Get Virtual Machine Image

Log in to department PC and go to get the file `[Y:\Tutorials\vm_image\VM_XP_db2.7z]`. It is recommended to extract the zipped file to the `[D:\]` drive. (*Don't extract the file to the **Desktop**, the [Desktop] is actually on Department's servers.*)

Simply click open the zipped file and, drag the folder `[VM_XP_db2]` from `[7-Zip File Manager]` and drop it to the D-drive.

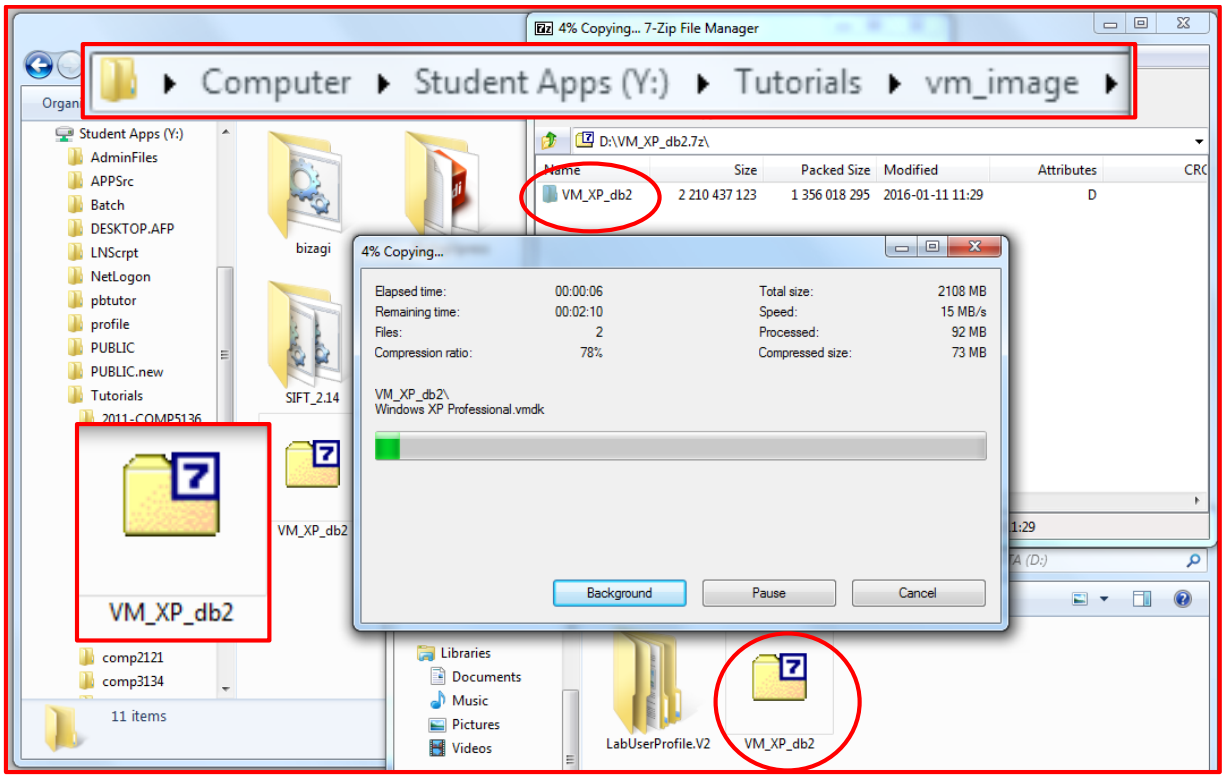


Figure 1 - Image file being downloaded and extractred

Use the Application – Vmware Workstation 12 Player

Either click the icon on Desktop or from `[Start]` → `[Program]` → `[VMware]` → `[VMware Workstation 12 Player]` to start the application.

Before the application can be used, there are questions must be answered. First an email address is required to enter as the following diagram, Figure 2.

In addition, do not update the software. Simply click the button `[Remind Me Later]`.

Once VMware starts, on the right hand side, choose `[Open a Virtual Machine]` as shown in Figure 3, and then, locate the image file which has been extracted to the D-drive.

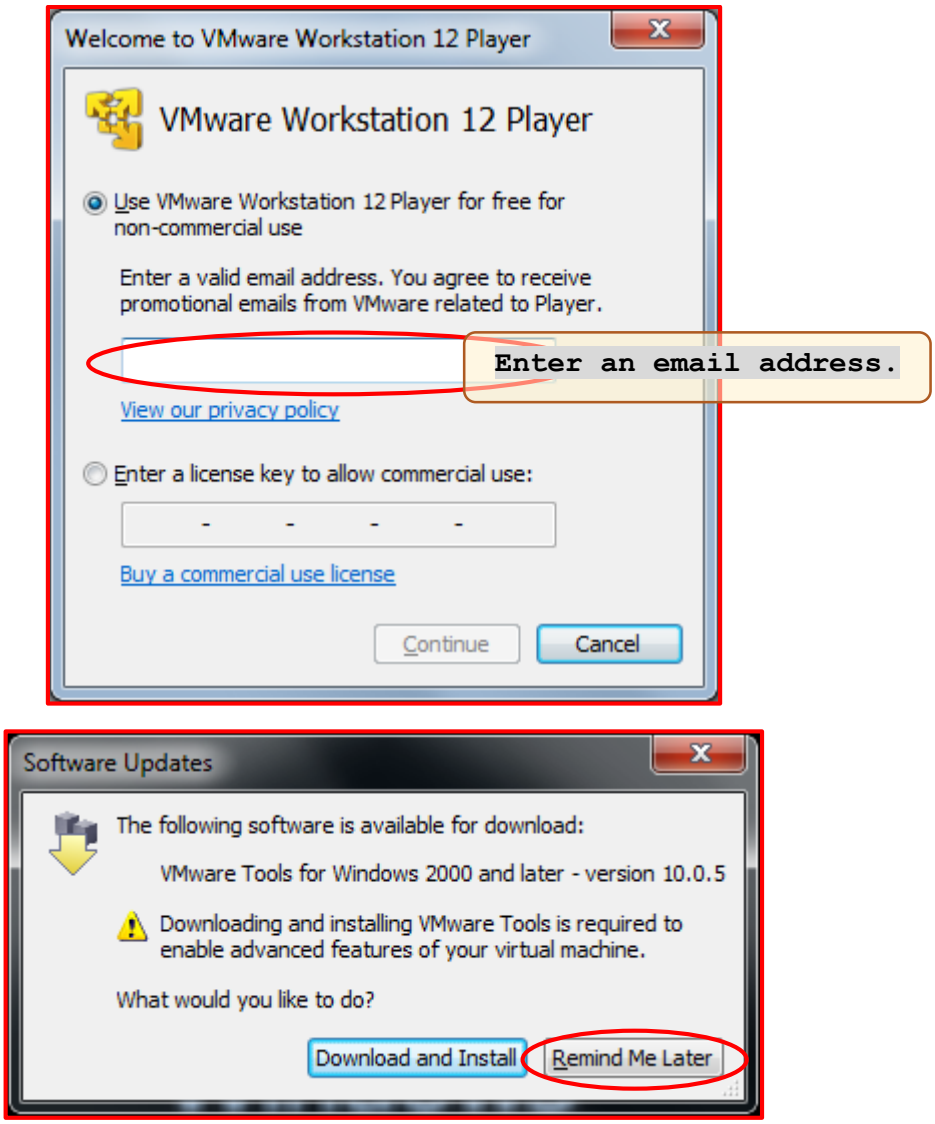


Figure 2 – Answer the prompted questions to start VMware

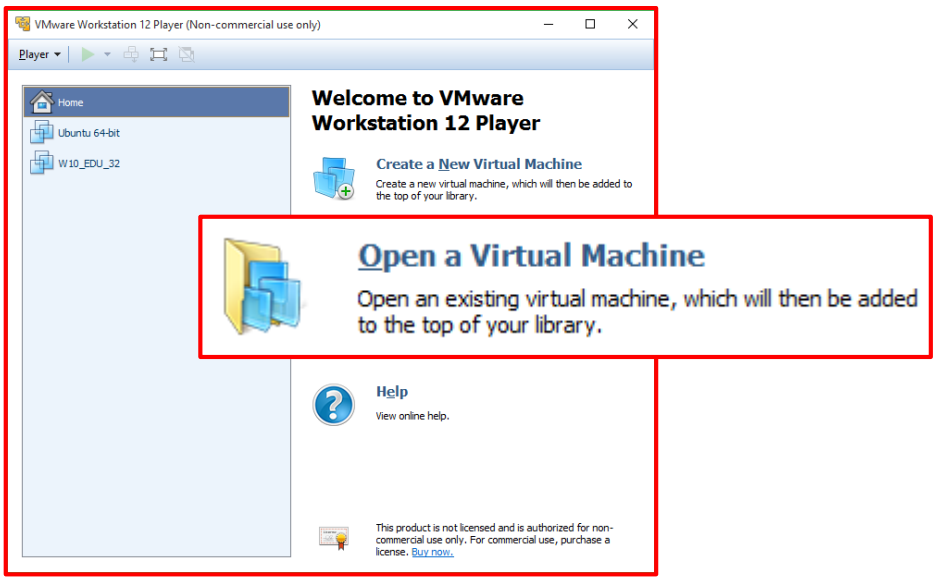


Figure 3 – Application interface of VMware Workstation 12 Player

As the Windows XP starts, use `[File Explorer]` to go to `[C:\comp5323]` and check that there are two files. One is `[db2exc_972_WIN_x86.exe]` and the other one is `[parts.xml]` (see Figure 4). The first one is the installation file of the DB2.

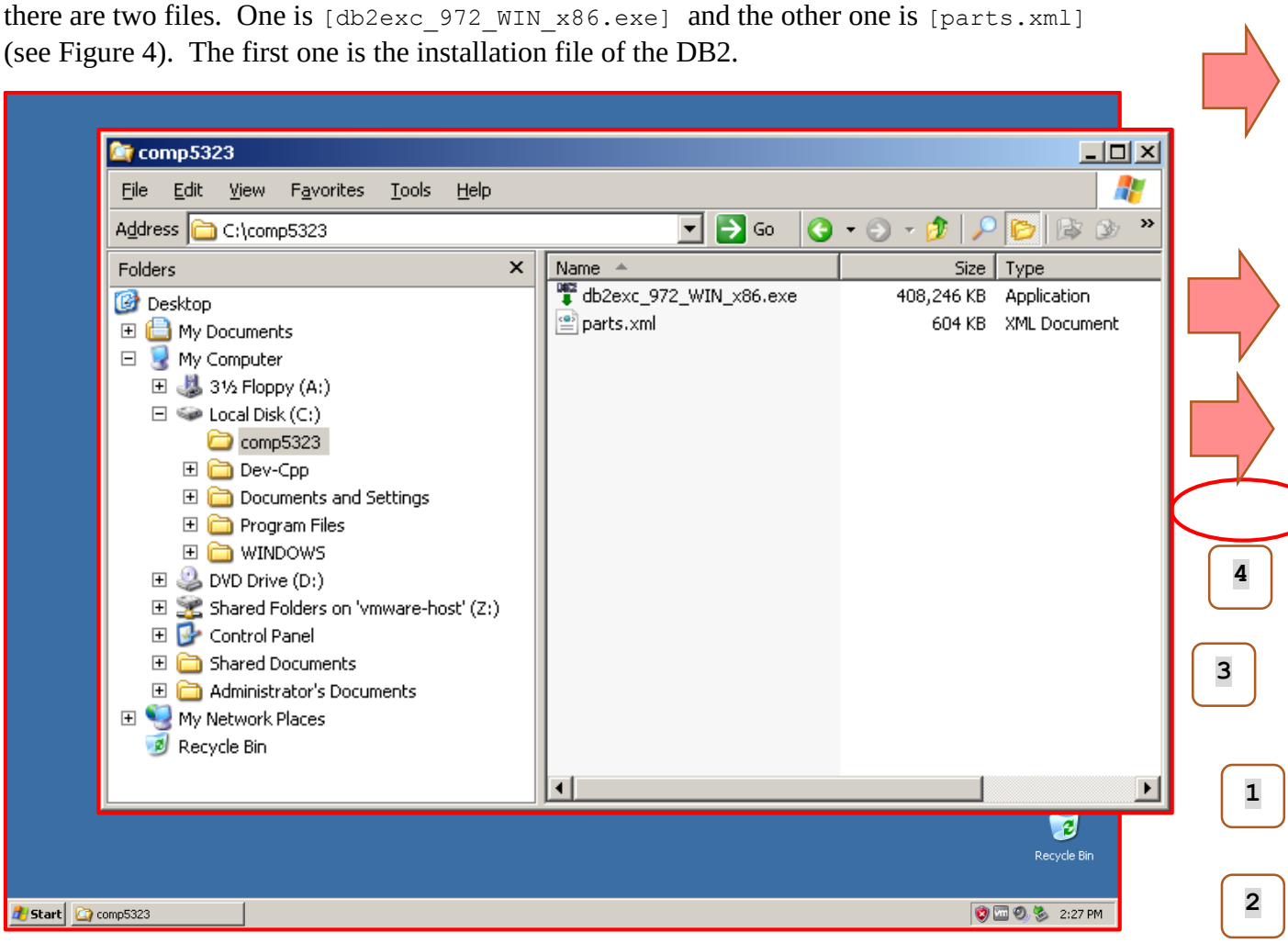


Figure 4 - Locate installation file of DB2

Simple double clicks the installation file and the following dialogue box appears. Click `[Setup]` button.

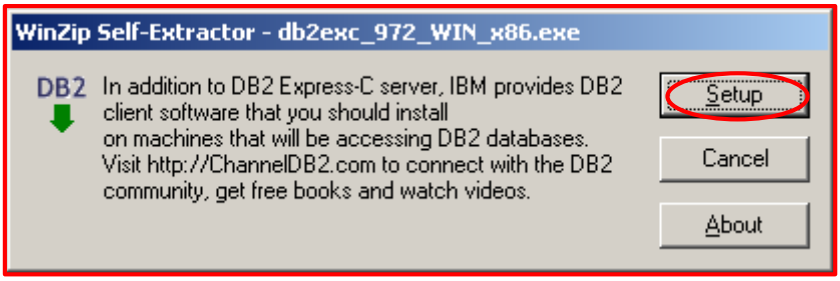


Figure 5 - Start the installation

After files have been extracted, the `[DB2 Setup Launchpad]` can be seen (*as shown below*). Simply choose `[Install a Product]` on the left panel. Then, on the right hand side, press the button `[Install New]`. The installation should start properly.

