

The SQL Series of Courses

Installation Guide



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Description of Files on Diskette

There are 13 files on the installation diskette:

File Name	Size	Description
\$ReadMe.txt	3KB	Similar information as in this section of this document
AllEmps.txt	1KB	Student workshop file (distributed DB2 only)
Constr.txt	4KB	Student workshop file (mainframe DB2 only)
Constrnt.txt	2KB	Student workshop file (distributed DB2 only)
Cre8DB.txt	17KB	Create 1 storage group, and 13 databases with 1 table space each
Cre8IX.txt	41KB	Create 13 copies of 3 primary-key indices
Cre8TB.txt	55KB	Create 13 copies of 4 tables
DropDB.txt	3KB	Optional post-class clean-up
InsMyRow.txt	1KB	Student workshop file (distributed DB2 only)
LoadTB.txt	347KB	Populate 13 copies of 4 tables (via INSERT statements)
Student.bat	1KB	Student workshop set-up (distributed DB2 only)
TempTabl.txt	1KB	Student workshop file (distributed DB2 only)
TempTB.txt	5KB	Student workshop file (mainframe DB2 only)

The diskette includes all the files that are needed for set-up on either DB2 platform:

- ◆ DB2 UDB for Linux, UNIX, Windows (a.k.a. “distributed DB2”)
- ◆ DB2 UDB for OS/390 and z/OS (a.k.a. “mainframe DB2”)

You shall therefore be using only those files on this diskette appropriate for your DB2 platform.

Distributed DB2 If you wish to set up the classroom files for distributed DB2, proceed to the next section, which is titled “Installation for DB2 UDB for Linux, UNIX, Windows.”

Mainframe DB2 If you wish to set up the classroom files for mainframe DB2, disregard the next section and proceed to the one after it, which is titled “Installation for DB2 UDB for OS/390 and z/OS.”

Both Either way, proceed to the last section, which is titled “Verification of Installation,” to finish the classroom set-up.

Note: If you have any trouble with the classroom set-up, let your sales representative know immediately, and he or she can provide you with whatever technical assistance you may need.

Installation for DB2 UDB for Linux, UNIX, Windows

Install DB2

First, be sure that DB2 UDB is installed on each student workstation. *This is not necessarily a straightforward or painless process*, so be sure to allow sufficient time and other resources. For any installation problems, contact either your own help desk or your class sales representative.

Create the SAMPLE Database

The class workshops for distributed DB2 use the SAMPLE database that ships with DB2. If this was not already automatically created during the installation of DB2 itself, simply click on First Steps from DB2's Set-up Tools submenu. From the First Steps window, click on Create Sample Databases. In the next window, check the box next to DB2 UDB sample, and click OK. This may take a few minutes, so please be patient. *Do this on each student workstation.*

Copy Files

On the diskette, the only files you need are:

- ◆ AllEmps.txt
- ◆ Constrnt.txt
- ◆ InsMyRow.txt
- ◆ Student.bat
- ◆ TempTabl.txt

Student.bat creates a folder called "CejCo" on the C: drive, then copies the other four files to it. Feel free to edit it to change either the folder name or the drive letter. Then, pop the diskette into the floppy drive, click on Start |

Run, type a : \student, and press Enter. *Do this on each student workstation.*

Installation for DB2 UDB for OS/390 and z/OS

Install DB2

First, be sure that DB2 UDB is installed on the mainframe. It is hoped that DB2 is already up and running. Make sure that the instructor knows what version of DB2 you have, and how to log on to the mainframe.

Allocate Source PDS

Allocate a partitioned data set (PDS) to be accessed by the instructor—and the students, if need be. A suggested naming convention is _____ . CEJCO . SQL . SETUP. The data set should have an LRECL of 80, an appropriate block size, and 20 directory blocks. Put it on a permanent volume. Use RACF (ACF2, Top Secret) to write-protect the data set against the student logon ID's, giving them read-only access (read-write access for the instructor). Make sure that the instructor is told the data set's high-level qualifier.

