IOT20-

9/4/2022-rechecked and it works, must use 64-bit ODBC drivers/connectors

Fall2022, for MIS342

Link Microsoft Access database on student laptop to mySQL on Raspberry Pi using 64-bit OBDC connection

Accomplished 7/11/2022

Start with RPiDex2.img and update as follows:

1. May need to go to Node-RED 2 (Dakota?)
2. Add phpMyAdmin
3. Create mySQL user/user and allow connections from ‘anyhost’ on the network,
4. Make sure students can connect to phpMyAdmin via RPi ipAddress
5. Diagram this out

The following is from Mis342/Project4 folder on eprofessor website:

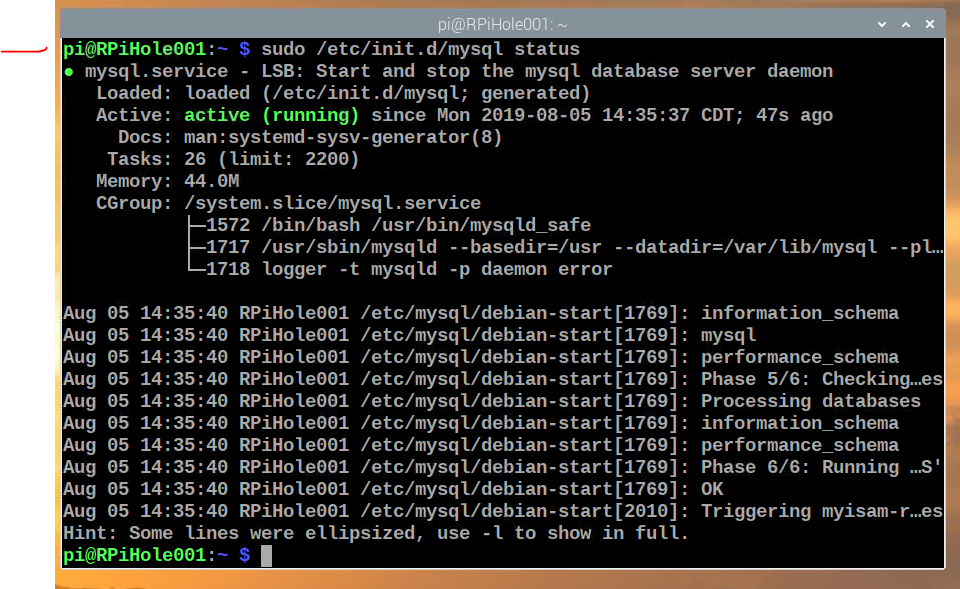
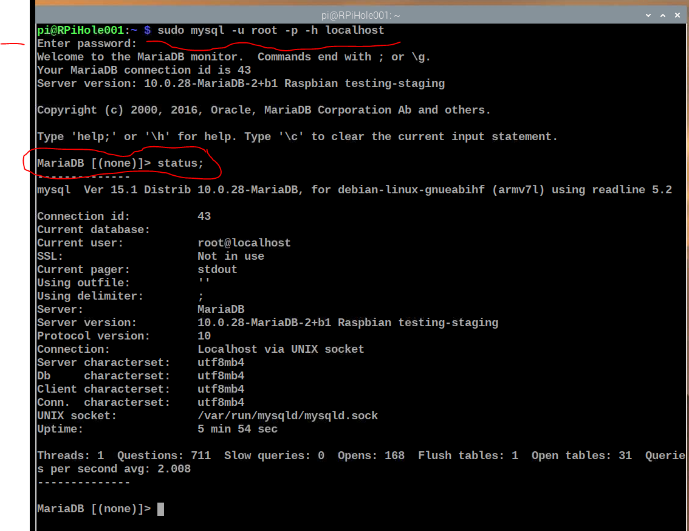
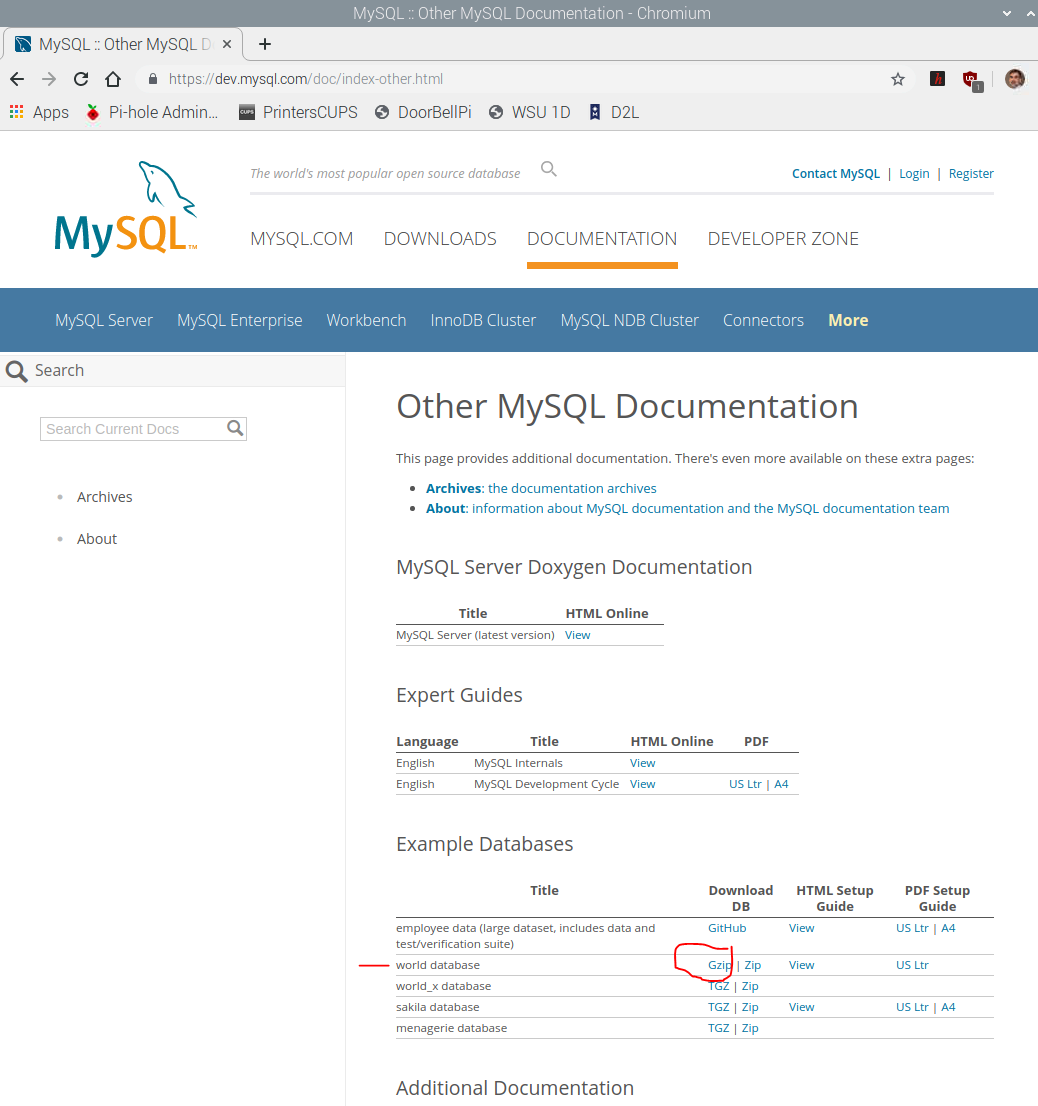
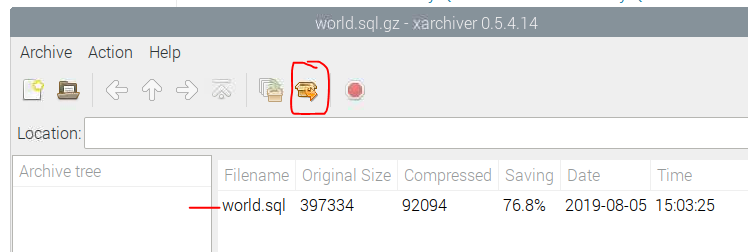
IOT20-MySQL dB and ODBC

In this IoT assignment you connect Microsoft Access running on your laptop to a MySQL/MariaDB server running on a Raspberry Pi.