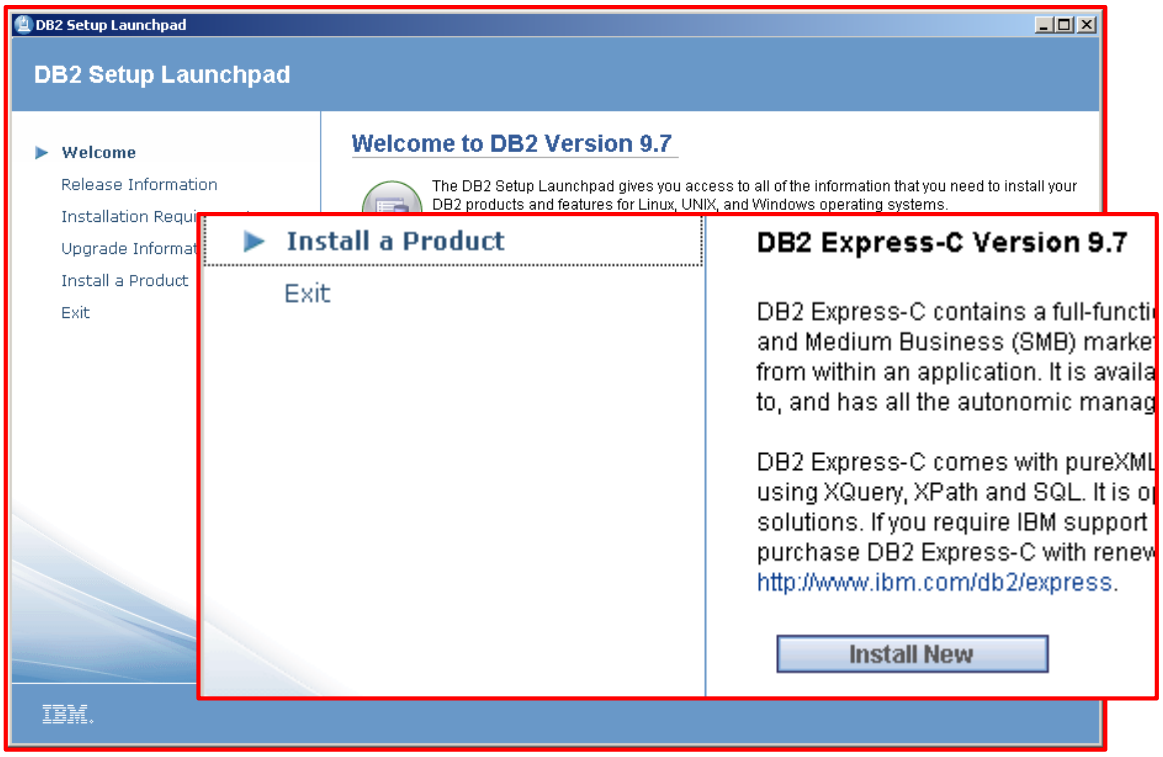


Figure 6 – DB2 Setup Launchpad

Click `[Next]` to start the setup.

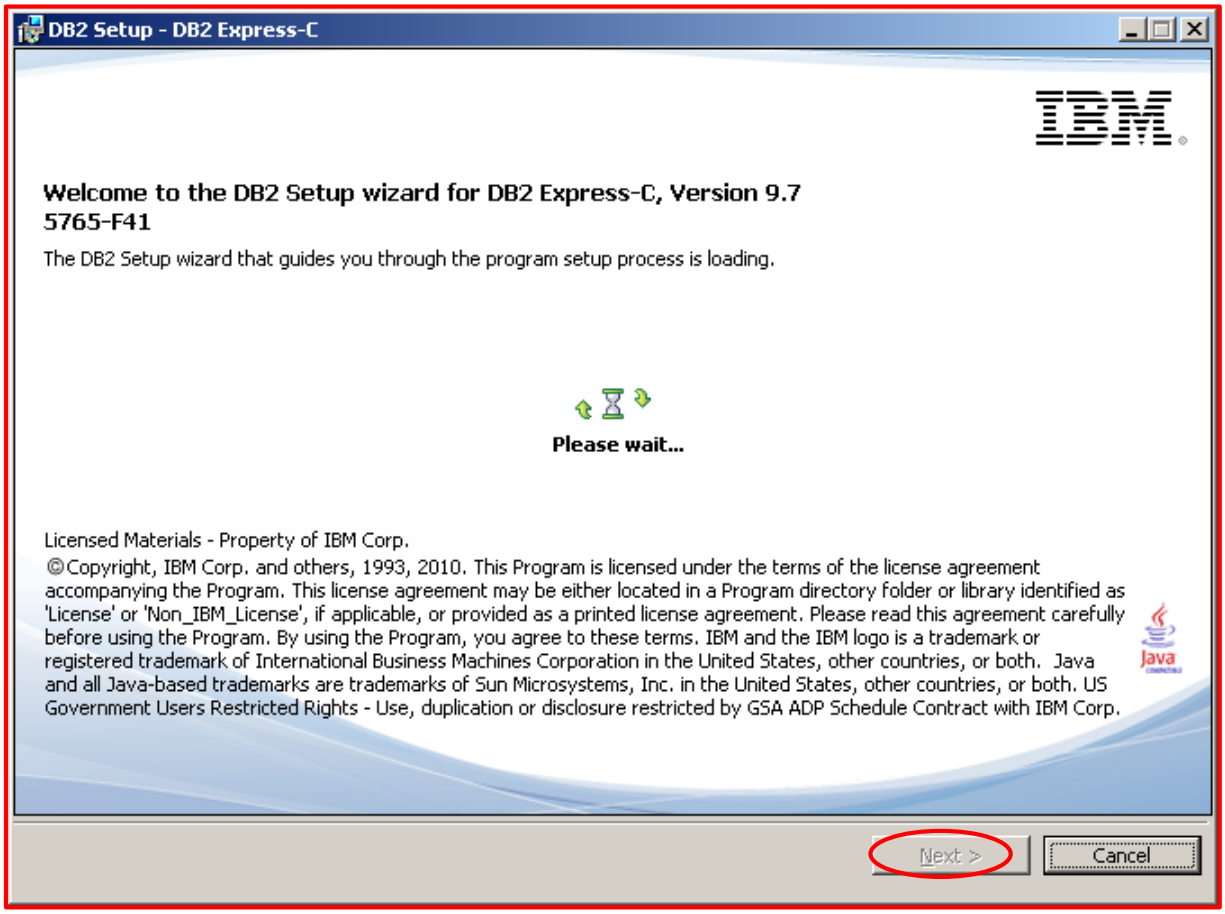


Figure 7 - Installation start

Select the option `[I accept the terms in the license agreement]` and click `[Next]`.

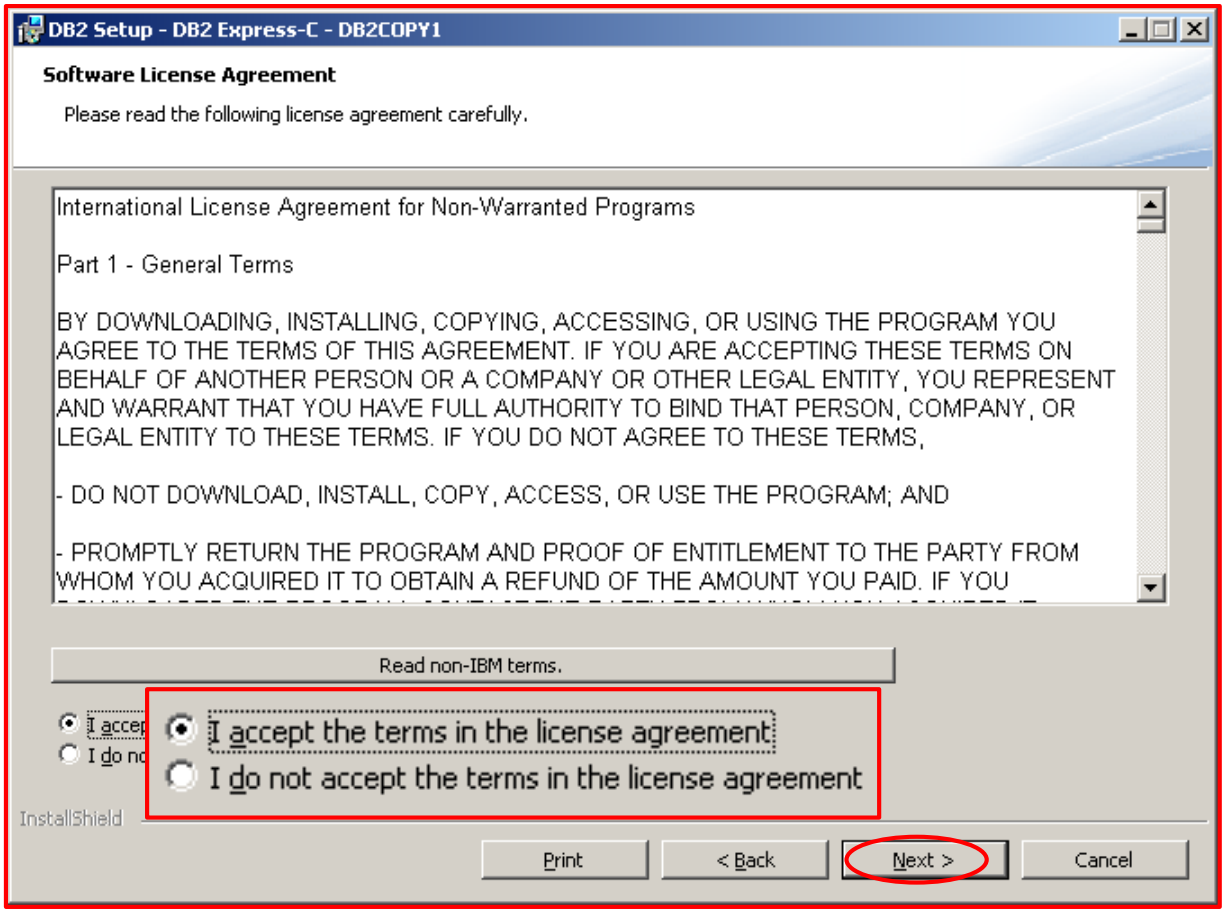


Figure 8 - DB2 License Agreement

Simply follow the instructions to click `[Next]` button for three times.

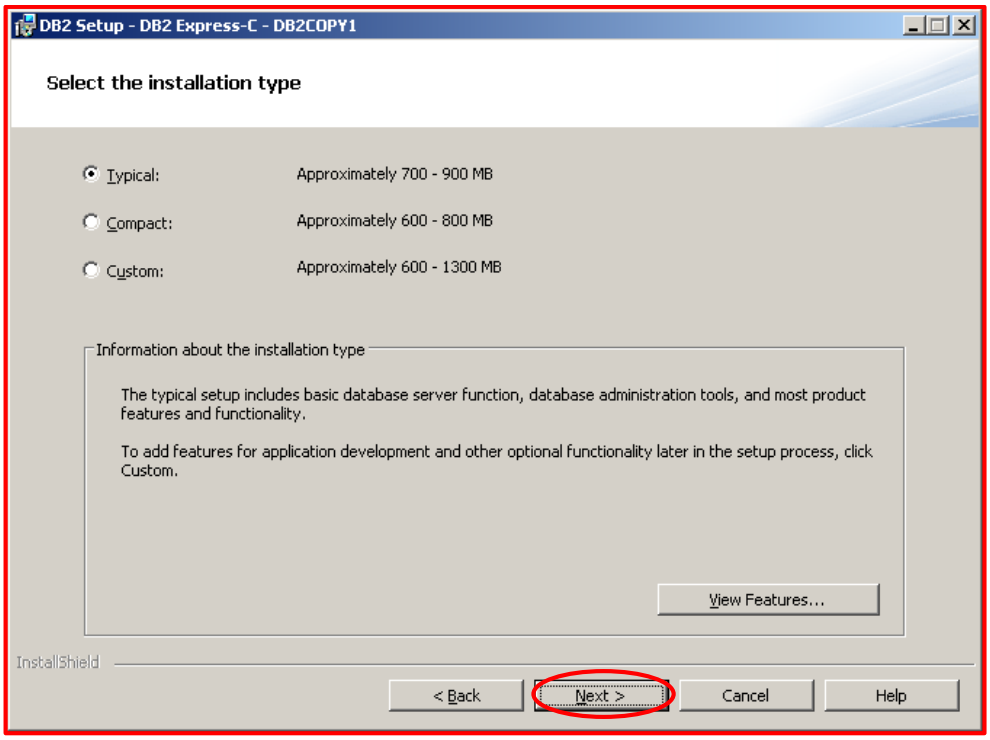


Figure 9 - First [Next]

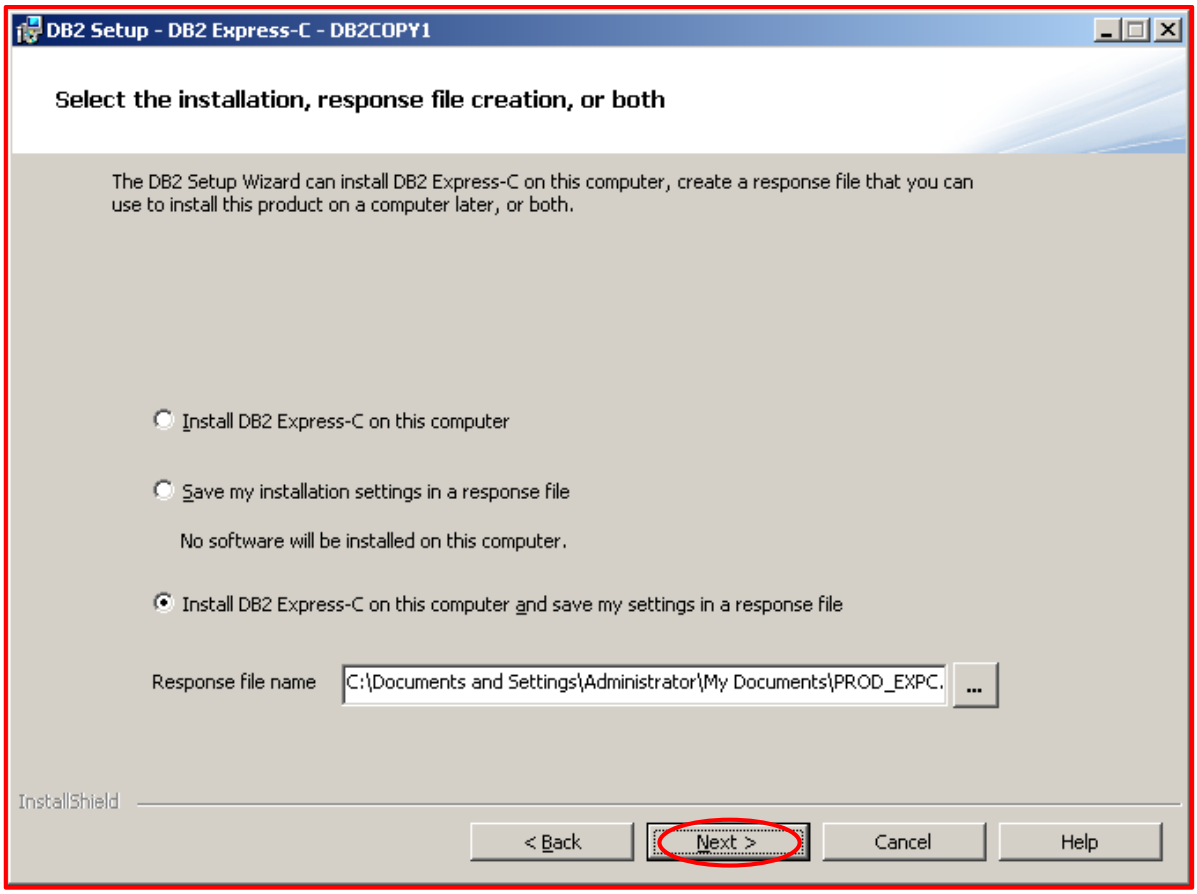


Figure 10 - Second [Next]