Copy Files

On the diskette, the only files you need are the seven files with six-letter file names:

- ◆ Constr.txt
- ◆ Cre8DB.txt
- ◆ Cre8IX.txt
- ◆ Cre8TB.txt
- ◆ DropDB.txt
- ◆ LoadTB.txt
- ◆ TempTB.txt

Use your file-transfer tool to copy these seven text files to the mainframe, giving them corresponding PDS member names of CONSTR, CRE8DB, CRE8IX, CRE8TB, DROPDB, LOADTB, and TEMPTB.

Create the **SAMPLE** Database

Using SPUFI, edit and execute the following four members of the source PDS in sequence:

- ◆ **CRE8DB**—Create 1 storage group, and 13 databases with 1 table space each
- ◆ **CRE8TB**—Create 13 copies of 4 tables
- ◆ **CRE8IX**—Create 13 copies of 3 primary-key indices
- ◆ **LOADTB**—Populate 13 copies of 4 tables (via INSERT statements)

Each of these starts with copious remarks outlining global edit changes to be made prior to execution, as discussed below.

The PDS member **CRE8DB** assumes a separate database for each of the students and one for the instructor. The default naming convention is CEJCO01 through CEJCO12 for the students and CEJCO00 for the instructor. You may create more or fewer databases, as needed. You may also use your own naming convention—just be sure that you tell the instructor. For each database, a single table space (called **USERSPC1**) is created. It is a segmented table space with a segment size of 4 pages. All of the tables needed by each student can reside in the same table space. (Remember, they are all in different databases.) Although shared table spaces may not be an optimal design in a production environment, they work just fine for this sort of class.

Each table space is to contain four tables: **DEPARTMENT**, **EMPLOYEE**, **PROJECT**, and **EMP_ACT**. The PDS member **CRE8TB** uses schema names (high-level qualifiers or creator ID's) of **SCHEMA01** through **SCHEMA12** (**SCHEMA00** for the instructor)—if possible, change them to the students' (and instructor's) TSO logon ID's. Again, make sure that the instructor is told what the table schema names are.

For each student, three of the four tables have primary keys (**EMP_ACT** is unkeyed). The PDS member **CRE8IX** has the DDL to create the appropriate unique indices and to alter the tables to declare the primary keys. Note that there are no foreign keys declared on any of these tables.

The tables are populated by simple INSERT statements in the PDS member LOADTB.

Verification of Installation

Verify Table Contents

The following pages define the four tables and their contents. From an arbitrary student workstation (or using an arbitrary student logon ID), code full-table SELECT statements against each of the four tables and compare their contents against what appears below. For distributed DB2, this may be done most easily in either the Command Center or the Control Center. For mainframe DB2, SPUFI is probably the easiest tool to use.

Generate Instructor Worksheet

Finally, document for the instructor any site-specific procedures or changes you have made to the default installation, including, but not limited to, the following:

- ◆ The number of student set-ups
- ◆ The presence or absence of an instructor set-up
- ◆ Various file naming conventions
- ◆ How to log on to the PC
- ◆ How to log on to the LAN
- ◆ How to log on to the mainframe

DEPARTMENT Table

The DEPARTMENT table contains the following five columns:

Column Name	Type	Nulls	Description
DEPTNO	CHAR(3)	No	Department number (primary key)
DEPTNAME	VARCHAR(29)	No	Name describing general activities of department
MGRNO	CHAR(6)	Yes	Employee number (EMPNO) of department manager
ADMRDEPT	CHAR(3)	No	Department (DEPTNO) to which this department reports
LOCATION	CHAR(16)	Yes	Name of the remote location

MGRNO is a foreign key pointing to the primary key of the EMPLOYEE table. ADMRDEPT is a foreign key pointing to the primary key of this, the DEPARTMENT table. However, database-managed referential integrity has not been turned on, so invalid values are possible in both foreign keys.

Contents

DEPTNO	DEPTNAME	MGRNO	ADMRDEPT	LOCATION
A00	SPIFFY COMPUTER SERVICE DIV.	000010	A00	-
B01	PLANNING	000020	A00	-
C01	INFORMATION CENTER	000030	A00	-
D01	DEVELOPMENT CENTER	-	A00	-
D11	MANUFACTURING SYSTEMS	000060	D01	-
D21	ADMINISTRATION SYSTEMS	000070	D01	-
E01	SUPPORT SERVICES	000050	A00	-
E11	OPERATIONS	000090	E01	-
E21	SOFTWARE SUPPORT	000100	E01	-

9 record(s) selected.

