



**LiquiBase Guidelines**

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# What is Liquibase?

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|  | * Liquibase in an open source, database independent library for tracking, managing and applying database changes. * Database changes are stored in an XML file and (optionally) checked into source control. * Liquibase executes changes based on this XML file to handle different revisions of database structures and data. |

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|  | * Consistent database changes * Manage database at different states. * Keep a history of changes. * Automatic rollback support. * Ability of automation. * Effectively manage variable change * Less human resources/errors. |

# Why Liquibase?

# Support different format

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|  | * XML * JSON * YAML * SQL |

# Install Liquibase on windows

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|  | * **Download Liquibase for Windows from below link.**   https://www.liquibase.org/download   * **Install Liquibase Desktop on Windows**  1. Download Liquibase and extract in C drive and copy path and add in Environment User Variable. 2. Must Install Java In Local Machine. 3. Check Java Install or not Command: **Java -version** |

**Step: 1**

A screenshot of a computer

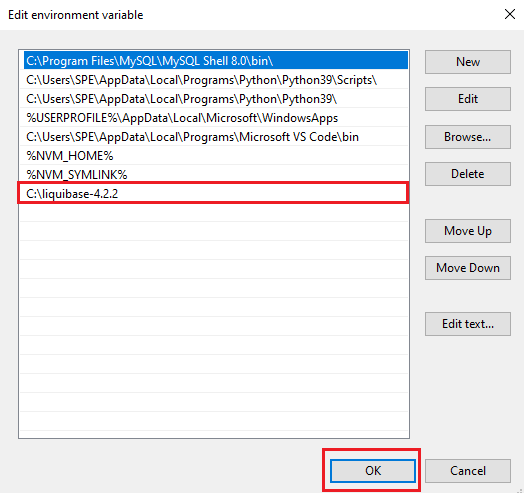
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**Step: 2**

**Graphical user interface, text, application, email

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**Step: 3**

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**Step: 4**

**Text

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Command For Check Liquibase : **liquibase status**

# Liquibase Functionality

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|  | * Structural * Columns, Tables, Views, Stored Procedures * Data Quality * Lookup Tables, Constraints, Sequences, Defaults * Referential Integrity * Foreign Keys, Primary Keys * Transformations * Insert, Update, Delete, Tag, Stop * Architectural * Indexes * Custom * Custom SQL, Modify SQL, Execution |

# Liquibase Example?

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|  | **Liquibase major concepts.**   * Changelog file * Changeset * Changes |

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|  | **Liquibase changelog file**  The root of all Liquibase changes is the database Changelog file.  <databaseChangeLog>  <changeSet id="1" ...>  ...  </changeSet>  <changeSet id="2" ...>  ...  </changeSet>  </databaseChangeLog>  It is possible to break up changelogs into multiple manageable pieces  <databaseChangeLog>  <include file="src/db/tables.xml"/>  <include file="src/db/views.xml"/>  <include file="src/db/data.xml"/>  ...  </databaseChangeLog> |

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|  | **Liquibase changeset**  Changeset is a group of changes.  Liquibase attempts to execute each changeset in a transaction that is committed at the end or rolled back if there is an error.  <databaseChangeLog>  <!-- id, author and current file name must be unique -->  <changeSet id="1" author=”sfesenko” >  <comment>Sample of changeset</comment> <!-- comment is optional -->  <change .. /> <!-- will be explained later -->  <!-- rollback is a changeset that must be executed in order to “cancel” current changeset -->  <rollback>  <change .. />  </rollback>  </changeSet>  </databaseChangeLog>  <changeSet id="1" author=”sfesenko” runAlways="true"> <!-- false by default -->  …  </changeset>  <changeSet id="2" author=”sfesenko” runOnChange="true"> <!-- false by default -->  …  </changeset>  <changeSet id="3" author=”sfesenko” failOnError="false"> <!-- true by default -->  …  </changeset> |

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|  | **Liquibase change**  Each changeset contains change which describes required modification of database.  It is possible to use DSL (recommended, dbms independent) or SQL for defining a change. |