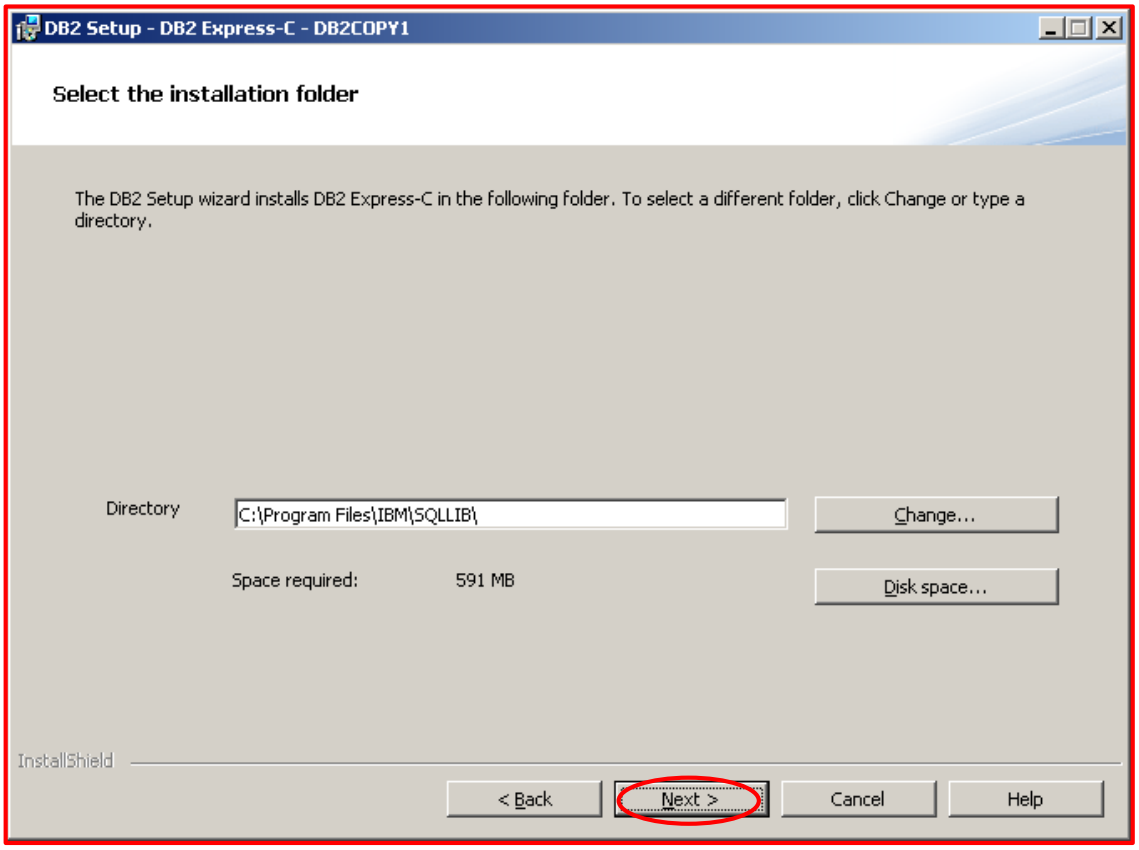


Figure 11 - Third [Next]

The default user of DB2 is `[db2admin]`, simply set the password as the user id, i.e. `[db2admin]`. Click `[Next]` for two more times.

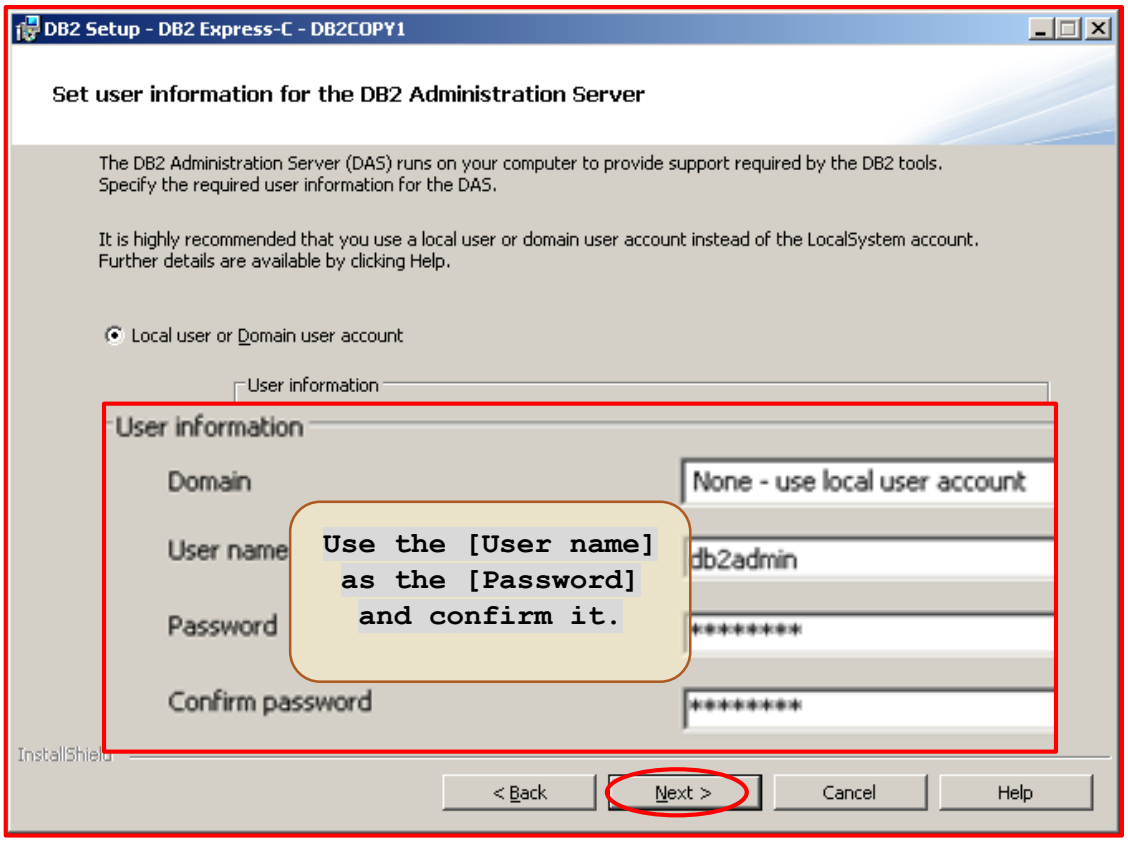


Figure 12 - Setup user

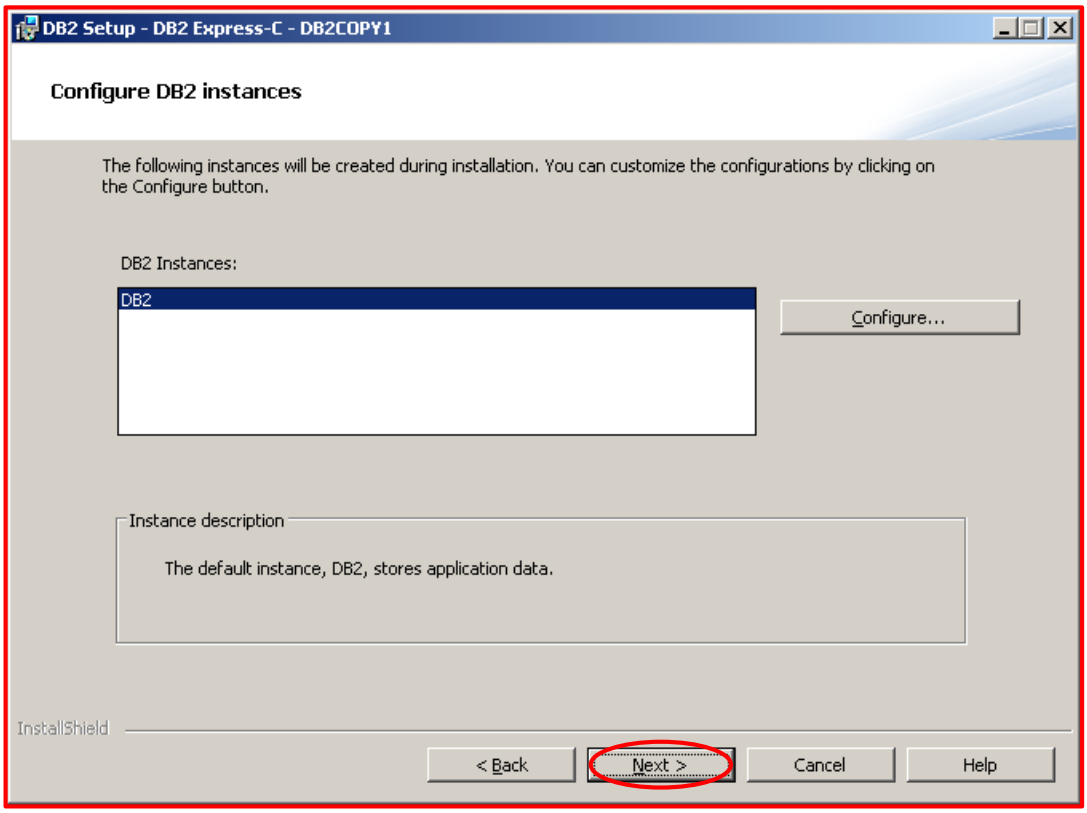


Figure 13 - Click [Next]

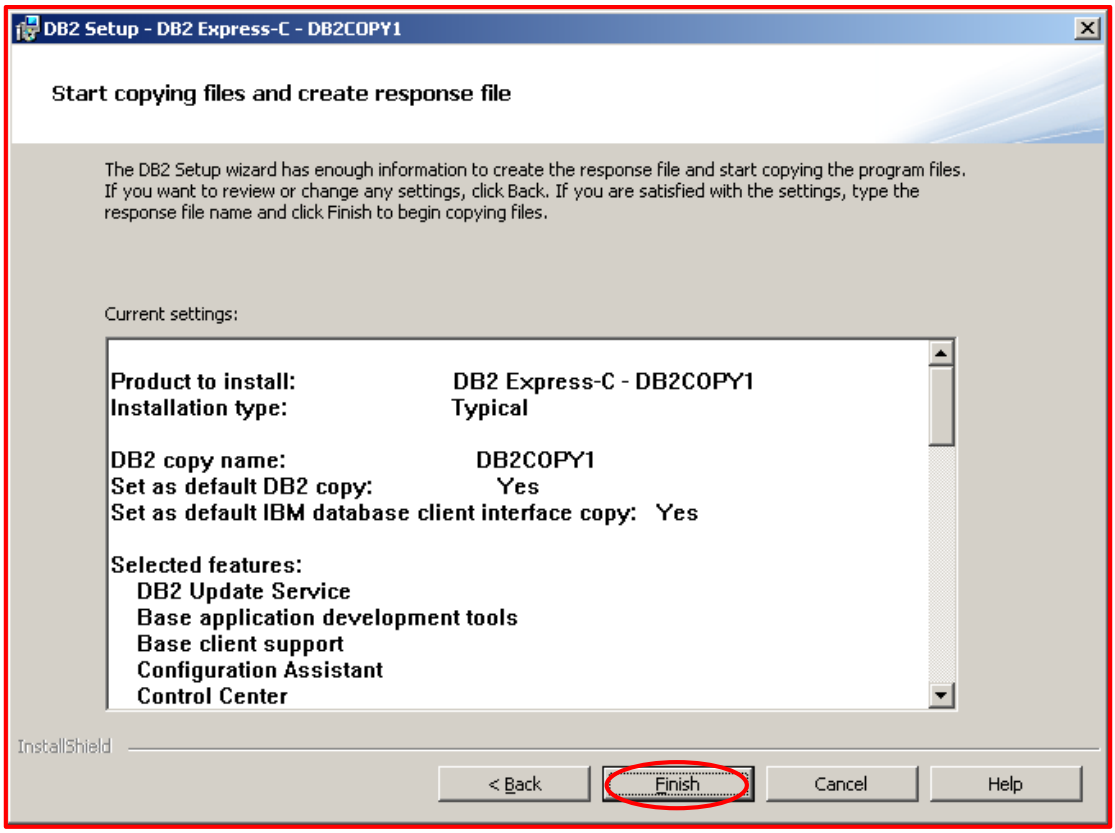
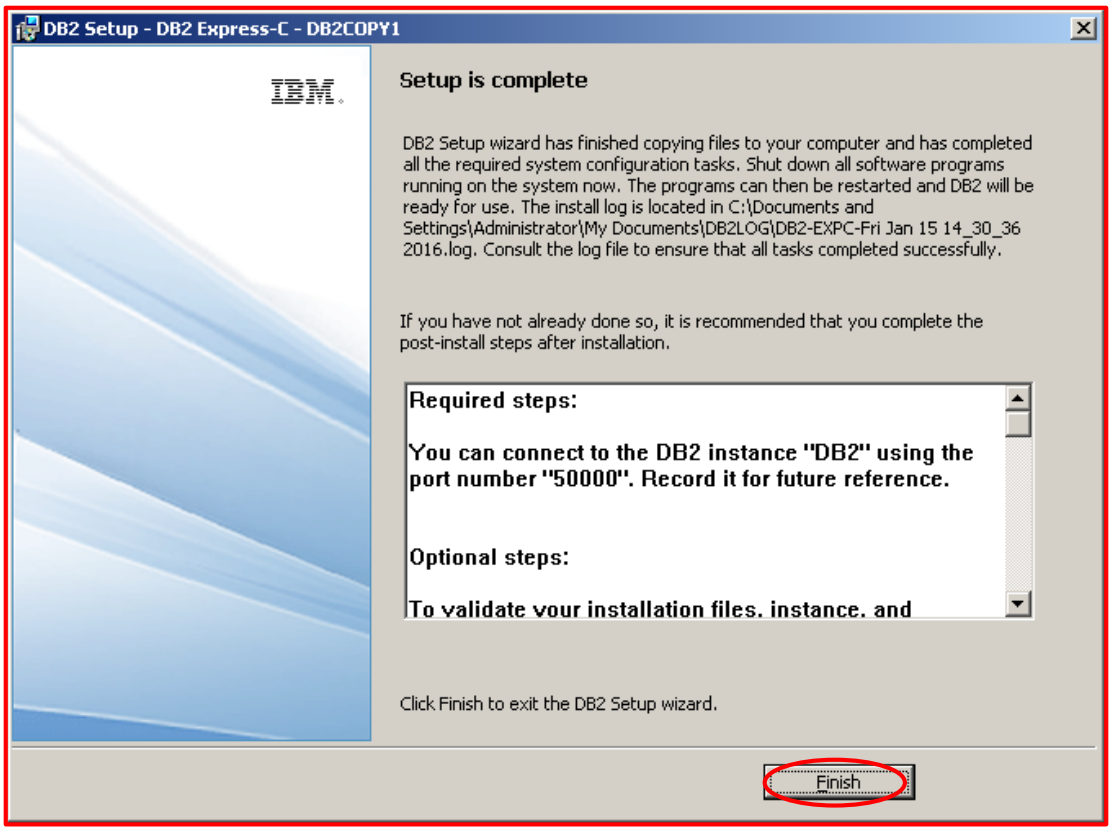


Figure 14 - Click [Finish]



bFigure 15 - Click [Finish]

DB2 is ready now. A new database could be created immediately by pressing the button `[Create new database]`. It is suggested to log out the `[Administrator]` and log in with the new created user `[db2admin]`.

