

Manipulating an Access database from Java without ODBC

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I want to manipulate a Microsoft Access database (.accdb or .mdb file) from my Java project. I don't want to use the JDBC-ODBC Bridge and the Access ODBC driver from Microsoft because:

- the JDBC-ODBC Bridge has been removed from Java SE 8 and is not supported (ref: [here](#)),
- the JDBC-ODBC Bridge does not work properly with the Access ODBC driver when text includes Unicode characters with code points above U+00FF (ref: [here](#)), so such a setup would not be able to handle characters such as Greek, Russian, Chinese, Arabic, etc.,
- the Access ODBC driver from Microsoft only works in Windows, and
- there are separate 32-bit and 64-bit versions of the Access Database Engine (and ODBC driver) which can be a nuisance for deployment.

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I have seen other answers mentioning a JDBC driver for Access databases named [UCanAccess](#). How can I set up my Java project to use this approach?

(Answers suggesting better ways of working with Access databases from Java would also be most welcome.)

[java](#) [eclipse](#) [ms-access](#) [netbeans-7](#) [ucanaccess](#)

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edited Sep 22 '15 at 14:37

asked Feb 22 '14 at 13:55



[Gord Thompson](#)

57.7k 8 50 100

Gord I would like to get in touch with you. Email address, is it possible? Cheers – [bonCodigo](#) Mar 18 '14 at 15:28

You can use jdbc odbc classes from jre7 also in jre8 - see stackoverflow.com/a/34617075/2110961 – [Frank M.](#) Jan 11 at 15:26

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1 Answer

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[UCanAccess](#) is a pure Java JDBC driver that allows us to read from and write to Access databases without using ODBC. It uses two other packages, [Jackcess](#) and [HSQLDB](#), to perform these tasks. The following is a brief overview of how to get it set up.

Option 1: Using Maven

If your project uses [Maven](#) you can simply include UCanAccess via the following coordinates:

groupId: net.sf.ucanaccess

artifactId: ucanaccess

Option 2: Manually adding the JARs to your project

As mentioned above, UCanAccess requires Jackcess and HSQLDB. Jackcess in turn has its own [dependencies](#). So to use UCanAccess you will need to include the following components:

[UCanAccess](#) (ucanaccess-x.x.x.jar)

[HSQLDB](#) (hsqldb.jar, version 2.2.5 or newer)

[Jackcess](#) (jackcess-2.x.x.jar)

[commons-lang](#) (commons-lang-2.6.jar, or newer 2.x version)

[commons-logging](#) (commons-logging-1.1.1.jar, or newer 1.x version)

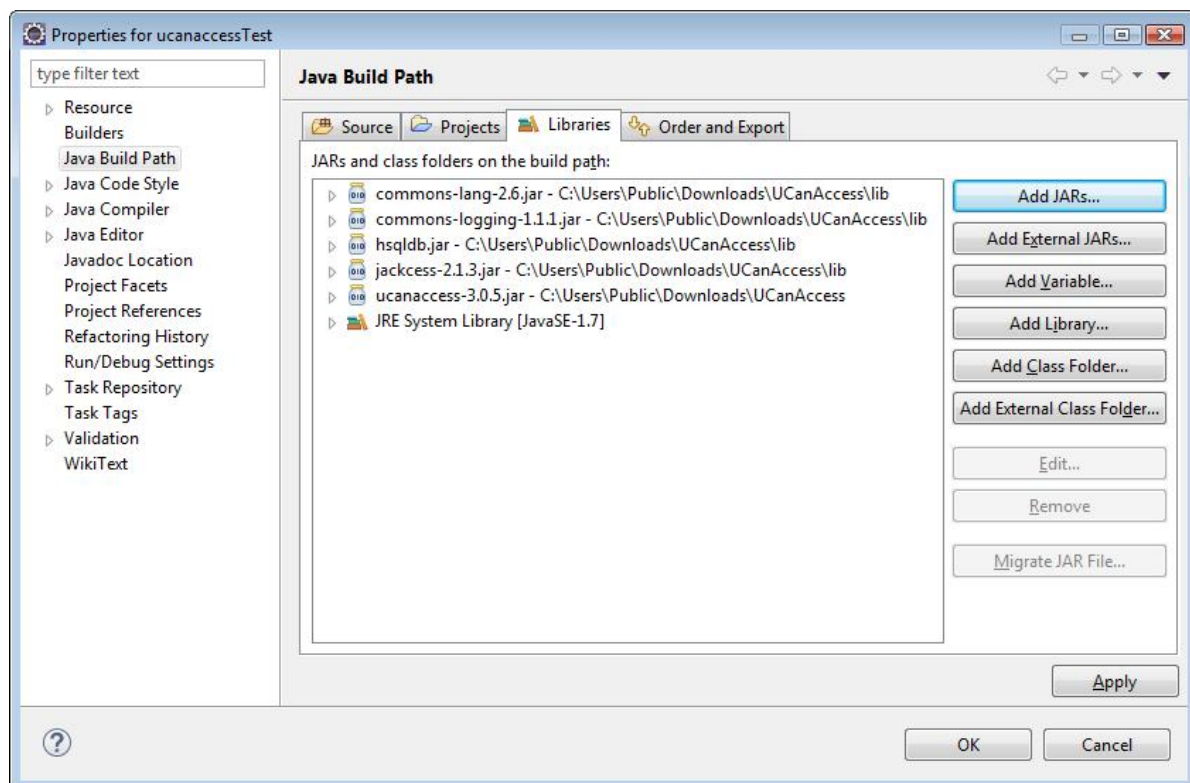
Fortunately, UCanAccess includes all of the required JAR files in its distribution file. When you unzip it you will see something like

```
ucanaccess-3.0.3.jar
/lib/
  commons-lang-2.6.jar
  commons-logging-1.1.1.jar
  hsqldb.jar
  jackcess-2.1.3.jar
```