EMPLOYEE Table

The EMPLOYEE table contains the following 14 columns:

Column Name	Type	Nulls	Description
EMPNO	CHAR(6)	No	Employee number (primary key)
FIRSTNAME	VARCHAR(12)	No	First name
MIDINIT	CHAR(1)	No	Middle initial
LASTNAME	VARCHAR(15)	No	Last name
WORKDEPT	CHAR(3)	Yes	Department (DEPTNO) in which the employee works
PHONENO	CHAR(4)	Yes	Telephone extension number
HIREDATE	DATE	Yes	Date of hire
JOB	CHAR(8)	Yes	Job
EDLEVEL	SMALLINT	No	Number of years of formal education
SEX	CHAR(1)	Yes	Sex (M male, F female)
BIRTHDATE	DATE	Yes	Date of birth
SALARY	DEC(9,2)	Yes	Yearly salary
BONUS	DEC(9,2)	Yes	Yearly bonus
COMM	DEC(9,2)	Yes	Yearly commission

WORKDEPT is a foreign key pointing to the primary key of the DEPARTMENT table. However, database-managed referential integrity has not been turned on, so invalid values are possible in the foreign key.

Also, there is no database-managed domain integrity, so columns may contain values outside their domains. For example, it is possible to have a value other than M or F in the SEX column.

Contents (Columns 1-7)

EMPNO	FIRSTNME	MIDINIT	LASTNAME	WORKDEPT	PHONENO	HIREDATE
000010	CHRISTINE	I	HAAS	A00	3978	01/01/1965
000020	MICHAEL	L	THOMPSON	B01	3476	10/10/1973
000030	SALLY	A	KWAN	C01	4738	04/05/1975
000050	JOHN	B	GEYER	E01	6789	08/17/1949
000060	IRVING	F	STERN	D11	6423	09/14/1973
000070	EVA	D	PULASKI	D21	7831	09/30/1980
000090	EILEEN	W	HENDERSON	E11	5498	08/15/1970
000100	THEODORE	Q	SPENSER	E21	0972	06/19/1980
000110	VINCENZO	G	LUCCHESSI	A00	3490	05/16/1958
000120	SEAN		O'CONNELL	A00	2167	12/05/1963
000130	DOLORES	M	QUINTANA	C01	4578	07/28/1971
000140	HEATHER	A	NICHOLLS	C01	1793	12/15/1976
000150	BRUCE		ADAMSON	D11	4510	02/12/1972
000160	ELIZABETH	R	PIANKA	D11	3782	10/11/1977
000170	MASATOSHI	J	YOSHIMURA	D11	2890	09/15/1978
000180	MARILYN	S	SCOUTTEN	D11	1682	07/07/1973
000190	JAMES	H	WALKER	D11	2986	07/26/1974
000200	DAVID		BROWN	D11	4501	03/03/1966
000210	WILLIAM	T	JONES	D11	0942	04/11/1979
000220	JENNIFER	K	LUTZ	D11	0672	08/29/1968
000230	JAMES	J	JEFFERSON	D21	2094	11/21/1966
000240	SALVATORE	M	MARINO	D21	3780	12/05/1979
000250	DANIEL	S	SMITH	D21	0961	10/30/1969
000260	SYBIL	P	JOHNSON	D21	8953	09/11/1975
000270	MARIA	L	PEREZ	D21	9001	09/30/1980
000280	ETHEL	R	SCHNEIDER	E11	8997	03/24/1967
000290	JOHN	R	PARKER	E11	4502	05/30/1980
000300	PHILIP	X	SMITH	E11	2095	06/19/1972
000310	MAUDE	F	SETRIGHT	E11	3332	09/12/1964
000320	RAMLAL	V	MEHTA	E21	9990	07/07/1965
000330	WING		LEE	E21	2103	02/23/1976
000340	JASON	R	GOUNOT	E21	5698	05/05/1947

32 record(s) selected.