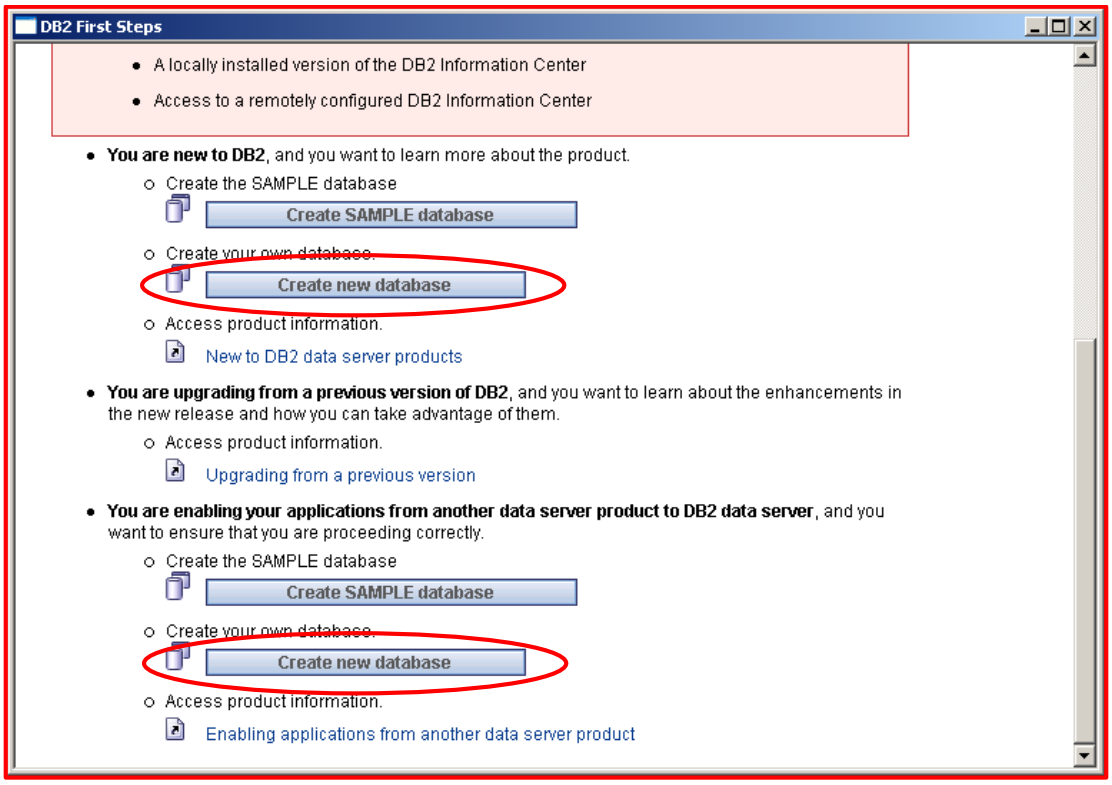


Figure 16 - Click [

Or launch the `[DB2 Control Center]` which can be found either on the `[taskbar]` or from the `[Start]` → `[Programs]` → `[IBM DB2]` → `[DB2COPY1 (Default)]` → `[General Administration Tools]` → `[Control Center]`.

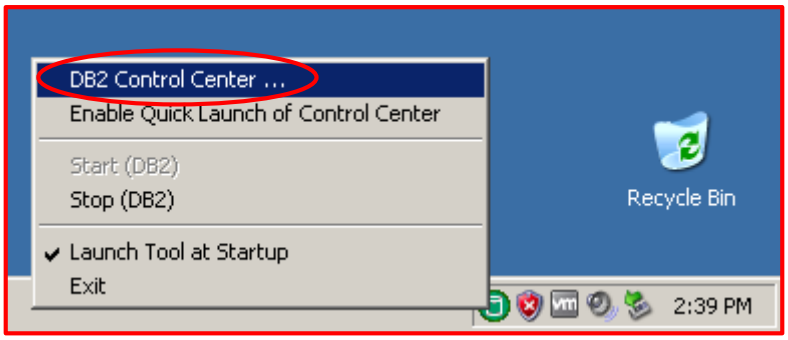


Figure 17 - DB2 Control Center ... on Taskbar

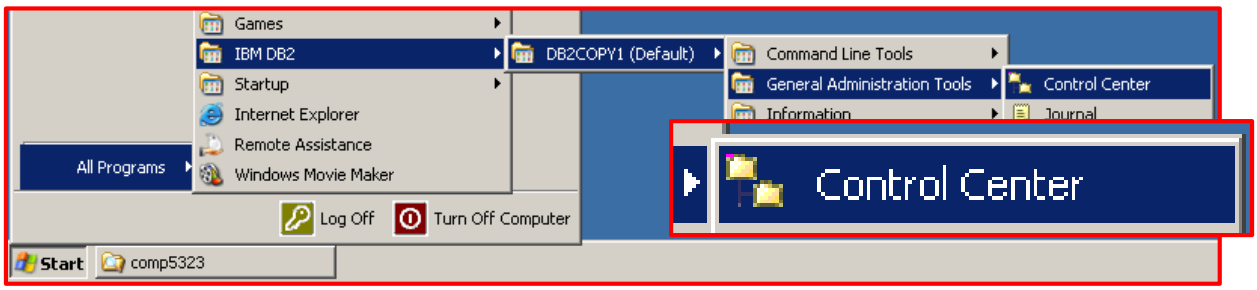


Figure 18 - Control Center on [Start] menu

Click [OK] to close the [Control Center View] box.

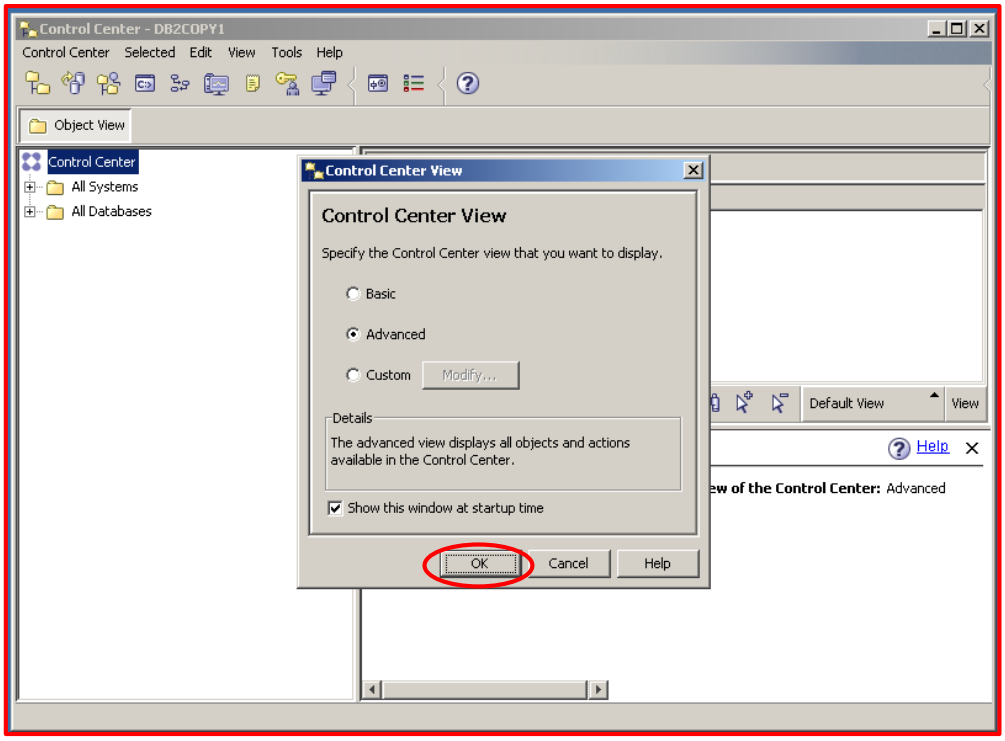


Figure 19 – DB2 Control Center

To create database, either highlight the [All Databases] on left hand side and right click. Then select [Create Database] → [Standard…] or simply click the link [Create New Database] on right bottom part.

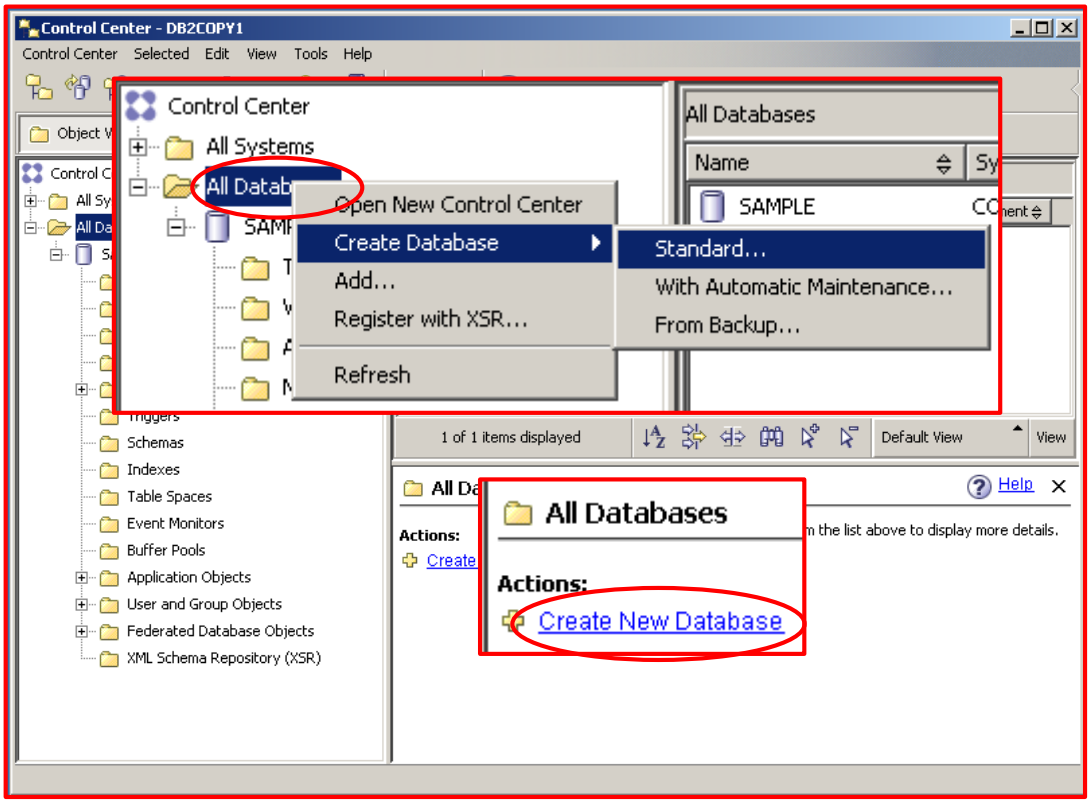


Figure 20 - Create a new database

Name the new database as `[lab5323]`. And set the `[Default path]` to `[C:\]`. Then, click `[Finish]`.

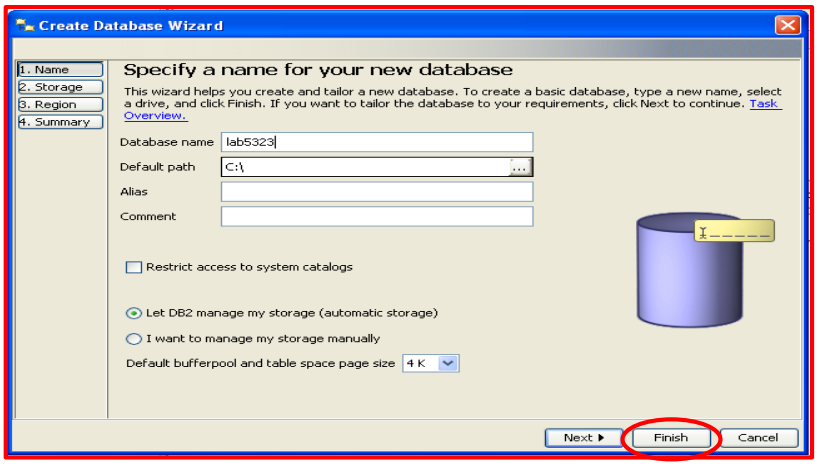


Figure 21 - Name and locate the new database

If there is no problem, the database will be created (*as shown below*) successfully after a few seconds.