**Internet of Things: Databases**

MySQL/MariaDB is already installed and running on a Raspberry Pi, see IOT10.

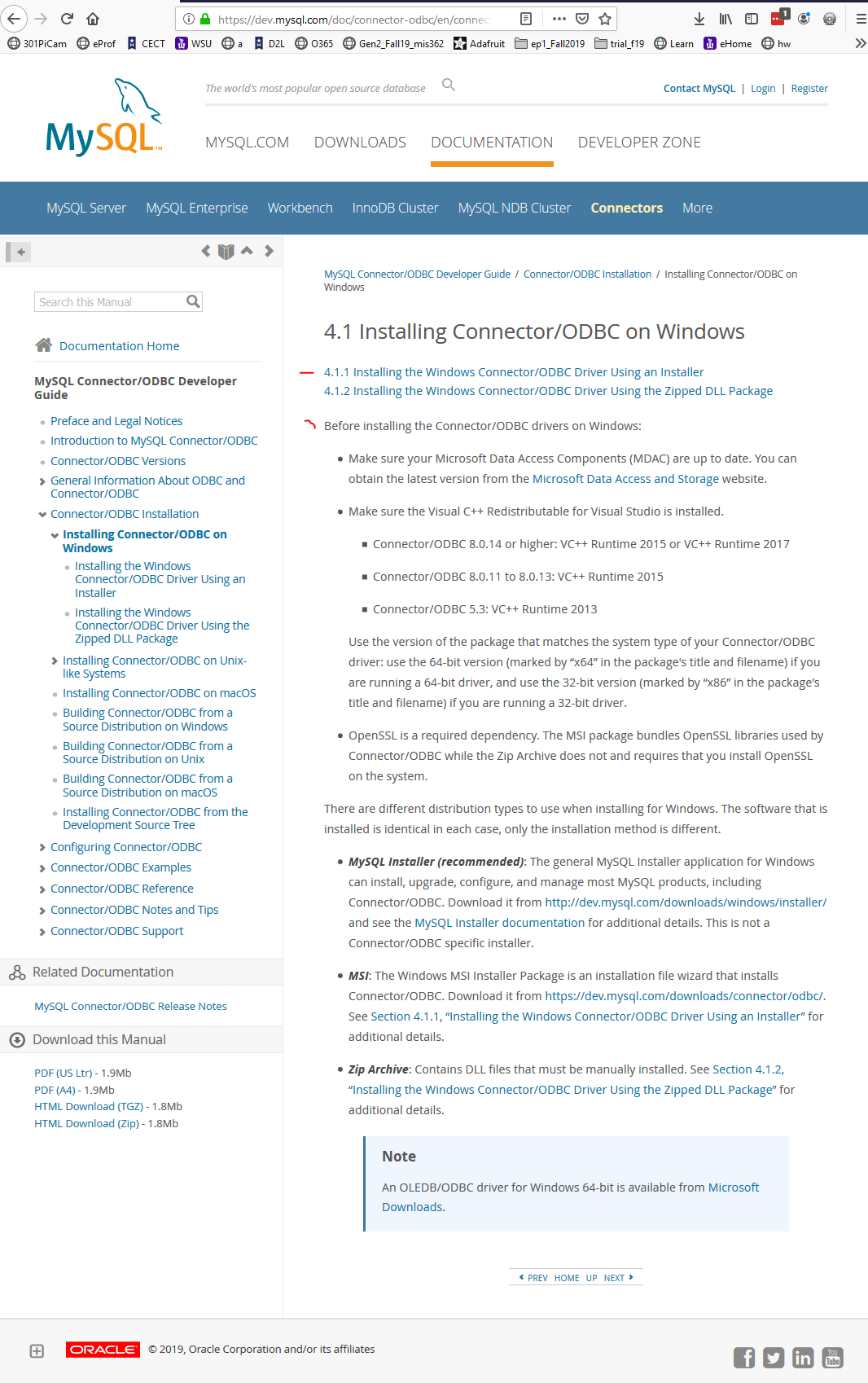
