

ACCESS DB2

CS348 @ UWaterloo
Winter 2015



ACCOUNT SETUP



ACCOUNT INFORMATION

- You already have an CS student computing account
- You do **not** need an extra DB2 account/pwd
- You can install DB2 on your own machine, but we will **only** mark assignments in the university environment as given in this tutorial



HOST

- You should use the following host:
linux.student.cs.uwaterloo.ca
- Log on the server ([uid](#) is your user id)
[ssh uid@linux.student.cs.uwaterloo.ca](https://ssh.uid@linux.student.cs.uwaterloo.ca)
 - » Having a login problem? reset your account password:
<https://www.student.cs.uwaterloo.ca/password>



SET UP DB2

- You need to run a script to set environment vars, etc.
- Determine the shell before running the script
 - » Type `ps -p $$`
 - » The last column of the result is the shell being used
- If the shell is `cs` or `tcsh`, run:
`source ~cs348/public/db2cshrc`
- If it is `sh` or `bash`, run (note the dot):
`. ~cs348/public/db2profile`



SET UP DB2 CONT.

- You have to set up DB2 **every time** you log in the host, yet you can modify your profile to avoid it
- For csh or tcsh, add to the file **.cshrc**
`source ~cs348/public/db2cshrc`
- If sh or bash, add to the file **.profile**
`. ~cs348/public/db2profile`
- Put the command right after this comment:

```
## Set any other environment variables that are *always* needed here.  
## Variables used only by interactive programs should be set in the  
## interactive section, the last section in this file.
```



INTERACTIVE MODE



INTERACTIVE DB2

- Type **db2** and you are entering the interactive mode

```
linux024:~> db2
(c) Copyright IBM Corporation 1993,2007
Command Line Processor for DB2 Client 9.7.4

You can issue database manager commands and SQL statements from the command
prompt. For example:
  db2 => connect to sample
  db2 => bind sample.bnd

For general help, type: ?.
For command help, type: ? command, where command can be
the first few keywords of a database manager command. For example:
? CATALOG DATABASE for help on the CATALOG DATABASE command
? CATALOG           for help on all of the CATALOG commands.

To exit db2 interactive mode, type QUIT at the command prompt. Outside
interactive mode, all commands must be prefixed with 'db2'.
To list the current command option settings, type LIST COMMAND OPTIONS.

For more detailed help, refer to the Online Reference Manual.

db2 => |
```



INTERACTIVE DB2

- Always type your commands after **db2 =>**
- To connect to the database cs348, type **connect to cs348**

```
db2 => connect to cs348

Database Connection Information

Database server          = DB2/LINUX8664 9.7.4
SQL authorization ID    = J55WU
Local database alias    = CS348
```

- Create a table:
 - » CREATE TABLE student
(sid SMALLINT NOT NULL, name VARCHAR(25))



INTERACTIVE DB2

- List tables:

```
db2 => ? list tables
LIST TABLES [FOR {USER | ALL | SYSTEM | SCHEMA schema-name}] [SHOW DETAIL]
```

- » LIST TABLES
 - » LIST TABLES FOR SCHEMA j55wu
 - » LIST TABLES FOR SCHEMA CS348
- View table schema:
 - » DESCRIBE TABLE j55wu.student
 - Insert data:
 - » INSERT INTO j55wu.student VALUES (12, 'Jiewen Wu')



INTERACTIVE DB2

- Query data:
 - » `SELECT * FROM j55wu.student`
- Do **not** prefix table names in the assignments
- Exit the interactive mode
 - » Disconnect the database: `connect reset`
 - » Then: `quit`



SHELL MODE



SHELL MODE

- You can also use DB2 directly in UNIX Shell, note:
 - » Add **db2** before your commands
 - » **Double quotes** required for SQL queries

```
linux024:~> db2 connect to cs348

Database Connection Information

Database server          = DB2/LINUX8664 9.7.4
SQL authorization ID    = J55WU
Local database alias    = CS348

linux024:~> db2 "select * from j55wu.student"

SID      NAME
-----
      12 Jiewen Wu

1 record(s) selected.
```



LOAD SQL SCRIPTS

- You can type SQL commands in a file, and run the file using the shell mode: `db2 -f your file`
 - » You can also save output to files, e.g., `db2 -r out.txt`
 - » For the list of options, type in interactive mode: `db2=> ? options`



EDITING SQL SCRIPTS

- You can break SQL statements in several lines for readability
- Each line must end with the backslash '\', then immediately a line break (no space after the backslash)
- Example:

```
SELECT * \  
FROM j55wu.student
```



FYI: UPLOAD FILES

- Use scp
- Use FTP clients, e.g., WinSCP
- Odyssey:
<https://www.student.cs.uwaterloo.ca/odyssey-local>
- Nexus: <https://www.nexusmail.uwaterloo.ca>
click on File Manage; UW FTP server; enter the server
- ...