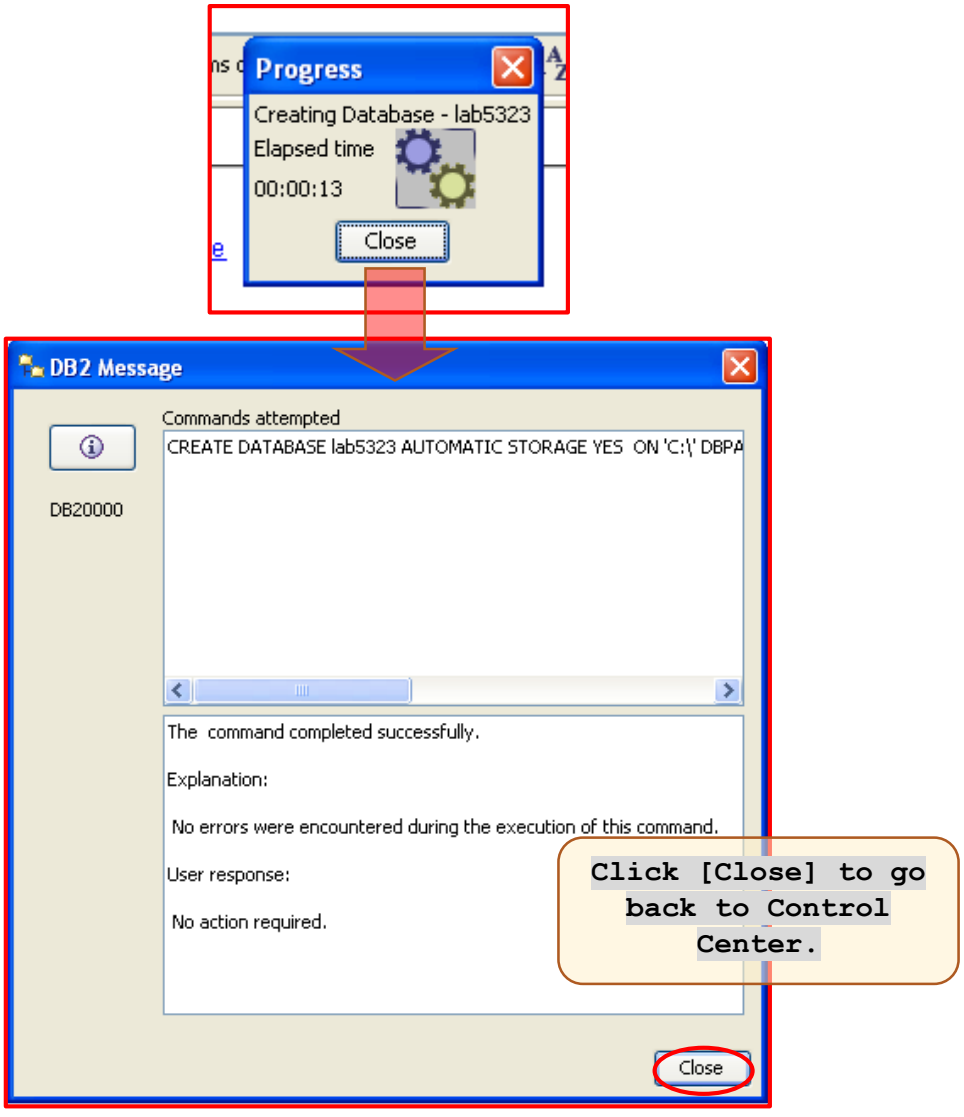


Figure 22 - New database is created successfully

From the `[Control Center]`, the new database `[LAB5323]` is on the branch, see below.

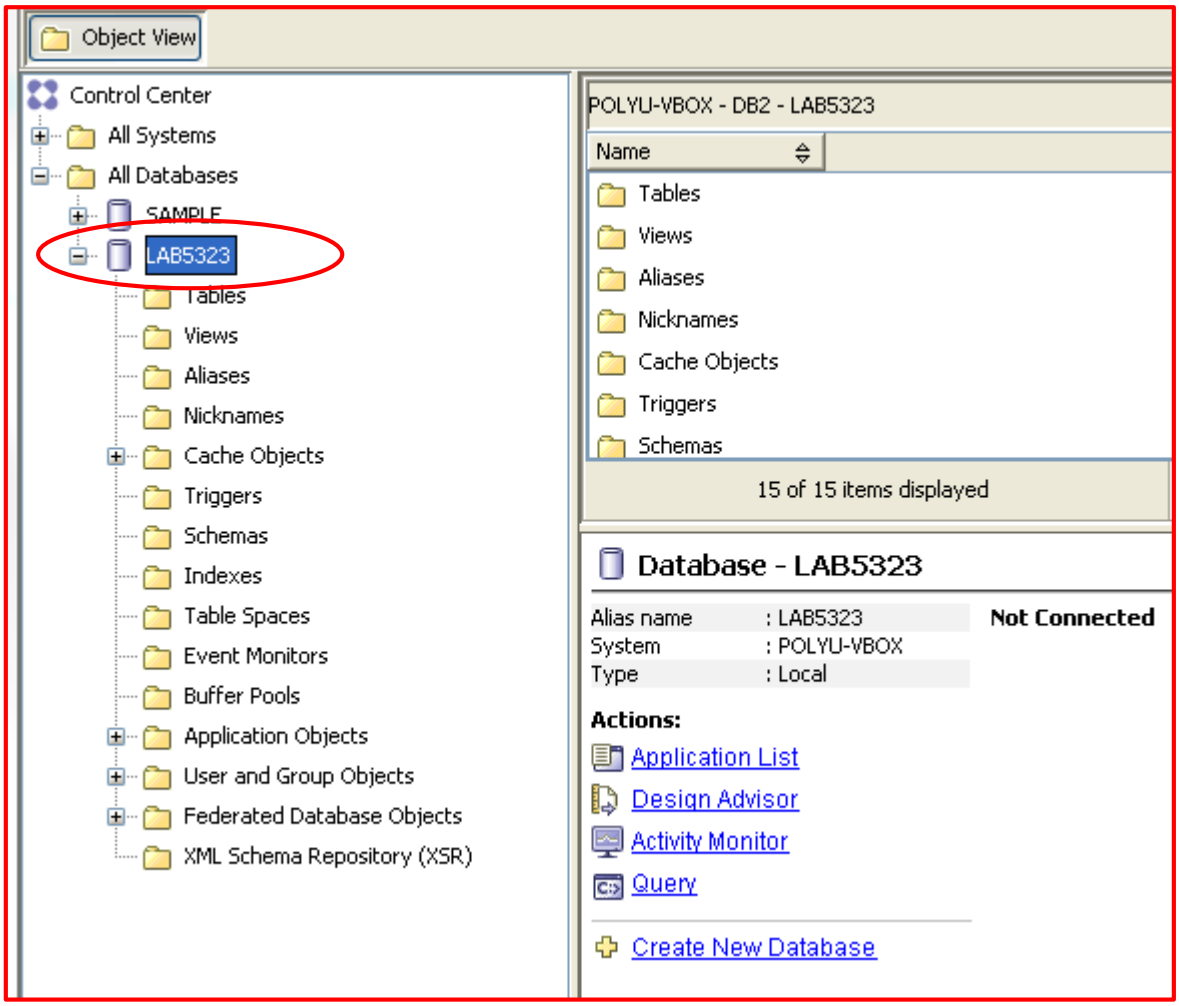


Figure 23 - New database [LAB5323] is listed

Go to `[Tables]`, then new table can be created. Simply click the link `[Create New Table]`.

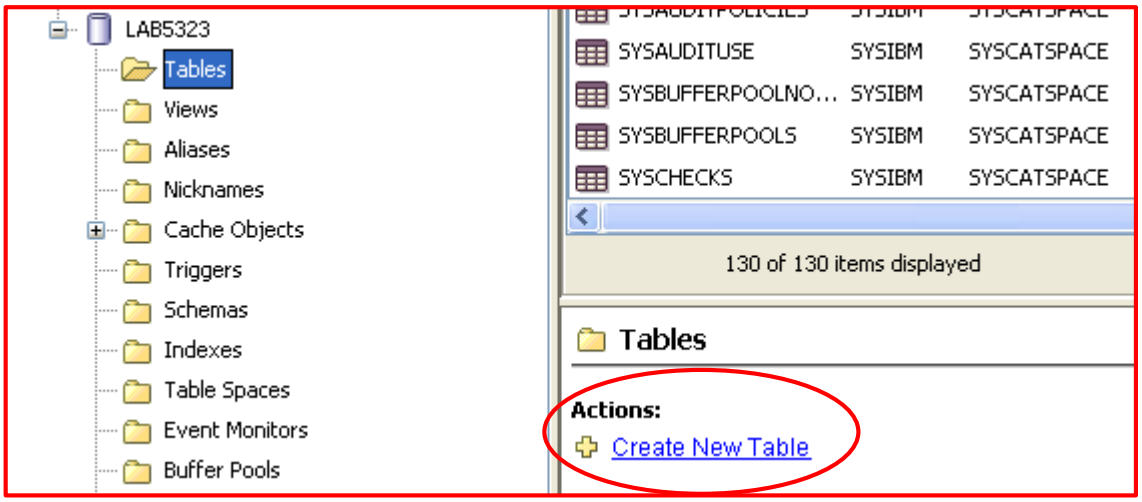


Figure 24 - Create new table

Choose `[Table schema]` as `[DB2ADMIN]` and name the table `[part_table]`. Click `[Next]`.

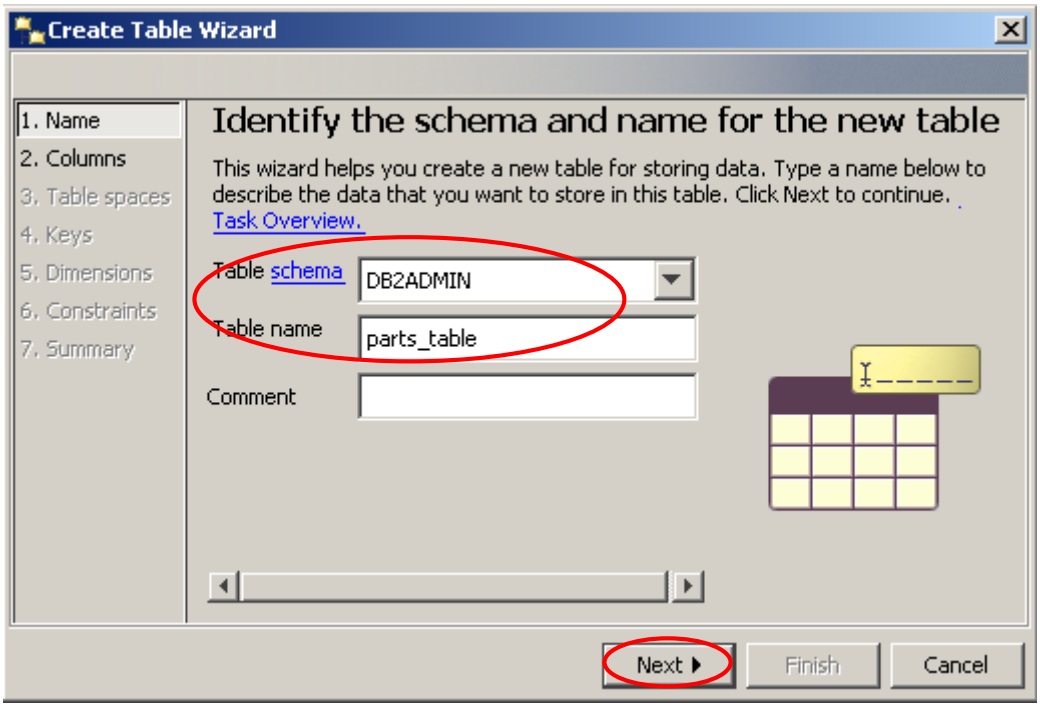


Figure 25 - Set schema and name table

Create column, click `[Add…]` button. Name the column `[PART_DATA]`, and `for [Data type]` choose `[XML]` from the dropdown list.

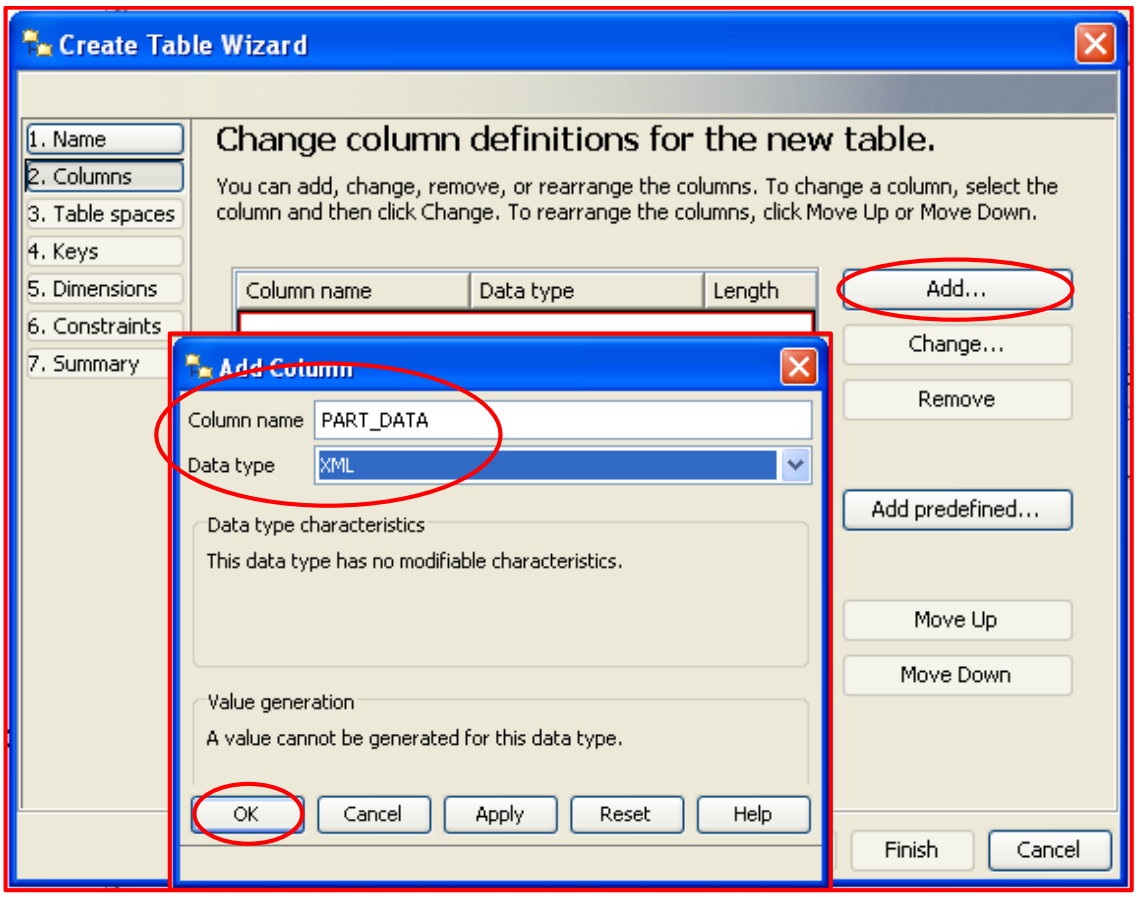


Figure 26 - Create column

Once the column is created, click `[Finish]`.