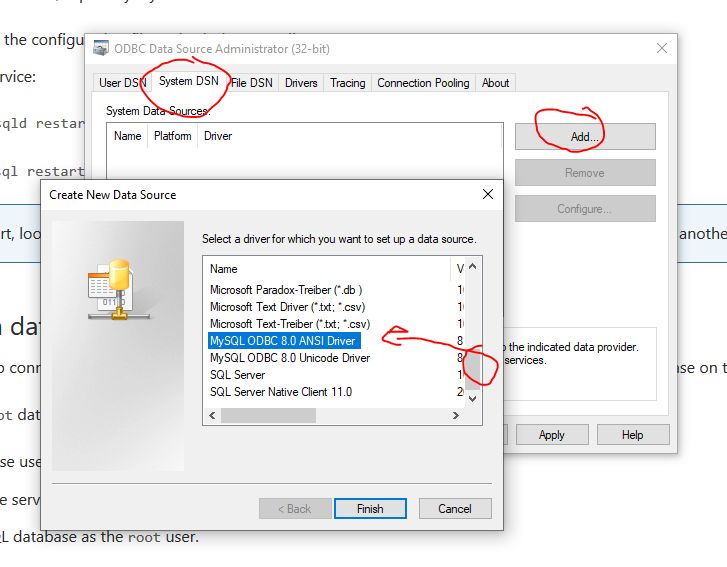
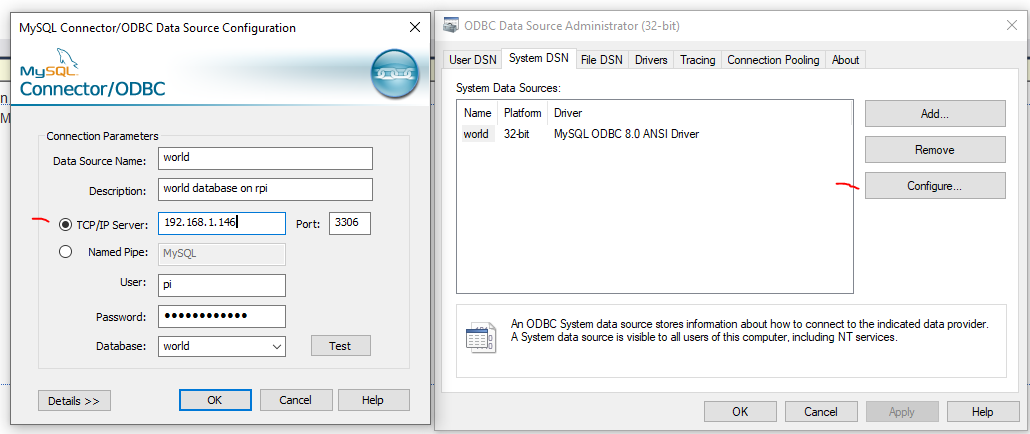
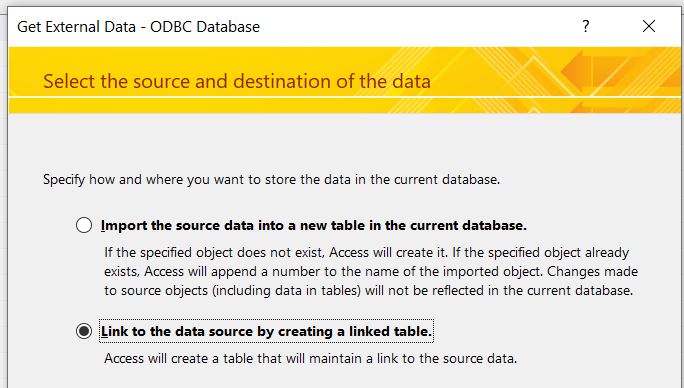
