Steps to Migrate H2 database to Mysql database (Qualstra)

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Method 1 –

Import the Semi-automaticaly/Manually created Schema, Data and Constrains file to MYSQL

Method 2 –

Step 1 – Migrate Schema

Open Mysql Workbench and create a new database qualstra.

create database qualstra;

Change the Database configuration in application.properties (Database Name: qualstra)

spring.datasource.url=jdbc:mysql://localhost:3306/qualstra

spring.datasource.username={username}

spring.datasource.password={password}

spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver

Generate schema automatically using application.properties

spring.jpa.hibernate.ddl-auto= update

spring.jpa.generate-ddl=true

Change the conflicting table names and column names in the Application (Spring Boot) model classes.

Changes due to Reserved Keyword:

Reserved Keywords: RANK, KEY, DESC,

RANK Conflicts

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| --- | --- | --- |
| **TABLE NAME** | **CONFLICT** | **SOLUTION** |
| RANK | Table Name | Changed to TBL\_RANK |
| COMP\_RANK | Column Name | Changed to RANK\_CODE |
| COMP\_USER | Column Name | Changed to RANK\_CODE |
| USER | Column Name | Changed to RANK\_CODE |
| TBL\_MAST\_USER | Column Name | Changed to RANK\_CODE |

KEY Conflicts

|  |  |  |
| --- | --- | --- |
| TABLE NAME | CONFLICT | SOLUTION |
| PRIV | Column Name | KEY\_CODE |
| TBL\_TENANTCONFIG | Column Name | KEY\_CODE |

DESC Conflicts

|  |  |  |
| --- | --- | --- |
| **TABLE NAME** | **CONFLICT** | **SOLUTION** |
| ATTACHMENT | Column Name | Changed to DESCR |
| CHKLST | Column Name | Changed to DESCR |
| CHKLST\_INST | Column Name | Changed to DESCR |
| TBL\_RANK | Column Name | Changed to DESCR |
| ROLE | Column Name | Changed to DESCR |
| SECTION | Column Name | Changed to DESCR |
| TBL\_MOU | Column Name | Changed to DESCR |
| TBL\_MAST\_CHECKLIST\_SECTION | Column Name | Changed to DESCR |
| TBL\_TENANTCODE | Column Name | Changed to DESCR |
| TBL\_CHKLIST\_NONCONFORMANCES | Column Name | Changed to DESCR |
| TBL\_CHECKLIST\_SECTION | Column Name | Changed to DESCR |

|  |  |
| --- | --- |
|  | : Table is not in the Model Classes |

Change the UUID,UID, \_ID, \_UID To Binary(16). Add the following in yellow to @column in class files

Easy way is to run applicaton, export generated tables to dump.sql file and open it and search for binary(255). These columns in tables must be modified to binary(16) in the model class files.

Example,

@Column(name = "uuid", nullable = **false**, updatable = **false**, columnDefinition = "BINARY(16)")

Run the application. This will generate the tables with all the constrains. Go to mysql workbench and Server>Export Data and export database to .sql file.

Open the .sql file and go to CREATE TABLE `question`

Remove row

`filtr` varchar(500) DEFAULT NULL,

Add these rows in the last columns

`filtr` varchar(500) DEFAULT NULL,

`fltr` varchar(500) DEFAULT NULL,

go to CREATE TABLE `question\_inst`

Remove row

`fltr` varchar(500) DEFAULT NULL,

Add these rows in the last columns

`filtr` varchar(500) DEFAULT NULL,

`fltr` varchar(500) DEFAULT NULL,

Now reimport the .sql file.

Schema is ready

Step 2- Migrating data

Export h2 database to sql file

Open the command prompt and type the following commands

java -cp {h2 jar location} org.h2.tools.Script -url jdbc:h2:{db location }\psc -user psc -password psc123$ -script qualstra.sql

{h2 jar location- replace with your h2 jar location (.\Qualstra-2.0\application\src\main\resources\db\h2.jar)

{db location- replace with your db location (.\Qualstra-2.0\application\src\main\resources\db)

Remove Create and Alter statements

We need to remove the Create and Alter statements, we only need data.