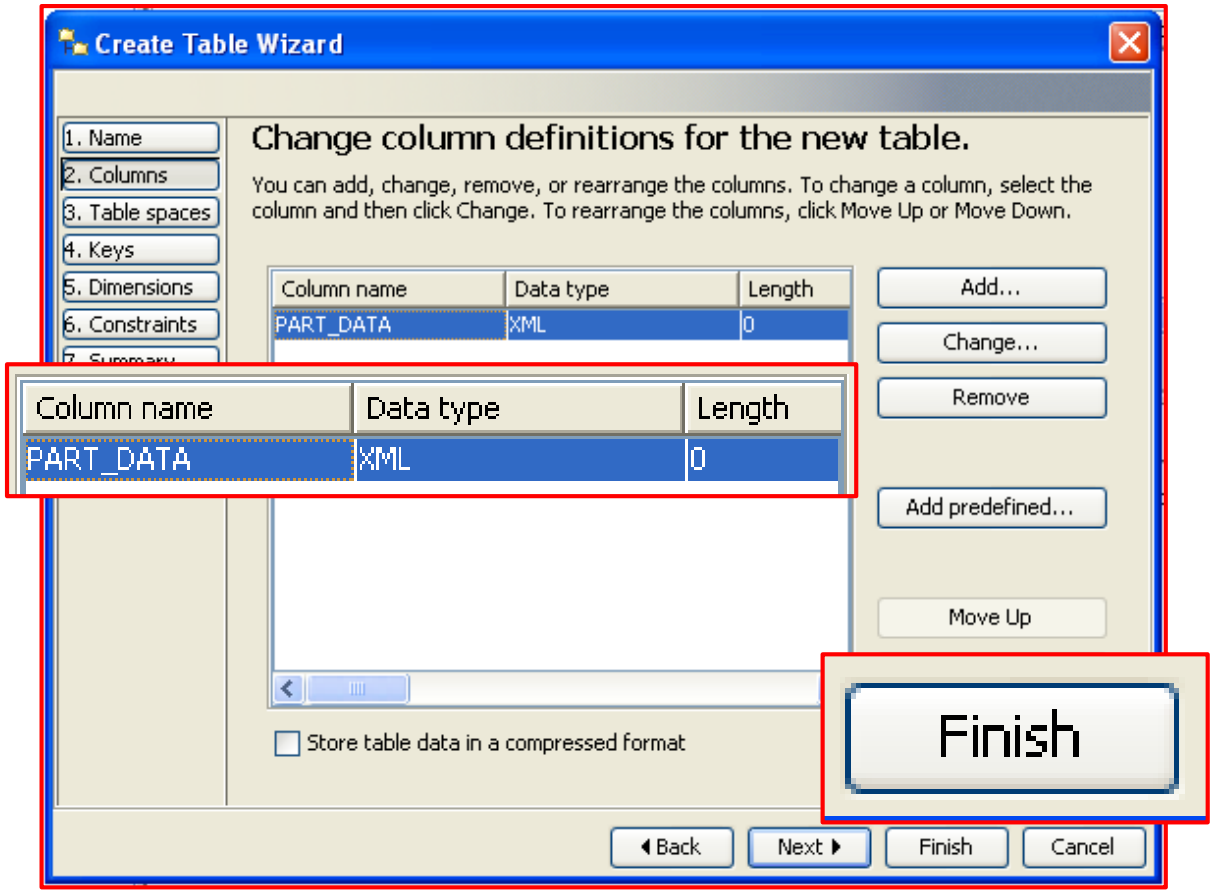


Figure 27 - Settings are done

The following SQL statements should have prepared by DB2. Click `[Close]`.

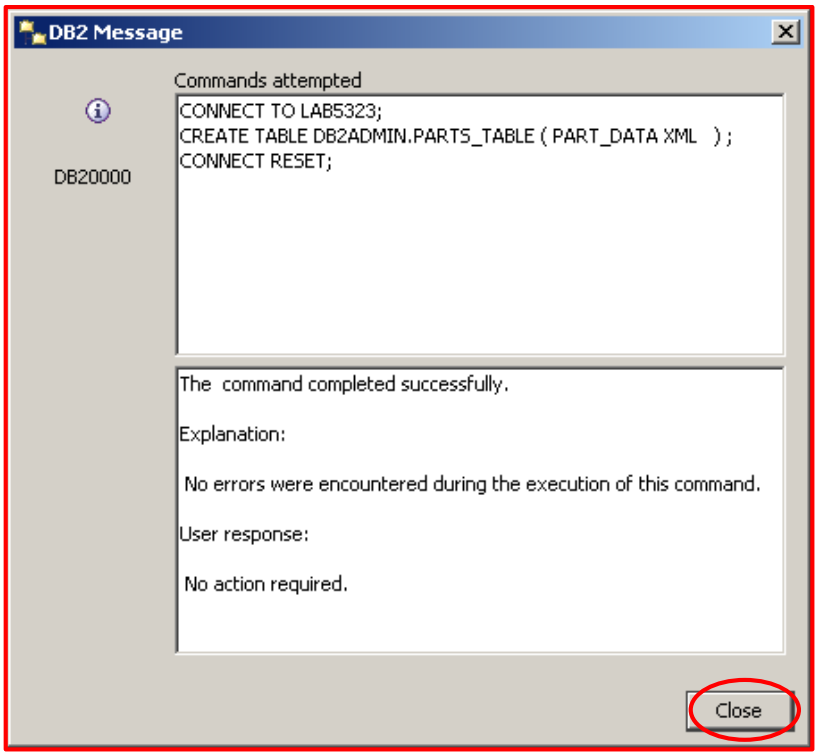


Figure 28 - SQL statements generated by DB2

Have a look at the table and column which have just been created (*see below*).

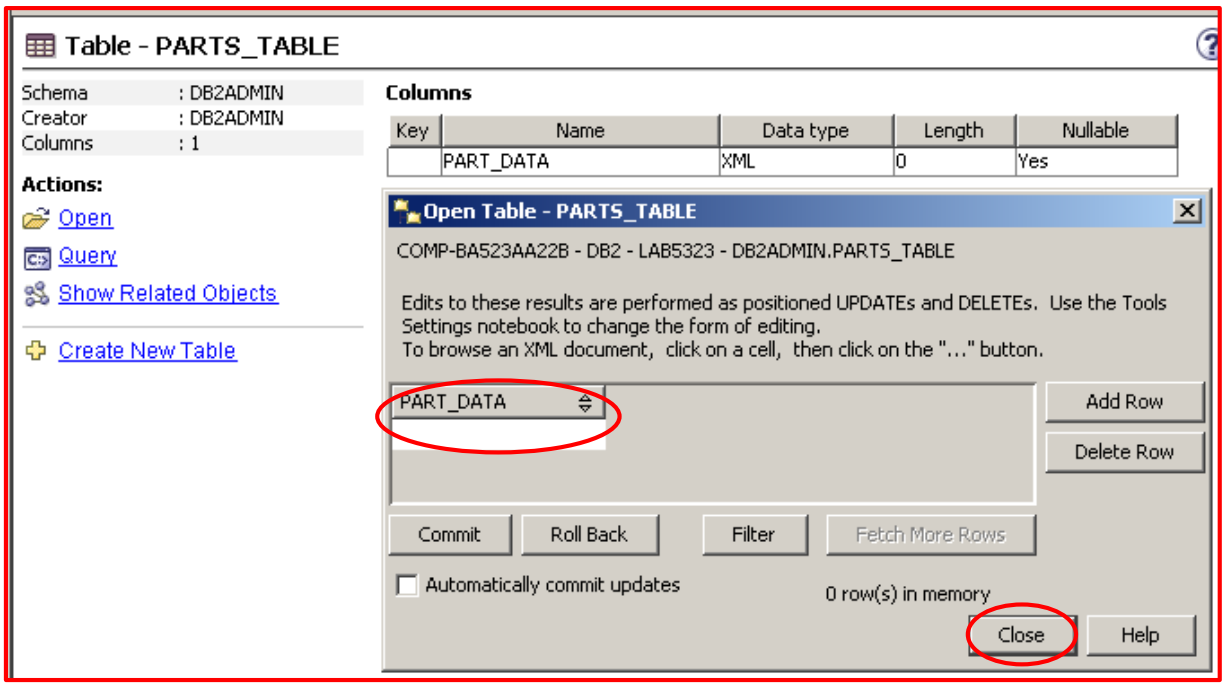


Figure 29 - New Database with 'Table' and 'Column' created

Since there is no record in the new created table, an `XML` file (`part.xml`) would be imported into the database. Before that, a **`DEL`** file (`parts.del`) should have been prepared. In this file, there is only one statement - **`<XDS FIL='C:/comp5323/parts.xml'/>`**. It is to indicate the path to read in the `XML` file which is to be imported.

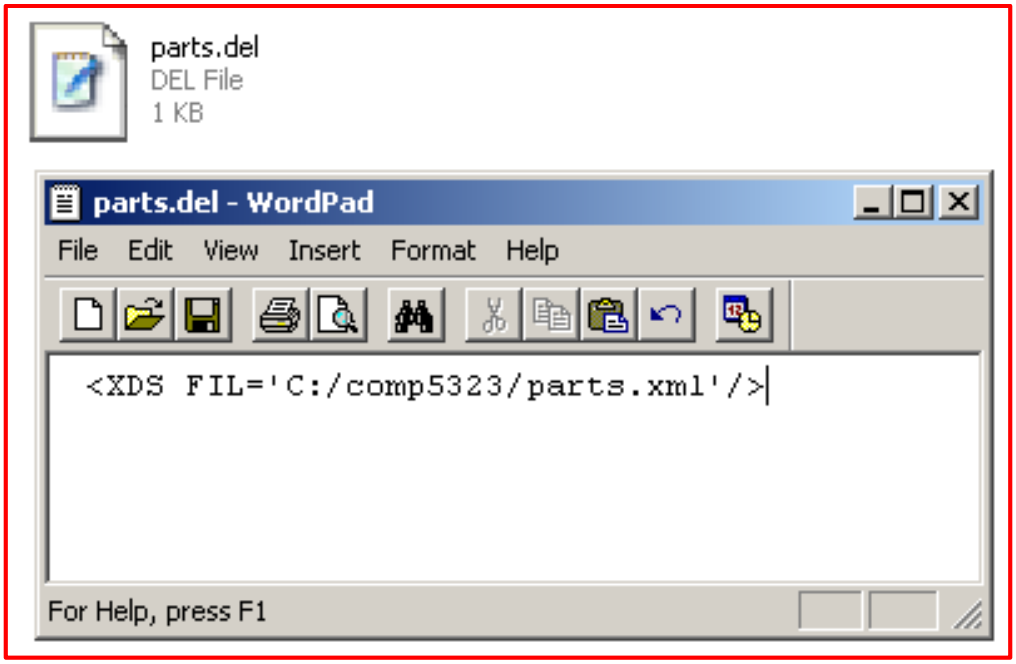


Figure 30 - DEL file and file's statement

Go to `[Table - PART_TABLE]`, there is a link `[Query]`. Click this link to call out the `[Command Editor]`.

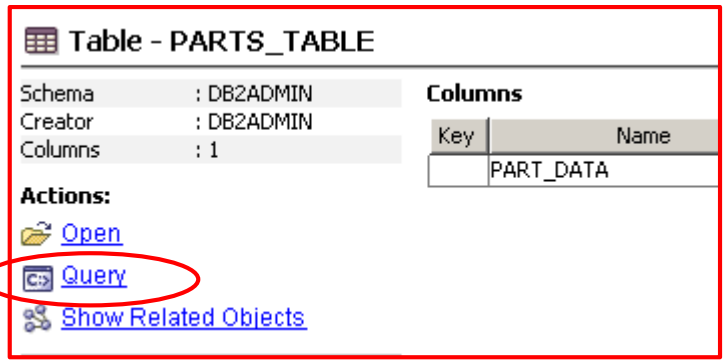


Figure 31 - Link to command editor (coding SQL)

As shown below, the `[Command Editor]`. has two parts, one is for user to code the *SQL statements* and the other one is to show the result after executing the *SQL statements*. Moreover, it is used to code the **`x-query`**.

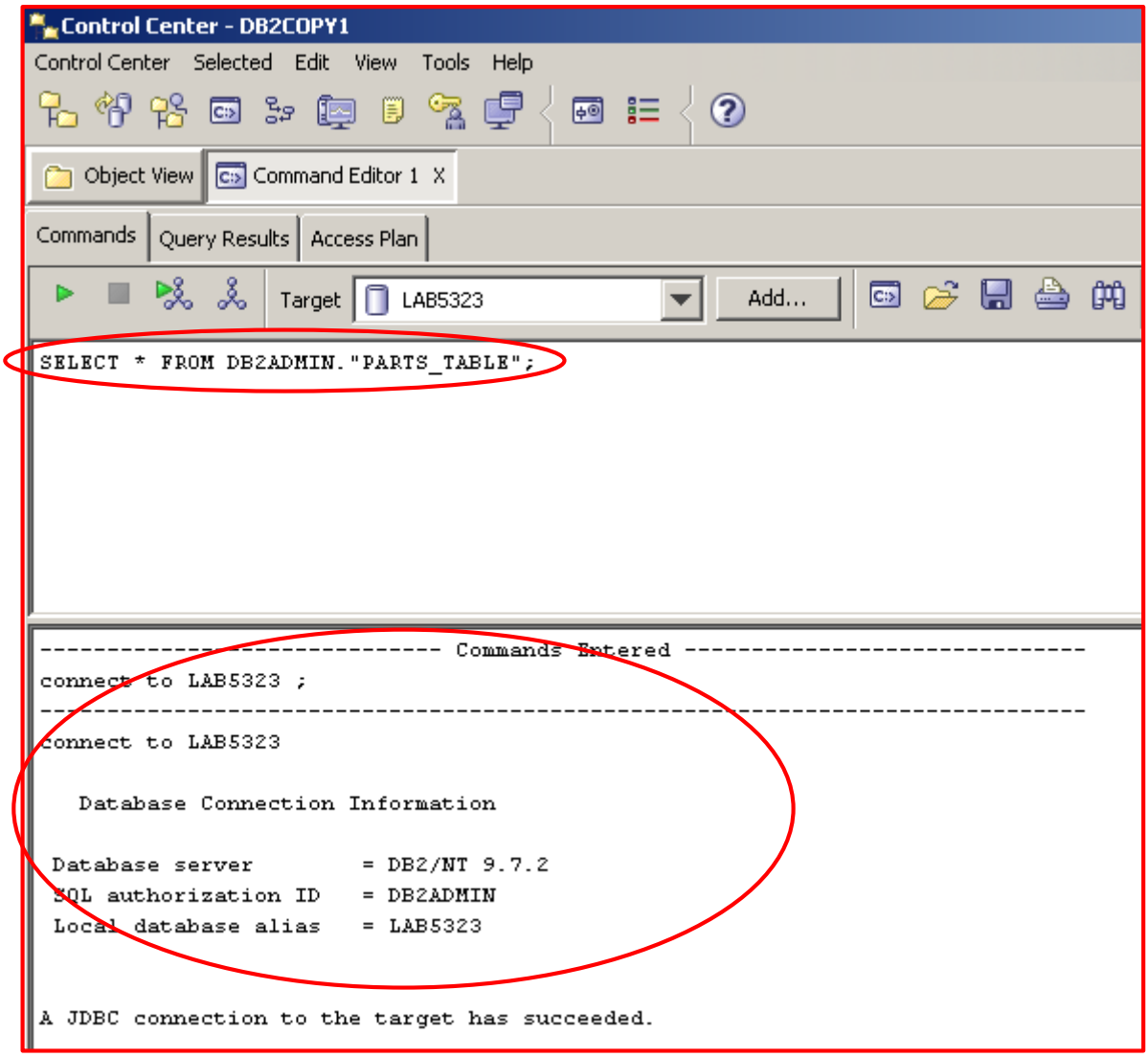


Figure 32 - [Command Editor] helps to create SQL statements

To import an XML file into the database, it is necessary to execute the following SQL statement.

```
IMPORT FROM "C:\comp5323\parts.del" of DEL
   XML FROM "C:\comp5323"
INSERT INTO DB2ADMIN.PARTS_TABLE;
```

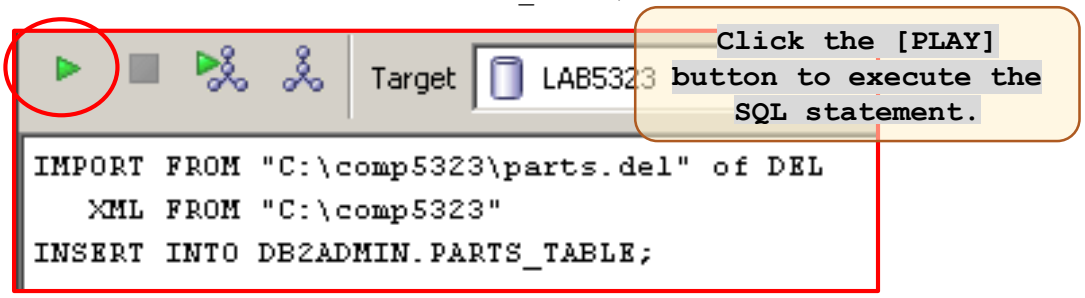


Figure 33 - Statements to import XML file

If the import is successful, the following screen should appear.