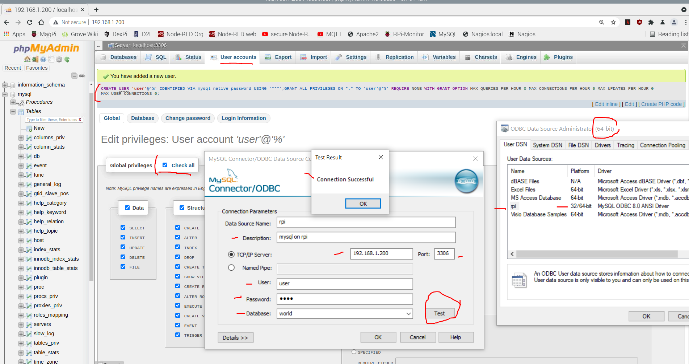
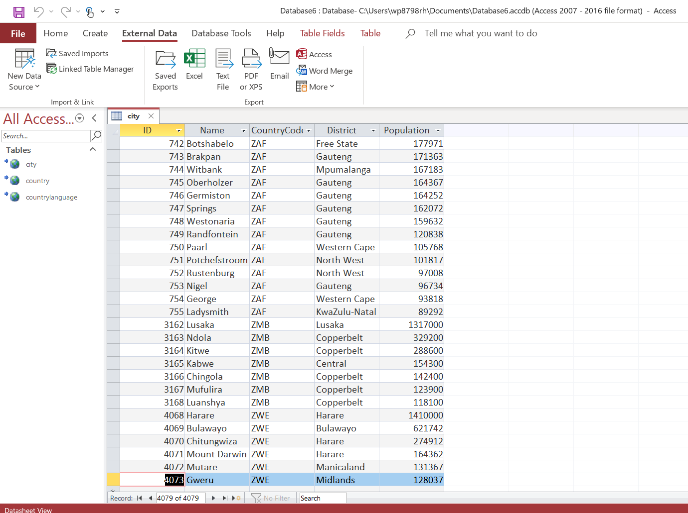
The instructions below are for reference.