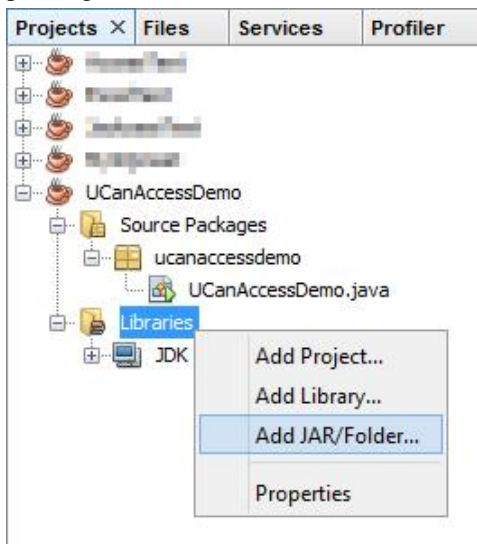
All you need to do is add all **five (5)** JARs to your project.

NOTE: Do **not** add loader/ucanload.jar to your build path if you are adding the other five (5) JAR files. The UcanloadDriver class is only used in special circumstances and requires a different setup. See the related answer [here](#) for details.

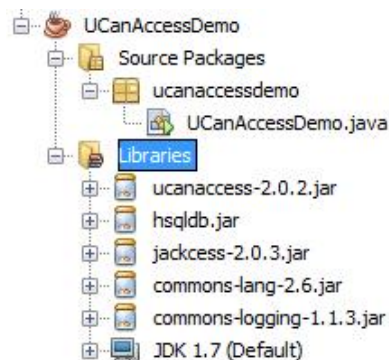
Eclipse: Right-click the project in Package Explorer and choose Build Path > Configure Build Path. . . . Click the "Add External JARs..." button to add each of the five (5) JARs. When you are finished your Java Build Path should look something like this



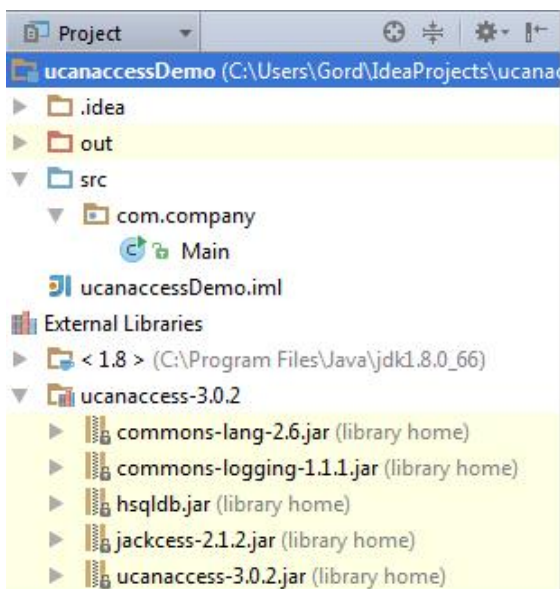
NetBeans: Expand the tree view for your project, right-click the "Libraries" folder and choose "Add JAR/Folder...", then browse to the JAR file.



After adding all five (5) JAR files the "Libraries" folder should look something like this:



IntelliJ IDEA: Choose `File > Project Structure...` from the main menu. In the "Libraries" pane click the "Add" (+) button and add the five (5) JAR files. Once that is done the project should look something like this:



That's it!

Now "U Can Access" data in .accdb and .mdb files using code like this

```
// assumes...
// import java.sql.*;
Connection conn=DriverManager.getConnection(
    "jdbc:ucanaccess://C:/__tmp/test/zzz.accdb");
Statement s = conn.createStatement();
```

```
ResultSet rs = s.executeQuery("SELECT [LastName] FROM [Clients]");
while (rs.next()) {
    System.out.println(rs.getString(1));
}
```

Disclosure

At the time of writing this Q&A I had no involvement in or affiliation with the UCanAccess project; I just used it. I have since become a contributor to the project.

share improve this answer

edited May 16 at 15:13

answered Feb 22 '14 at 13:55



[Gord Thompson](#)

57.7k 8 50 100

2 Do you have any affiliation with this library? Might be worth disclosing it if you do. – [Joe](#) Feb 22 '14 at 15:10

@Joe Thanks for the tip. I have updated my answer. – [Gord Thompson](#) Feb 22 '14 at 15:25

Can you use this to connect to an Excel Workbook (.xlsx) in Java 8? – [steinbitur](#) May 4 '14 at 13:54

2 @semsem The driver class is net.ucanaccess.jdbc.UcanaccessDriver – [Gord Thompson](#) Sep 26 '14 at 14:06

1 @GordThompson That is a great answer. My entire class was stuck with this issue believing it to be a file system privilege error. Helped me loads and it took a surprising amount of digging to realize Oracle done away with the JDBC-ODBC bridge from Java 8. – [wilbomc](#) Jan 22 '15 at 1:23

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rev 2016.11.22.4228