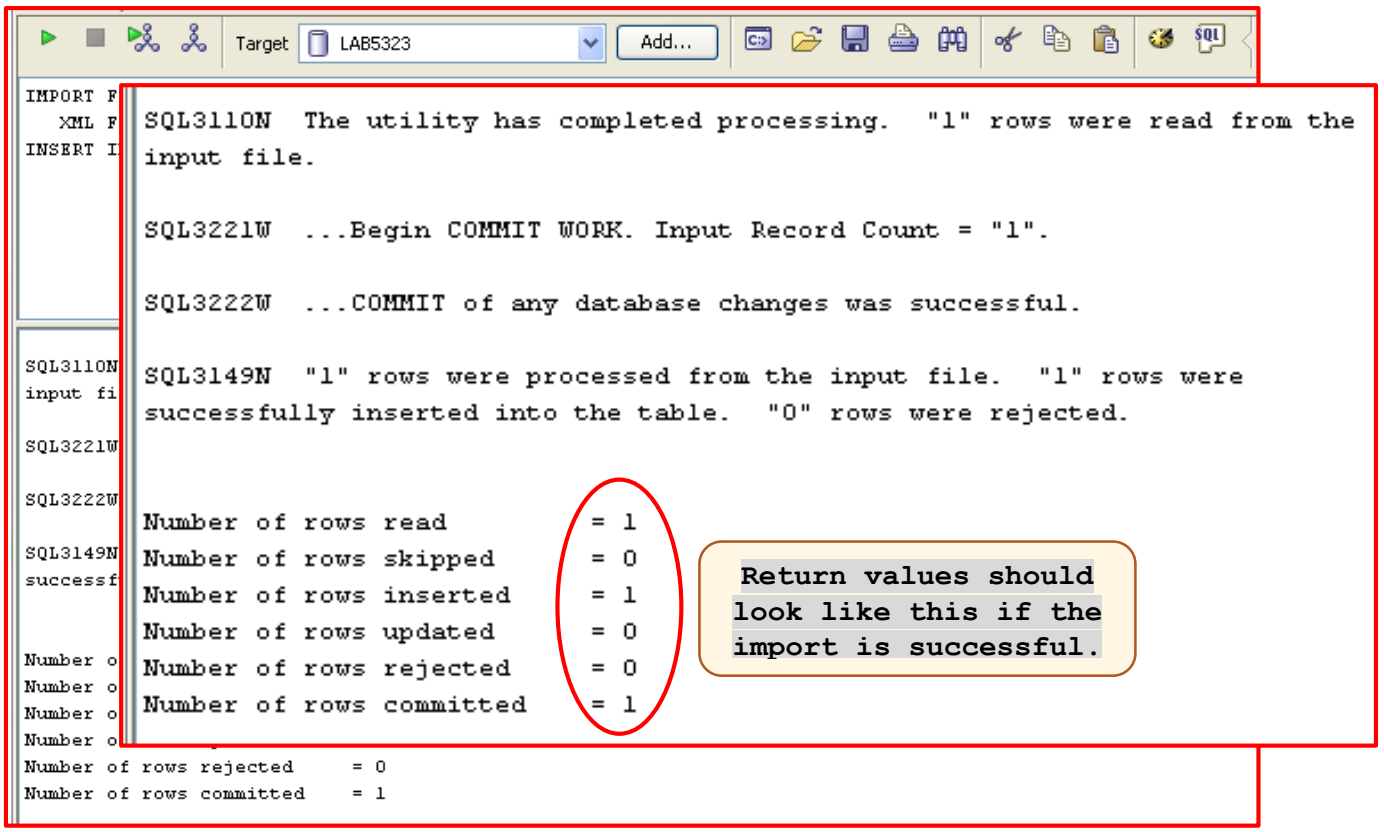


Figure 34 - XML file is imported successfully

Go back to open table and column. An XML record should have been added just like the one below.

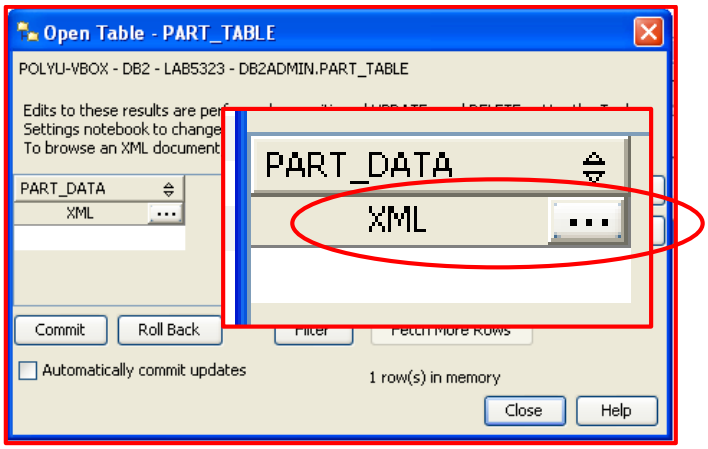


Figure 35 - XML record is added

Click the `[...]` button, the following window (`XML Document Viewer`) should appear.

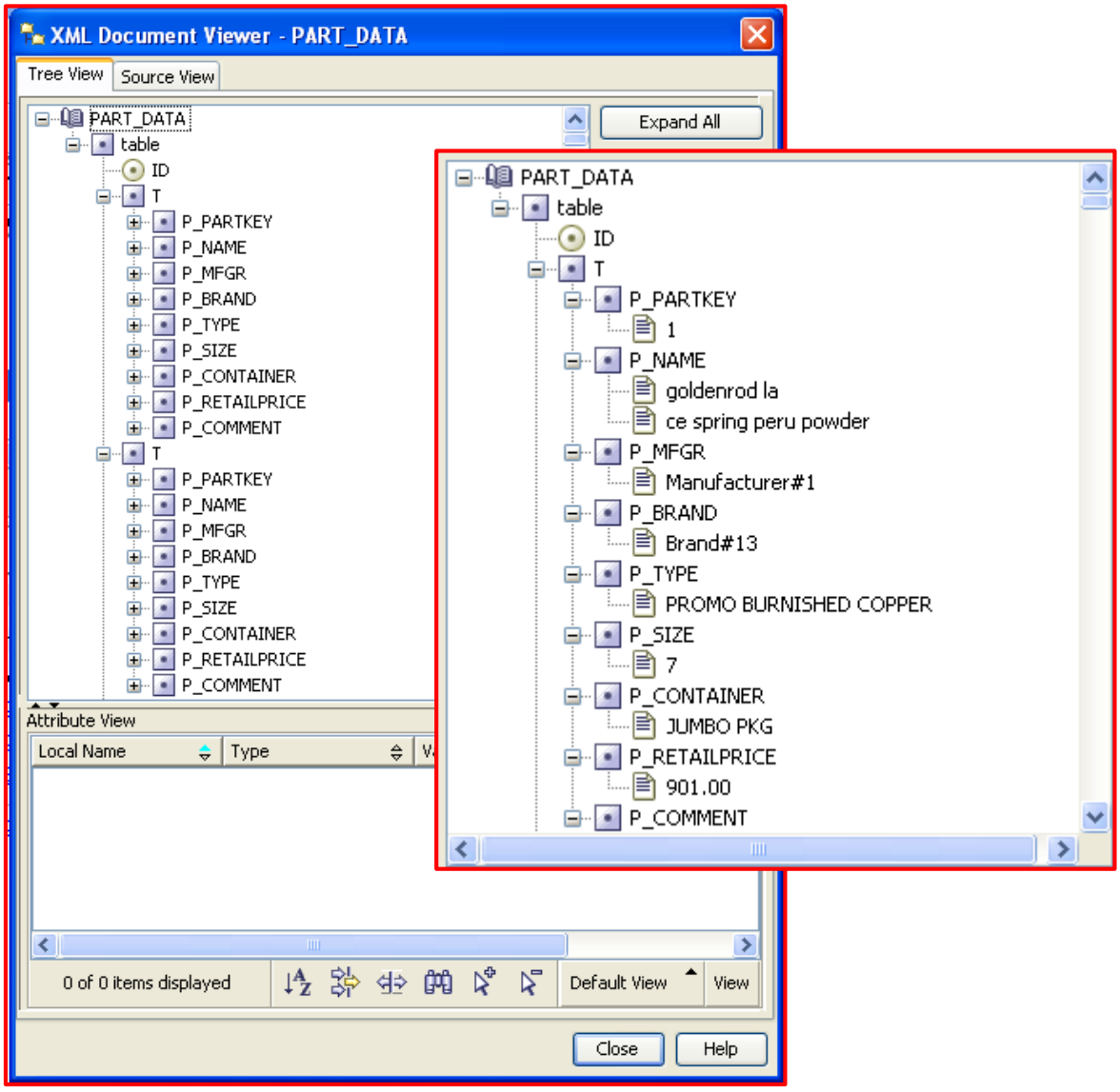


Figure 36 - XML Document Viewer

Write the First XQUERY Statement

Actually, in the `Command Editor`, user can input any command to execute, even though these commands are not related to the database. Just like this one.

```
XQUERY
   for $i in (1 to 3) return $i;
```

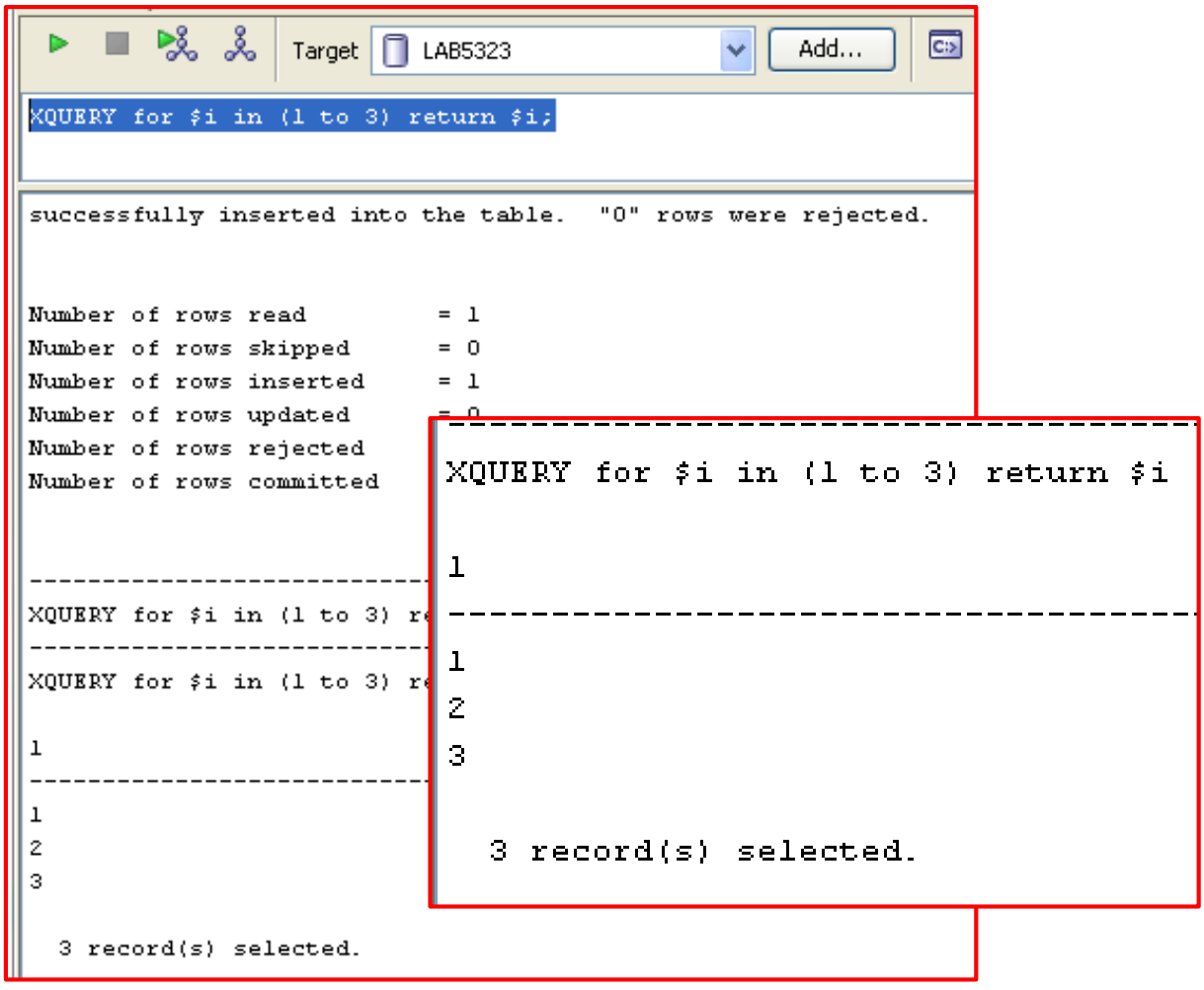
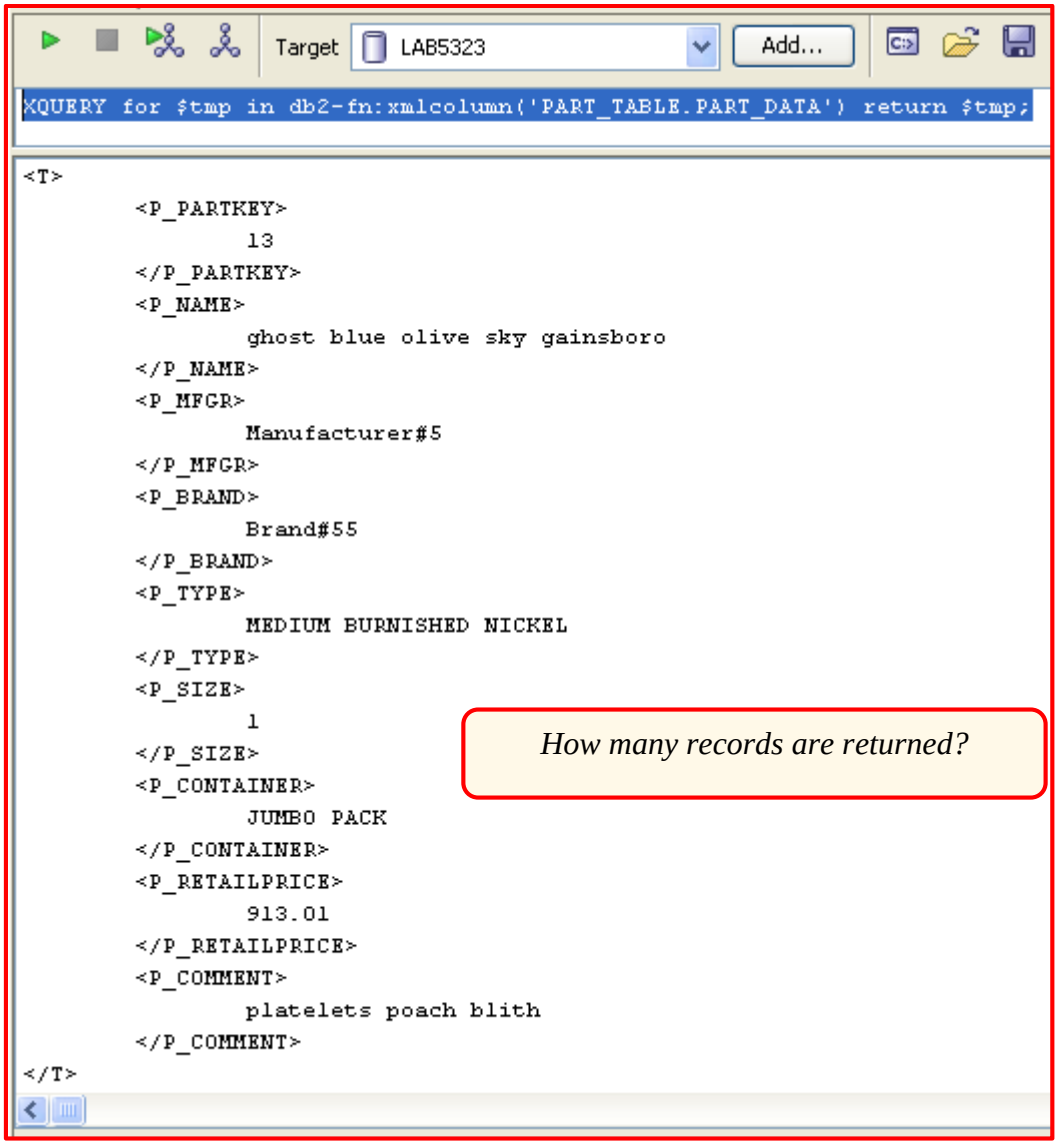