Contents (Columns 1 and 8–14)

EMPNO	JOB	EDLEVEL	SEX	BIRTHDATE	SALARY	BONUS	COMM
000010	PRES	18	F	08/24/1933	52750.00	1000.00	4220.00
000020	MANAGER	18	M	02/02/1948	41250.00	800.00	3300.00
000030	MANAGER	20	F	05/11/1941	38250.00	800.00	3060.00
000050	MANAGER	16	M	09/15/1925	40175.00	800.00	3214.00
000060	MANAGER	16	M	07/07/1945	32250.00	500.00	2580.00
000070	MANAGER	16	F	05/26/1953	36170.00	700.00	2893.00
000090	MANAGER	16	F	05/15/1941	29750.00	600.00	2380.00
000100	MANAGER	14	M	12/18/1956	26150.00	500.00	2092.00
000110	SALESREP	19	M	11/05/1929	46500.00	900.00	3720.00
000120	CLERK	14	M	10/18/1942	29250.00	600.00	2340.00
000130	ANALYST	16	F	09/15/1925	23800.00	500.00	1904.00
000140	ANALYST	18	F	01/19/1946	28420.00	600.00	2274.00
000150	DESIGNER	16	M	05/17/1947	25280.00	500.00	2022.00
000160	DESIGNER	17	F	04/12/1955	22250.00	400.00	1780.00
000170	DESIGNER	16	M	01/05/1951	24680.00	500.00	1974.00
000180	DESIGNER	17	F	02/21/1949	21340.00	500.00	1707.00
000190	DESIGNER	16	M	06/25/1952	20450.00	400.00	1636.00
000200	DESIGNER	16	M	05/29/1941	27740.00	600.00	2217.00
000210	DESIGNER	17	M	02/23/1953	18270.00	400.00	1462.00
000220	DESIGNER	18	F	03/19/1948	29840.00	600.00	2387.00
000230	CLERK	14	M	05/30/1935	22180.00	400.00	1774.00
000240	CLERK	17	M	03/31/1954	28760.00	600.00	2301.00
000250	CLERK	15	M	11/12/1939	19180.00	400.00	1534.00
000260	CLERK	16	F	10/05/1936	17250.00	300.00	1380.00
000270	CLERK	15	F	05/26/1953	27380.00	500.00	2190.00
000280	OPERATOR	17	F	03/28/1936	26250.00	500.00	2100.00
000290	OPERATOR	12	M	07/09/1946	15340.00	300.00	1227.00
000300	OPERATOR	14	M	10/27/1936	17750.00	400.00	1420.00
000310	OPERATOR	12	F	04/21/1931	15900.00	300.00	1272.00
000320	FIELDREP	16	M	08/11/1932	19950.00	400.00	1596.00
000330	FIELDREP	14	M	07/18/1941	25370.00	500.00	2030.00
000340	FIELDREP	16	M	05/17/1926	23840.00	500.00	1907.00

32 record(s) selected.

PROJECT Table

The PROJECT table contains the following eight columns:

Column Name	Type	Nulls	Description
PROJNO	CHAR(6)	No	Project number (primary key)
PROJNAME	VARCHAR(24)	No	Project name
DEPTNO	CHAR(3)	No	Department responsible for project
RESPEMP	CHAR(6)	No	Employee (EMPNO) responsible for project
PRSTAFF	DEC(5,2)	Yes	Estimated mean staffing
PRSTDATE	DATE	Yes	Estimated start date
PRENDATE	DATE	Yes	Estimated end date
MAJPROJ	CHAR(6)	Yes	Major project (PROJNO), for a subproject

DEPTNO is a foreign key pointing to the primary key of the DEPARTMENT table. RESPEMP is a foreign key pointing to the primary key of the EMPLOYEE table. MAJPROJ is a foreign key pointing to the primary key of this, the PROJECT table. However, database-managed referential integrity has not been turned on, so invalid values are possible in all three foreign keys.

