI input command:

```
EE55288@GUSDZ9050182 MINGW64 /c/projects/EE55288/log-analyzer (development)
$ java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --path "C:\projects\IdeaProjects\LOG_EXAMPLES\documentation-log" --dateto 20200203122400 --report
```

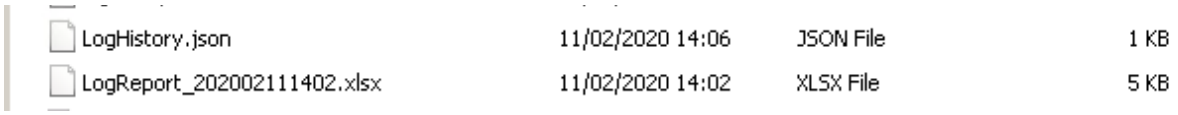
Analysis:

```
EE55288@GUSDZ9050182 MINGW64 /c/projects/EE55288/log-analyzer (development)
$ java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --path "C:\projects\IdeaProjects\LOG_EXAMPLES\documentation-log" --dateto 20200203122400 --report
2020-02-11 14:02:33 [main] INFO  (RunnerCLI:41) - ================================================
2020-02-11 14:02:33 [main] INFO  (RunnerCLI:42) -                Log Analyzer v 0.1
2020-02-11 14:02:33 [main] INFO  (RunnerCLI:43) - ================================================
2020-02-11 14:02:33 [main] INFO  (GlobalConfigurationHandler:23) - Trying to initialize settings...
2020-02-11 14:02:33 [main] INFO  (GlobalConfigurationHandler:63) - Settings are successfully initialized.
2020-02-11 14:02:33 [main] DEBUG (Analyzer:46) - Passed date/dates is/are valid: true
2020-02-11 14:02:33 [main] INFO  (HistoryLoader:18) - ---------------------------------
2020-02-11 14:02:33 [main] INFO  (HistoryLoader:23) - Trying to load JSON history file...
2020-02-11 14:02:33 [main] INFO  (HistoryLoader:30) - History JSON successfully loaded. (Number of records: 0)
2020-02-11 14:02:33 [main] INFO  (DirectoryExplorer:24) - ---------------------------------
2020-02-11 14:02:33 [main] INFO  (DirectoryExplorer:25) - Resolving all paths in passed directory...
2020-02-11 14:02:33 [main] INFO  (DirectoryExplorer:49) - Collection of file path has size of: 1
2020-02-11 14:02:33 [main] INFO  (Analyzer:52) - Filter logs from history...
2020-02-11 14:02:33 [main] INFO  (Analyzer:119) - Start filtering logs. Current collection size: 0
2020-02-11 14:02:33 [main] INFO  (Analyzer:142) - Filtered out 0 which occurrences don't match to date range.
2020-02-11 14:02:33 [main] INFO  (Analyzer:75) - ---------------------------------
2020-02-11 14:02:33 [main] INFO  (Analyzer:78) - [1/1] [LOG FILE] Found ERROR or FATAL logs in file: C:\projects\IdeaProjects\LOG_EXAMPLES\documentation-log\TEST_SysMonError.log
2020-02-11 14:02:33 [main] INFO  (Analyzer:94) - This process could take a while. Stay calm.
2020-02-11 14:02:33 [main] INFO  (Analyzer:84) - Successfully processed 3 logs from file.
2020-02-11 14:02:33 [main] INFO  (Analyzer:86) - ---------------------------------
2020-02-11 14:02:33 [main] INFO  (Analyzer:87) - Sum of processed files: 1
2020-02-11 14:02:33 [main] INFO  (Analyzer:88) - Sum of processed logs: 3
2020-02-11 14:02:33 [main] INFO  (Analyzer:89) - ---------------------------------
2020-02-11 14:02:33 [main] INFO  (Analyzer:119) - Start filtering logs. Current collection size: 2
2020-02-11 14:02:33 [main] INFO  (Analyzer:142) - Filtered out 1 which occurrences don't match to date range.
2020-02-11 14:02:33 [main] INFO  (HistoryLoader:49) - Rewriting the LogHistory.json file...
2020-02-11 14:02:33 [main] INFO  (HistoryLoader:51) - Newer version of history has been successfully saved!
2020-02-11 14:02:33 [main] INFO  (ReportGenerator:40) - Report [1/10]: Creating new sheet...
2020-02-11 14:02:34 [main] INFO  (ReportGenerator:47) - Report [2/10]: Creating column headers...
2020-02-11 14:02:34 [main] INFO  (ReportGenerator:55) - Report [3/10]: Creating cell styles...
2020-02-11 14:02:34 [main] INFO  (ReportGenerator:63) - Report [4/10]: Inserting data to the report...
2020-02-11 14:02:34 [main] INFO  (ReportGenerator:70) - Report [5/10]: Resizing columns...
2020-02-11 14:02:34 [main] INFO  (ReportGenerator:80) - Report [6/10]: Setting up auto filters...
2020-02-11 14:02:34 [main] INFO  (ReportGenerator:89) - Report [7/10]: Setting up possible values for statuses...
2020-02-11 14:02:34 [main] INFO  (ReportGenerator:94) - Report [8/10]: Creating report 'xlsx' file...
2020-02-11 14:02:34 [main] INFO  (ReportGenerator:97) - Report [9/10]: Trying to save created file...
2020-02-11 14:02:35 [main] INFO  (ReportGenerator:106) - Report [10/10]: Report has been successfully generated!
2020-02-11 14:02:35 [main] INFO  (App:32) - Execution time: 00:00:01.982
```