Figure 37 - First XQUERY statement being executed

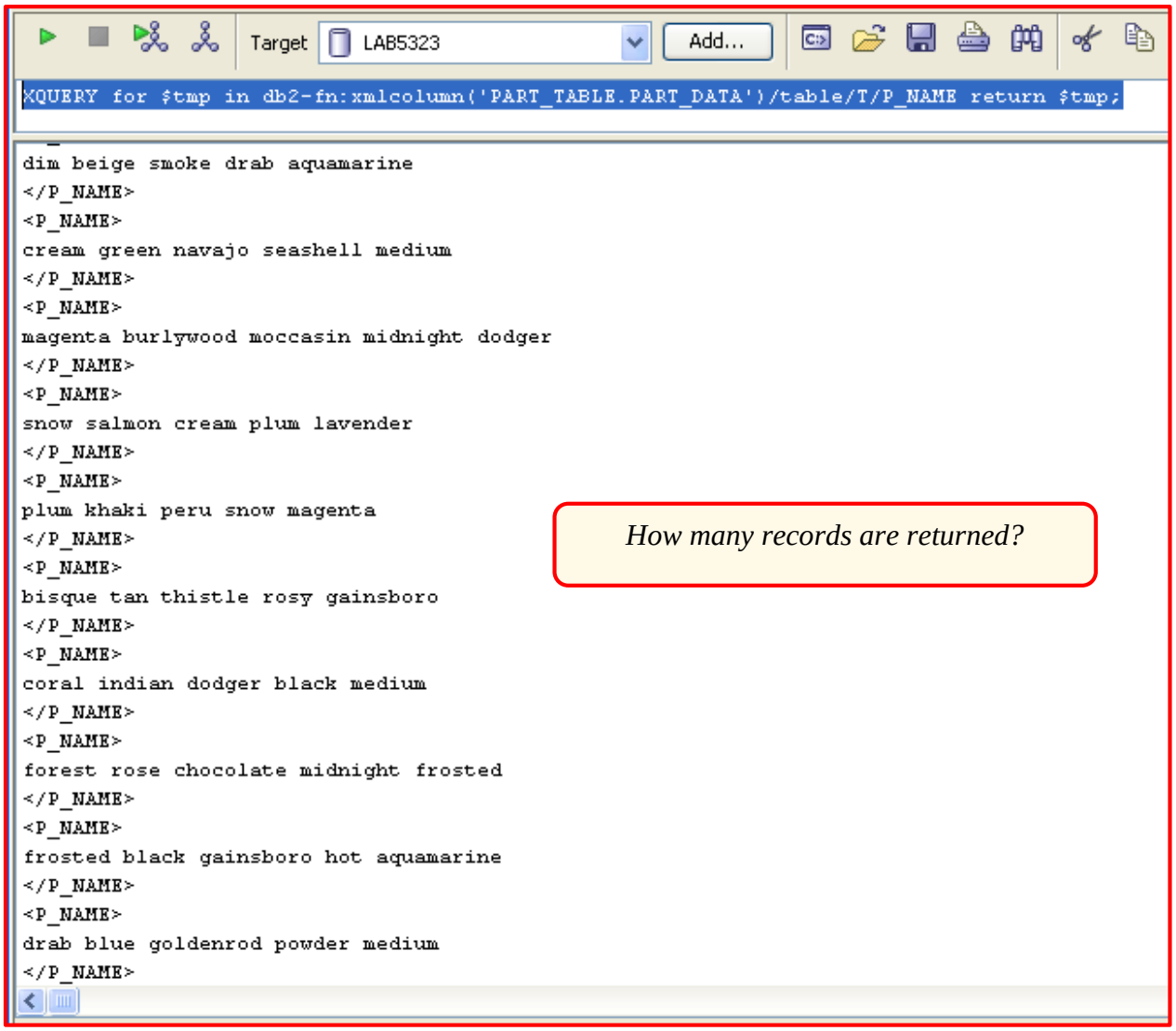
Task 1 – Execute the following XQuery to check how many records are returned.

```
XQUERY
   for $tmp in db2-fn:xmlcolumn('PARTS_TABLE.PART_DATA')
   return $tmp;
```



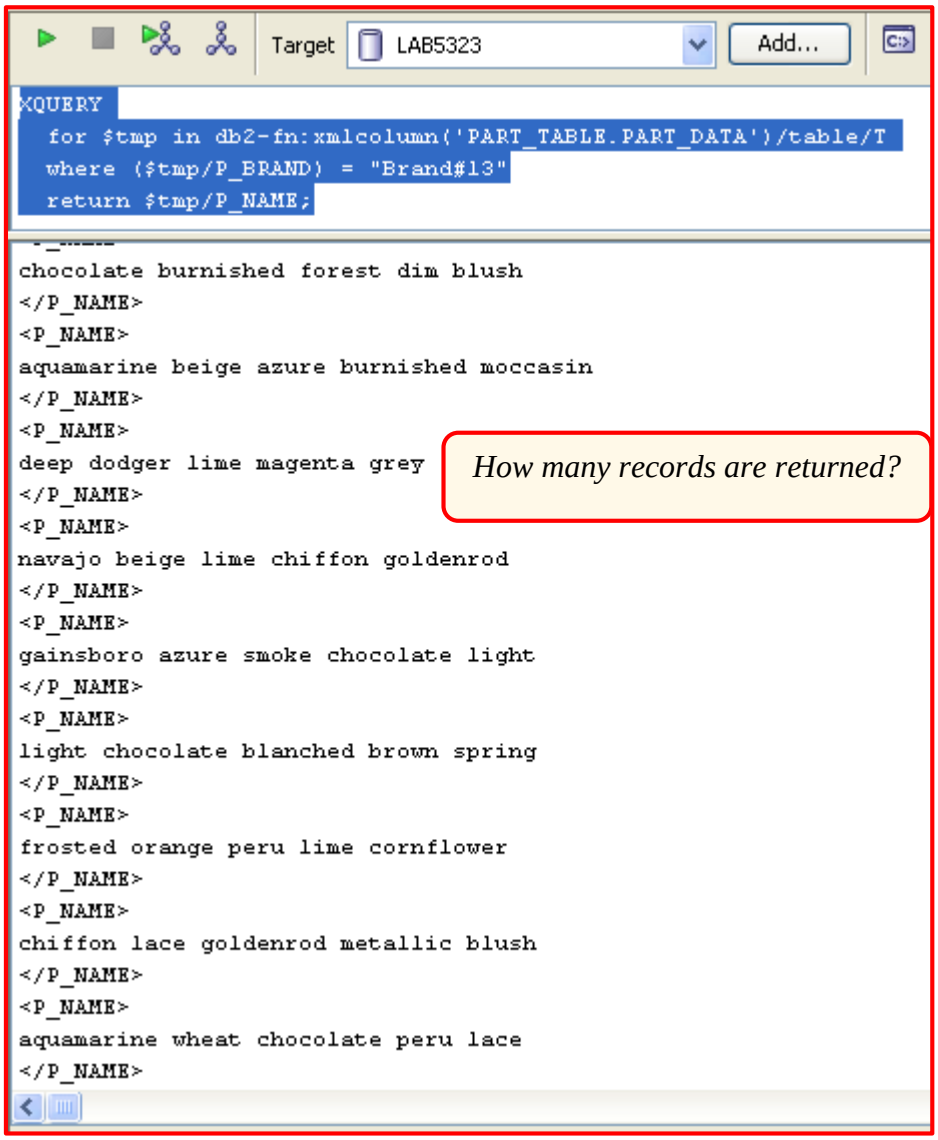
Task 2 – Execute the following XQuery to check how many records are returned.

```
XQUERY
   for $tmp in
      db2-fn:xmlcolumn('PARTS_TABLE.PART_DATA')/table/T/P_NAME
   return $tmp;
```



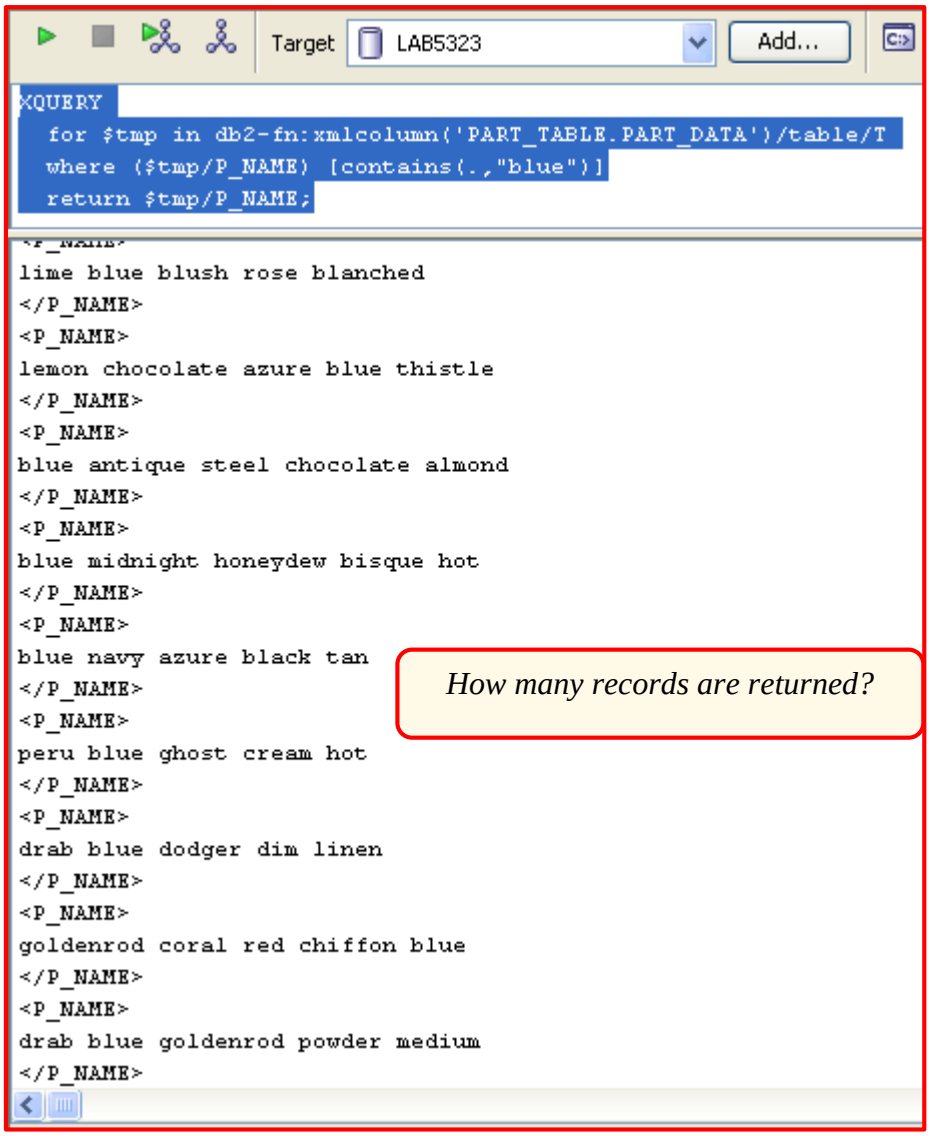
Task 3 – Execute the following XQuery to check how many records are returned.

```
XQUERY
   for $tmp in db2-fn:xmlcolumn('PARTS_TABLE.PART_DATA')/table/T
   where ($tmp/P_BRAND) = "Brand#13"
   return $tmp/P_NAME;
```



Task 4 – Execute the following XQuery to check how many records are returned.

```
XQUERY
   for $tmp in db2-fn:xmlcolumn('PARTS_TABLE.PART_DATA')/table/T
   where ($tmp/P_NAME) contains(.,"blue")]
   return $tmp/P_NAME;
```



Task 5 – Write an x-query to find out records of [(P_SIZE >= 40 or P_SIZE <= 15) and (P_MFGR = “Manufacturer#1” or P_MFGR = “Manufacturer#4”)]

Please submit the answers to the Blackboard.