Contents

PROJNO	PROJNAME	DEPTNO	RESPEMP	PRSTAFF	PRSTDATE	PRENDATE	MAJPROJ
AD3100	ADMIN SERVICES	D01	000010	6.50	01/01/1982	02/01/1983	
AD3110	GENERAL ADMIN SYSTEMS	D21	000070	6.00	01/01/1982	02/01/1983	AD3100
AD3111	PAYROLL PROGRAMMING	D21	000230	2.00	01/01/1982	02/01/1983	AD3110
AD3112	PERSONNEL PROGRAMMING	D21	000250	1.00	01/01/1982	02/01/1983	AD3110
AD3113	ACCOUNT PROGRAMMING	D21	000270	2.00	01/01/1982	02/01/1983	AD3110
IF1000	QUERY SERVICES	C01	000030	2.00	01/01/1982	02/01/1983	-
IF2000	USER EDUCATION	C01	000030	1.00	01/01/1982	02/01/1983	-
MA2100	WELD LINE AUTOMATION	D01	000010	12.00	01/01/1982	02/01/1983	-
MA2110	W L PROGRAMMING	D11	000060	9.00	01/01/1982	02/01/1983	MA2100
MA2111	W L PROGRAM DESIGN	D11	000220	2.00	01/01/1982	12/01/1982	MA2110
MA2112	W L ROBOT DESIGN	D11	000150	3.00	01/01/1982	12/01/1982	MA2110
MA2113	W L PROD CONT PROGS	D11	000160	3.00	02/15/1982	12/01/1982	MA2110
OP1000	OPERATION SUPPORT	E01	000050	6.00	01/01/1982	02/01/1983	-
OP1010	OPERATION	E11	000090	5.00	01/01/1982	02/01/1983	OP1000
OP2000	GEN SYSTEMS SERVICES	E01	000050	5.00	01/01/1982	02/01/1983	-
OP2010	SYSTEMS SUPPORT	E21	000100	4.00	01/01/1982	02/01/1983	OP2000
OP2011	SCP SYSTEMS SUPPORT	E21	000320	1.00	01/01/1982	02/01/1983	OP2010
OP2012	APPLICATIONS SUPPORT	E21	000330	1.00	01/01/1982	02/01/1983	OP2010
OP2013	DB/DC SUPPORT	E21	000340	1.00	01/01/1982	02/01/1983	OP2010
PL2100	WELD LINE PLANNING	B01	000020	1.00	01/01/1982	09/15/1982	MA2100

20 record(s) selected.

EMP_ACT Table

The EMP_ACT table contains the following six columns:

Column Name	Type	Nulls	Description
EMPNO	CHAR(6)	No	Employee number
PROJNO	CHAR(6)	No	Project number
ACTNO	SMALLINT	No	Activity number
EMPTIME	DEC(5,2)	Yes	Proportion of employee's time spent on project
EMSTDATE	DATE	Yes	Date activity starts
EMENDATE	DATE	Yes	Date activity ends

This table has no primary key, so there is no entity integrity, and duplicate rows are possible.

EMPNO is a foreign key pointing to the primary key of the EMPLOYEE table. PROJNO is a foreign key pointing to the primary key of the PROJECT table. However, database-managed referential integrity has not been turned on, so invalid values are possible in both foreign keys.

Also, the ACTNO column appears to be a foreign key, but there is no ACTIVITY table to refer to, so any values are possible.

Contents (Rows 1–38)