1. Install MySQL
   1. Boot the Raspberry Pi, make sure you have Interenet access, open a terminal and type:  
      sudo apt install mariadb-server -y
   2. In a few minutes the installation will be complete.
   3. Once MySQL is installed, to verify it works, in the terminal type:  
      sudo /etc/init.d/mysql status  
      [](https://eprofessor.azurewebsites.net/MIS342/Project4/MySQLRunning.PNG)MySQL running successfully
   4. Log into the mysql installation, the default password is blank.  
      In the terminal window type:  
      sudo mysql -u root -p -h localhost  
      Press Enter when prompted for the password.  
      Type status to see mysql settings.  
      [](https://eprofessor.azurewebsites.net/MIS342/Project4/MySQL.PNG)MySQL status
   5. Install the world sample database by opening the Chromium browser on your RPi and typing the following into the address bar:  
      https://dev.mysql.com/doc/index-other.html  
      [](https://eprofessor.azurewebsites.net/MIS342/Project4/WorldDB_Gzip.PNG)Download World Database  
        
      Then click 'Gzip', which will download the world database to the  '/home/pi/Downloads' folder.
   6. Open the folder containing the downloaded file and double click it to extract it as 'world.sql' in the '/home/pi/Documents' folder.  
      [](https://eprofessor.azurewebsites.net/MIS342/Project4/ExtractWorld.PNG)Extract World Database
   7. Startup MariaDB/MySQL if it is not running, and type in:  
      Source /home/pi/Documents/world.sql/world.sql  
      Note: this path command is case-sensitive. Find the exact location using File Manager.  
      In a few minutes you have created the three tables in the world database.
   8. Run the show tables command, you should see three tables:  
      MariaDB [world]> show tables;  
      +-----------------+  
      | Tables\_in\_world |  
      +-----------------+  
      | city |  
      | country |  
      | countrylanguage |  
      +-----------------+  
      3 rows in set (0.001 sec)
   9. Experiment with commands you learned in Project 3:  
      SELECT COUNT(\*) FROM city;  
      SELECT \* FROM country;
   10. Congratulatons! Your IoT device is running a database server.  
       With a little more work, you can use this database to collect information from sensors attached to your Raspberry Pi.

**Connect With ODBC**

If 64-bit ODBC is not installed on your laptop, do so now.  
See [Project 2, Part 1](https://eprofessor.azurewebsites.net/MIS342/Project2/Project2.html)for details.

This exercise will show you how to connect to the MySQL database from another computer.

1. On your laptop use a browser and go to this url to install the appropriate version, making sure to follow the instructions carefully:  
   https://dev.mysql.com/doc/connector-odbc/en/connector-odbc-installation-binary-windows.html  
   [](https://eprofessor.azurewebsites.net/MIS342/Project4/ODBC_Installer.PNG)ODBC Installer  
   Note that you do not have to set up an account, just download and run the installer.  
     
   Use the 64 bit version of ODBC.and the 64 bit MySQL connector
2. Once installed, click Start, type in 'ODBC', find the 32 bit version and select 'Run as Administrator'
3. Under the System DSN tab, Add a new Data Source, using the MySQL ODBC 8 driver.  
   [](https://eprofessor.azurewebsites.net/MIS342/Project4/ODBC_SystemDSN.png)ODBC Installer
4. Set the following parameters to establish your connection, realizing your values will be different:  
   [](https://eprofessor.azurewebsites.net/MIS342/Project4/ODBC_setup.PNG)ODBC Setup
5. Create a new Microsoft Access Database.
6. Easier to do in PhpMyAdmin:    ref1: [Configure ODBC connector](https://dev.mysql.com/doc/connector-odbc/en/connector-odbc-configuration-dsn-windows-5-2.html)  
   1-allow any network connection, change config to 0.0.0.0  
   2-firewall changes, allow any connection: sudo iptables -A INPUT -p tcp --dport 3306 -j ACCEPT  
   ref: [grant remote access](https://phoenixnap.com/kb/mysql-remote-connection)  
   3-Grant access to specific user:  
   GRANT ALL PRIVILEGES ON world.\* TO root@�192.168.1.21� IDENTIFIED BY ��;  
   change username and password as required  
   ref: https://pimylifeup.com/raspberry-pi-phpmyadmin/ or use phpadmin: create user: pi  
   set password= phpmysql  
   log into mysql and create new user: GRANT ALL PRIVILEGES ON \*.\* TO 'pi'@'localhost' IDENTIFIED BY 'phpmysql' WITH GRANT OPTION;
7. ref2: [Connect Access to MySQL](https://dev.mysql.com/doc/connector-odbc/en/connector-odbc-examples-tools-with-access-linked-tables.html)
8. From the menu choose External Data>New Data Source> From Other Sources>ODBC Database: and complete the steps to setup the connection to the World database on the Raspberry Pi:  
   [](https://eprofessor.azurewebsites.net/MIS342/Project4/AccessToMySqlODBC.JPG)ODBC connection
9. use php my admin, create user/user, connnect success!  
   [](https://eprofessor.azurewebsites.net/MIS342/Project4/odbcSuccess.PNG)setup connector
10. finally got it to work, 64 bit ODBC connection:  
    [](https://eprofessor.azurewebsites.net/MIS342/Project4/AccessMysql.PNG)Access linked to MySQL on Raspberry Pi!

**Make screen shots of the MySql installation and upload to the D2L Project04 Assignment folder**.