Open the sql file in notepad++ use replace

Use Regex to remove all the create and alter statements. Replace with empty strings.

regex for create:

^CREATE .\*?;

regex for alter:

^ALTER .\*?;

Process the file with H2ToMySQLConverter program

Rename the file to process.sql and move the sql file to converter folder. Use java compile and run command

javac -cp commons-lang3-3.14.0.jar H2ToMySQLConverter.java

java -cp commons-lang3-3.14.0.jar;. H2ToMySQLConverter

It will create output.sql

Process the unprocessable things manually

QUESTION\_INST is not processed in program.

Lines containing STRINGDECODE must be removed from QUESTION\_INST Insert statements. Manually search using notepad++ and replace the lines containing STRINGDECODE after fixing it in Chat GPT

Now, open this output.sql file and run it in the mysql workbench.

Move Insert Statements (foreign key constrains)

Move the following tables INSERT query to the top (or foreign key error will be thrown)

CMPNY, SHIP, SECTION, SECTION\_INST, TBL\_RANK, USER, QUESTION, QUESTION\_INST

or remove all constrains and add them later

Remove the double Filter(Filtr/Fltr) from schema

After all data is inserted, remove the doubled column filter,

Run the following sql querries to remove doubled column in QUESTION

UPDATE question SET FLTR = NULL WHERE FLTR IS NOT NULL;

ALTER TABLE question DROP COLUMN FLTR;

Run the following sql querries to remove doubled column in QUESTION\_INST

UPDATE question\_inst SET FILTR = NULL WHERE FILTR IS NOT NULL;

ALTER TABLE question\_inst DROP COLUMN FILTR;

Other Information:

When exporting from Mysql workbench, go to advanced option and select Hexblob- dump binary using Hexadecimal (because we use binary for uuid)

H2 Table count: 54

Mysql Schema generated, Table count: 31

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **H2 Database** | **MYSQL Database** |  | **H2 Database** | **MYSQL Database** |
| ATTACHMENT | attachment |  | TBL\_CHECKLIST |  |
| CHKLST | chklst |  | TBL\_CHECKLIST\_ITEMS |  |
| CHKLST\_INST | chklst\_inst |  | TBL\_CHECKLIST\_SECTION |  |
| CHKLST\_SEC | chklst\_sec |  | TBL\_CHKLIST\_NONCONFORMANCES |  |
| CHKLST\_SEC\_INST | chklst\_sec\_inst |  | TBL\_COUNTRY |  |
| CMPNY | cmpny |  | TBL\_CURRENCY |  |
| COMP\_RANK | comp\_rank |  | TBL\_MAST\_CHECKLIST |  |
| COMP\_USER | comp\_user |  | TBL\_MAST\_CHECKLIST\_ITEM |  |
| COUNTRY | country |  | TBL\_MAST\_CHECKLIST\_SECTION |  |
| CURRENCY | currency |  | TBL\_MAST\_FLEET |  |
| EMPLOYEE |  |  | TBL\_MAST\_SHIPCOMPANY |  |
| FLEET | fleet |  | TBL\_MAST\_USER |  |
| FLEET\_SHIP | fleet\_ship |  | TBL\_MAST\_VESSEL |  |
| NON\_CONF | non\_conf |  | TBL\_MOU | tbl\_mou |
| PORT | port |  | TBL\_MOU\_COUNTRY |  |
| PRIV | priv |  | TBL\_SCHEDULE |  |
| QUESTION | question |  | TBL\_SEAPORT |  |
| QUESTION\_INST | question\_inst |  | TBL\_TENANTCODE |  |
| RANK | tbl\_rank |  | TBL\_TENANTCONFIG |  |
| ROLE | role |  | TBL\_TENANTREFERENCE |  |
| ROLE\_PRIV | role\_priv |  | TBL\_VESSEL\_DOCS |  |
| SECTION | section |  | TBL\_VOYAGE |  |
| SECTION\_INST | section\_inst |  | TEMPLATE | template |
| SEC\_QUE | sec\_que |  | USER | user |
| SEC\_QUE\_INST | sec\_que\_inst |  | USR\_PRIV | usr\_priv |
| SHIP | ship |  | USR\_ROLE | usr\_role |
| TBL\_ATTACHMENT |  |  | VOYAGE | voyage |
|  |  |  |  |  |
|  | : Table for which NO model is available |  | : Table for which NO model class is available And Contains Data in H2 database |  |
|  |  |  |