EMPNO	PROJNO	ACTNO	EMPTIME	EMSTDATE	EMENDATE
000010	MA2100	10	0.50	01/01/1982	11/01/1982
000010	MA2110	10	1.00	01/01/1982	02/01/1983
000010	AD3100	10	0.50	01/01/1982	07/01/1982
000020	PL2100	30	1.00	01/01/1982	09/15/1982
000030	IF1000	10	0.50	06/01/1982	01/01/1983
000030	IF2000	10	0.50	01/01/1982	01/01/1983
000050	OP1000	10	0.25	01/01/1982	02/01/1983
000050	OP2010	10	0.75	01/01/1982	02/01/1983
000070	AD3110	10	1.00	01/01/1982	02/01/1983
000090	OP1010	10	1.00	01/01/1982	02/01/1983
000100	OP2010	10	1.00	01/01/1982	02/01/1983
000110	MA2100	20	1.00	01/01/1982	03/01/1982
000130	IF1000	90	1.00	01/01/1982	10/01/1982
000130	IF1000	100	0.50	10/01/1982	01/01/1983
000140	IF1000	90	0.50	10/01/1982	01/01/1983
000140	IF2000	100	1.00	01/01/1982	03/01/1982
000140	IF2000	100	0.50	03/01/1982	07/01/1982
000140	IF2000	110	0.50	03/01/1982	07/01/1982
000140	IF2000	110	0.50	10/01/1982	01/01/1983
000150	MA2112	60	1.00	01/01/1982	07/15/1982
000150	MA2112	180	1.00	07/15/1982	02/01/1983
000160	MA2113	60	1.00	07/15/1982	02/01/1983
000170	MA2112	60	1.00	01/01/1982	06/01/1983
000170	MA2112	70	1.00	06/01/1982	02/01/1983
000170	MA2113	80	1.00	01/01/1982	02/01/1983
000180	MA2113	70	1.00	04/01/1982	06/15/1982
000190	MA2112	70	1.00	02/01/1982	10/01/1982
000190	MA2112	80	1.00	10/01/1982	10/01/1983
000200	MA2111	50	1.00	01/01/1982	06/15/1982
000200	MA2111	60	1.00	06/15/1982	02/01/1983
000210	MA2113	80	0.50	10/01/1982	02/01/1983
000210	MA2113	180	0.50	10/01/1982	02/01/1983
000220	MA2111	40	1.00	01/01/1982	02/01/1983
000230	AD3111	60	1.00	01/01/1982	03/15/1982
000230	AD3111	60	0.50	03/15/1982	04/15/1982
000230	AD3111	70	0.50	03/15/1982	10/15/1982
000230	AD3111	80	0.50	04/15/1982	10/15/1982
000230	AD3111	180	1.00	10/15/1982	01/01/1983

Contents (Rows 39–75)

EMPNO	PROJNO	ACTNO	EMPTIME	EMSTDATE	EMENDATE
000240	AD3111	70	1.00	02/15/1982	09/15/1982
000240	AD3111	80	1.00	09/15/1982	01/01/1983
000250	AD3112	60	1.00	01/01/1982	02/01/1982
000250	AD3112	60	0.50	02/01/1982	03/15/1982
000250	AD3112	60	0.50	12/01/1982	01/01/1983
000250	AD3112	60	1.00	01/01/1983	02/01/1983
000250	AD3112	70	0.50	02/01/1982	03/15/1982
000250	AD3112	70	1.00	03/15/1982	08/15/1982
000250	AD3112	70	0.25	08/15/1982	10/15/1982
000250	AD3112	80	0.25	08/15/1982	10/15/1982
000250	AD3112	80	0.50	10/15/1982	12/01/1982
000250	AD3112	180	0.50	08/15/1982	01/01/1983
000260	AD3113	70	0.50	06/15/1982	07/01/1982
000260	AD3113	70	1.00	07/01/1982	02/01/1983
000260	AD3113	80	1.00	01/01/1982	03/01/1982
000260	AD3113	80	0.50	03/01/1982	04/15/1982
000260	AD3113	180	0.50	03/01/1982	04/15/1982
000260	AD3113	180	1.00	04/15/1982	06/01/1982
000260	AD3113	180	0.50	06/01/1982	07/01/1982
000270	AD3113	60	0.50	03/01/1982	04/01/1982
000270	AD3113	60	1.00	04/01/1982	09/01/1982
000270	AD3113	60	0.25	09/01/1982	10/15/1982
000270	AD3113	70	0.75	09/01/1982	10/15/1982
000270	AD3113	70	1.00	10/15/1982	02/01/1983
000270	AD3113	80	1.00	01/01/1982	03/01/1982
000270	AD3113	80	0.50	03/01/1982	04/01/1982
000280	OP1010	130	1.00	01/01/1982	02/01/1983
000290	OP1010	130	1.00	01/01/1982	02/01/1983
000300	OP1010	130	1.00	01/01/1982	02/01/1983
000310	OP1010	130	1.00	01/01/1982	02/01/1983
000320	OP2011	140	0.75	01/01/1982	02/01/1983
000320	OP2011	150	0.25	01/01/1982	02/01/1983
000330	OP2012	140	0.25	01/01/1982	02/01/1983
000330	OP2012	160	0.75	01/01/1982	02/01/1983
000340	OP2013	140	0.50	01/01/1982	02/01/1983
000340	OP2013	170	0.50	01/01/1982	02/01/1983
000020	PL2100	30	1.00	01/01/1982	09/15/1982

75 record(s) selected.