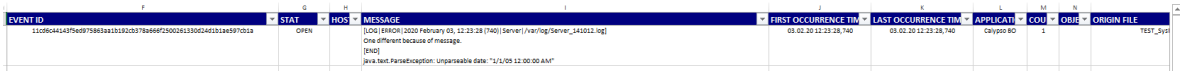
LogHistory.json view:


```
{
  "11cd6c44143f5ed975863aa1b192cb378a666f2500261330d24d1b1ae597cb1a": {
    "hashId": "11cd6c44143f5ed975863aa1b192cb378a666f2500261330d24d1b1ae597cb1a",
    "type": "ERROR",
    "firstCallDateString": "2020-02-03 12:23:28.740",
    "firstCallDateTimeStamp": 1580729008740,
    "lastCallDateString": "2020-02-03 12:23:28.740",
    "lastCallDateTimeStamp": 1580729008740,
    "origin": "TEST_SysMonError.log",
    "logFileDetails": "/var/log/Server_141012.log]",
    "occurrences": 1,
    "fullLogMessage": "[LOG|ERROR|2020 February 03, 12:23:28 (740)|Server|/var/log/Server_141012.log]\nOne different because of message.\n[END]\njava.text.ParseException: Unpa
  }
}
```


Directory view after analysis:



Excel report:



Example application flows:

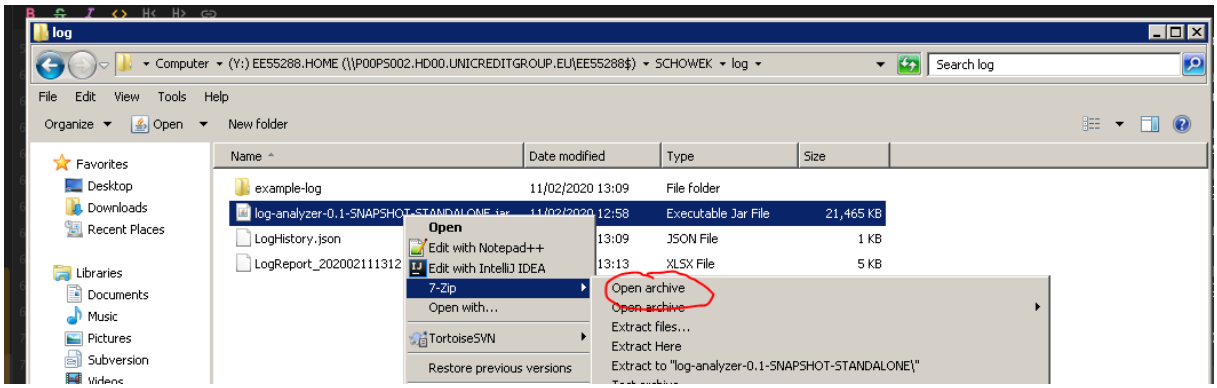
Wrongly passed CLI commands:

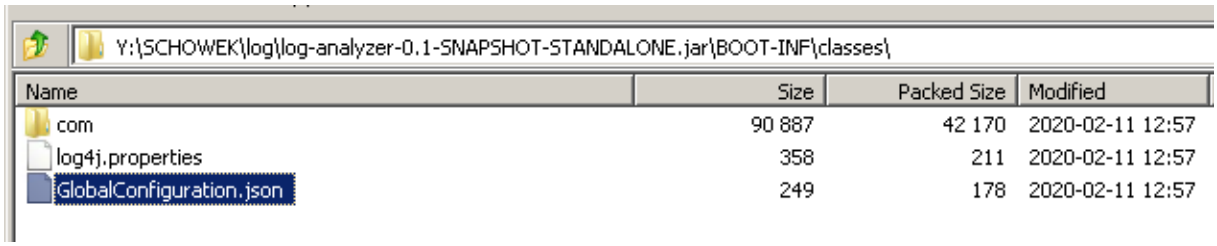
```
EE55288@GUSDZ9050182 MINGW64 /c/projects/EE55288/log-analyzer (development)
$ java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --help --path "C:\projects\IdeaProjects\LOG_EXAMPLES\documentation-log"
```

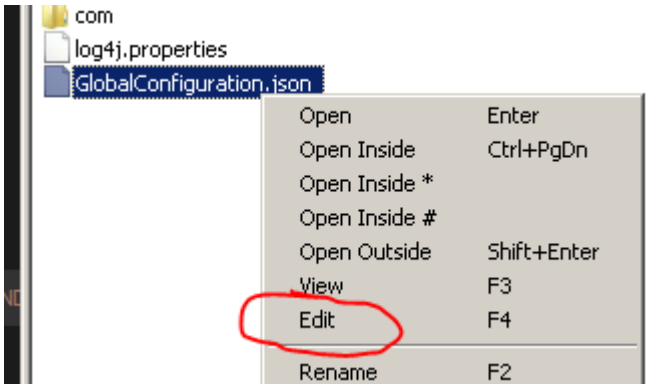
Effect:

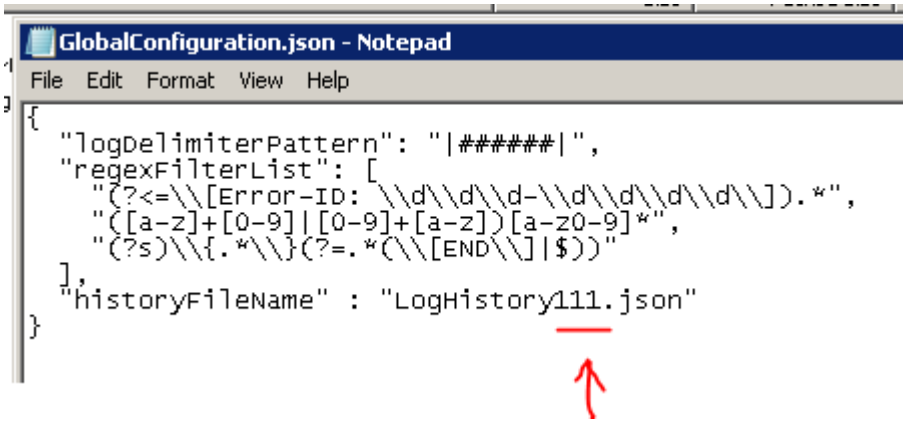
```
EE55288@GUSDZ9050182 MINGW64 /c/projects/EE55288/log-analyzer (development)
$ java -jar target/log-analyzer-0.1-SNAPSHOT-STANDALONE.jar --help --path "C:\projects\IdeaProjects\LOG_EXAMPLES\documentation-log"
2020-02-11 14:13:03 [main] INFO  (RunnerCLI:41) - ================================================
2020-02-11 14:13:03 [main] INFO  (RunnerCLI:42) -                Log Analyzer v 0.1
2020-02-11 14:13:03 [main] INFO  (RunnerCLI:43) - ================================================
2020-02-11 14:13:03 [main] ERROR (App:22) -
com.example.cli.exception.CliCommandWrongMethodCombinationException: Program cannot be run with combination of '--path' and '--help' flags.
        at com.example.cli.model.CliCommand.validateCommandsCombination(CliCommand.java:61)
        at com.example.cli.RunnerCLI.validatePassedCommands(RunnerCLI.java:59)
        at com.example.cli.RunnerCLI.run(RunnerCLI.java:52)
        at com.example.App.main(App.java:20)
        at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
        at sun.reflect.NativeMethodAccessorImpl.invoke(Unknown Source)
        at sun.reflect.DelegatingMethodAccessorImpl.invoke(Unknown Source)
        at java.lang.reflect.Method.invoke(Unknown Source)
        at org.springframework.boot.loader.MainMethodRunner.run(MainMethodRunner.java:48)
        at org.springframework.boot.loader.Launcher.launch(Launcher.java:87)
        at org.springframework.boot.loader.Launcher.launch(Launcher.java:51)
        at org.springframework.boot.loader.JarLauncher.main(JarLauncher.java:52)
2020-02-11 14:13:03 [main] INFO  (App:32) - Execution time: 00:00:00.045
```

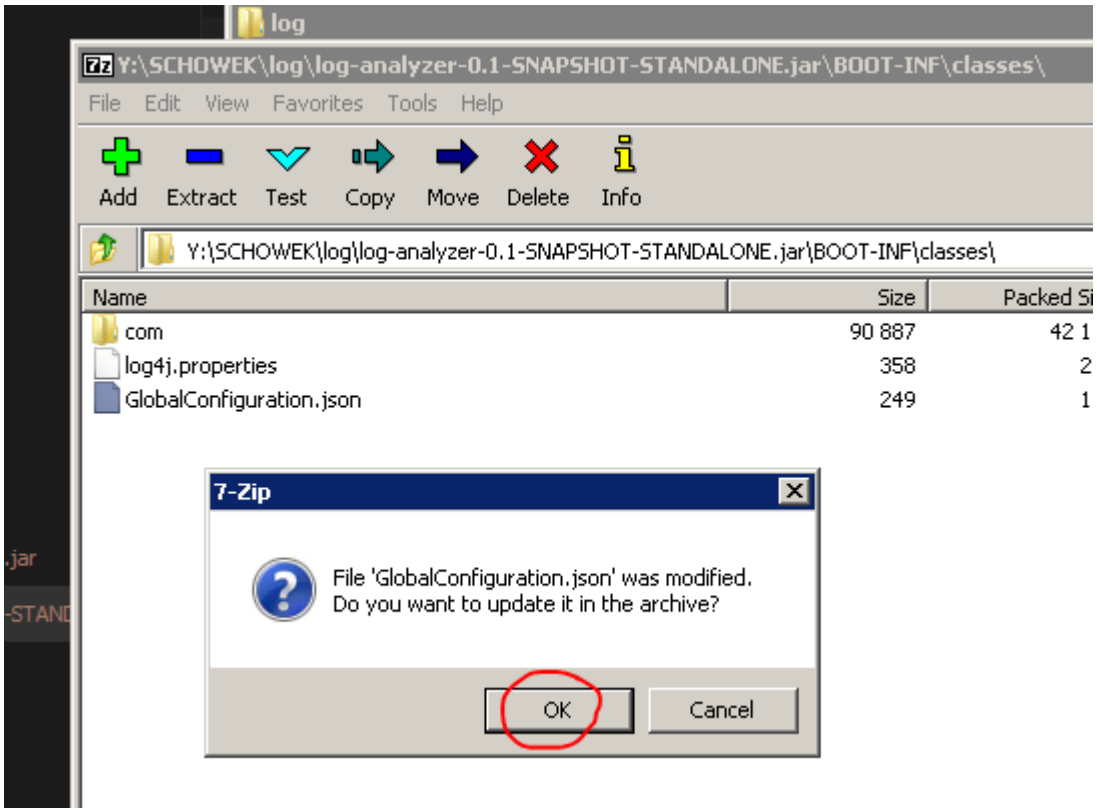
Change GlobalSettings.json:

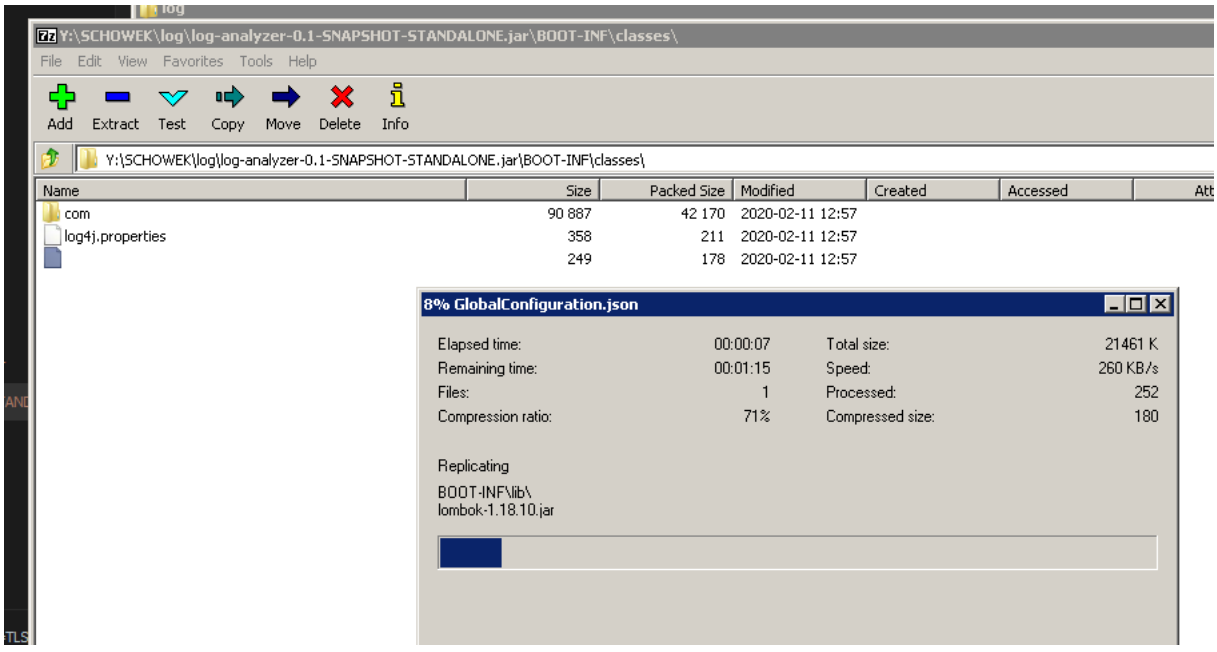












SETTINGS IN JAR ARCHIVE ARE SUCCESSFULLY CHANGED!