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|  | **Liquibase Example:**  **liquibase.properties**  changeLogFile = dbchangelog.sql  url = jdbc:mysql://localhost:3306/myDatabase  username = root  password = Paras77@22  driver=com.mysql.jdbc.Driver  classpath = mysql-connector-java-5.1.49.jar  **dbchangelog.sql**  --liquibase formatted sql  create table PERSON (  ID int not null,  FNAME varchar(100) not null  );  --changeset Raj:40  insert into demo (id, name) values (10, 'joe');  insert into demo (id, name) values (20, 'John');  insert into demo (id, name) values (30, 'Tom');  -- DELETE Query  --changeset Bhautik:1  DELETE FROM demo WHERE id=10;  DELETE FROM demo WHERE id=20;  DELETE FROM demo WHERE id=30;  -- DROP TABLE Query  --changeset Bhautik:4  DROP TABLE person;  DROP TABLE test;  **dbchangelog.xml**  <?xml version="1.0" encoding="UTF-8"?>  <databaseChangeLog xmlns="http://www.liquibase.org/xml/ns/dbchangelog"  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"  xsi:schemaLocation="http://www.liquibase.org/xml/ns/dbchangelog  http://www.liquibase.org/xml/ns/dbchangelog/dbchangelog-3.8.xsd">  <changeSet id="1" author="bob">  <createTable tableName="department">  <column name="id" type="int">  <constraints primaryKey="true" nullable="false" />  </column>  <column name="name" type="varchar(50)">  <constraints nullable="false" />  </column>  <column name="active" type="boolean" defaultValueBoolean="true" />  </createTable>  </changeSet>  <changeSet id="2" author="Rahil">  <createTable tableName="Test">  <column name="id" type="int">  <constraints primaryKey="true" nullable="false" />  </column>  <column name="name" type="varchar(50)">  <constraints nullable="false" />  </column>  <column name="active" type="boolean" defaultValueBoolean="true" />  </createTable>  </changeSet>  </databaseChangeLog>  To check your database, open your database IDE to find the change that you made.  Notice that two tables were created along with test   * DATABASECHANGELOG * DATABASECHANGELOGLOCK   The **DATABASECHANGELOG** table contains a list of all the changes that have been run against the database.  The **DATABASECHANGELOGLOCK** table is used to make sure two machines don't attempt to modify the database at the same time. |

**Project Folder:**

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**liquibase.properties:**

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**dbchangelog.xml:**

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**dbchangelog.sql:**

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# How to run LiquiBase?

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|  | * Open CMD * Command **: liquibase update** |

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In mydatabase There is no any table but when run **liquibase update** command it will create four table.

Graphical user interface, text

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Graphical user interface, text, application

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Now it will Create four Table in mydatabase

# Reference Links

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|  | * **Liquibase Database Tutorials :**<https://docs.liquibase.com/workflows/database-setup-tutorials/home.html> * **Liquibase create Table Format Support::** <https://docs.liquibase.com/change-types/community/create-table.html> * **Liquibase Migrating with SQL**: <https://docs.liquibase.com/workflows/liquibase-community/migrate-with-sql.html> * **Liquibase Community Commands:** <https://docs.liquibase.com/commands/community/home.html> * **Liquibase Pro Commands:** <https://docs.liquibase.com/commands/pro/home.html> * **Using Liquibase with MySQL:** <https://docs.liquibase.com/workflows/database-setup-tutorials/mysql.html> * **Database migrations with multiple SQL files :** <https://docs.liquibase.com/workflows/liquibase-community/multiple-sql-migration.html> * **Youtube Useful Link:**  <https://www.youtube.com/watch?v=8AdiGIb2SY4> * **Youtube Useful Link:**  <https://www.youtube.com/watch?v=HdXcf9E8ZVI> * **Some useful Command** * liquibase update (direct run xml file command) * liquibase --changeLogFile=dbchangelog.sql update (**SQL File Run**) * liquibase --changeLogFile=dbchangelog.xml rollbackToDate 2020-12-22 11:18:23 * liquibase rollbackOneUpdate --deploymentId=2126881174 –force * liquibase rollbackOneUpdateSQL --deploymentId=068379006 (**RollBack Command**) * liquibase generateChangeLog |

**Thank You**

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