

# Db2 Cheat Sheet for development



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Get the most recent version at  
<https://github.com/angoca/db2-cheat-sheet/Db2CheatSheetForDev.pdf>

## Execution of a file in the console (db2clp)

- Semi-colon separated sentences:

```
db2 -t
```

- At sign separated sentences (when there is SQL PL code):

```
db2 -td@
```

## Define a terminator character

```
--#SET TERMINATOR @
```

## List all databases (aliases)

```
LIST DB DIRECTORY
```

## Connect to a database (alias)

```
CONNECT TO mydb
```

## Disconnect from a database

```
CONNECT RESET  
TERMINATE
```

## Get values from the environment (registry values)

- Current timestamp  

```
VALUES CURRENT_TIMESTAMP
```
- Connected user  

```
VALUES CURRENT_USER
```
- Current database  

```
VALUES CURRENT_SERVER
```

## List all tables

```
LIST TABLES  
LIST TABLES FOR SCHEMA myuser  
LIST TABLES FOR ALL
```

## Change current schema

```
SET CURRENT_SCHEMA otherschema
```

## Change the isolation level (RR, RS, CS, UR)

```
SET ISOLATION RR
```

## List all tablespaces with their status

```
LIST TABLESPACES
```

## Describe the structure of the table

```
DESCRIBE TABLE tb11
```

## Describe the result of a query

```
DESCRIBE SELECT * FROM tb11
```

## Get help for a Db2 command

```
? command
```

## Get help for a SQL code (SQLXXXX) or SQLstate (YYYYY)

```
? SQLXXX
```

```
? YYYYY
```

## DDL

### Create a schema

```
CREATE SCHEMA sch1
```

### Create a table specifying primary key

```
CREATE TABLE tb11 (col1 CHAR(1) NOT NULL  
PRIMARY KEY)
```

```
CREATE TABLE tb12 (col1 INT NOT NULL, col2  
DATE NOT NULL, PRIMARY KEY (col1, col2))
```

### Create a table specifying tablespaces

```
CREATE TABLE tb13 (col1 INT NOT NULL, col2  
CHAR(1)) IN ts1 INDEX IN ts2
```

### Create a table specifying schema

```
CREATE TABLE sch1.tb14 (col1 INT)
```

### Create a table with auto incremental column

```
CREATE TABLE tb15 (col1 INT NOT NULL  
GENERATED AS IDENTITY)
```

### Create a table like another one

```
CREATE TABLE tb16 LIKE tb11 IN ts1 INDEX IN  
ts2
```

### Comment on table and column

```
COMMENT ON TABLE tb11 IS 'Comment in table'  
COMMENT ON COLUMN tb11.col1 IS 'Description  
of the field'
```

### Declare a temporary table (session schema)

```
DECLARE GLOBAL TEMPORARY TABLE tmp1 (col1  
INT, col2 DATE) ON COMMIT PRESERVE ROWS
```

### Create a global temporary tablespace

```
CREATE GLOBAL TEMPORARY TABLE tmp2 (col1  
INT)
```

### Create an index

```
CREATE INDEX idx1 ON tb12 (col2)
```

### Create a unique index

```
CREATE UNIQUE INDEX idx2 ON tb15 (col1)
```

### Drop an index

```
DROP INDEX idx1
```

### Add a column (requires Reorg table)

```
ALTER TABLE tb11 ADD COLUMN col3 timestamp
```

### Change nullability

```
ALTER TABLE tb11 ALTER COLUMN col3 SET NOT  
NULL
```

### Drop nullability

```
ALTER TABLE tb11 ALTER COLUMN col3 DROP NOT  
NULL
```

### Rename a column

```
ALTER TABLE tb11 RENAME COLUMN col3 TO new3
```

### Drop column

```
ALTER TABLE tb11 DROP COLUMN new3
```

### Create a primary key constraint

```
ALTER TABLE tb15 ADD CONSTRAINT pkt5  
PRIMARY KEY (col1)
```

### Drop primary key

```
ALTER TABLE tb15 DROP PRIMARY KEY
```

### Add identity

```
ALTER TABLE tb12 ALTER col1 SET GENERATED  
ALWAYS AS IDENTITY
```

### Restart identity

```
ALTER TABLE tb12 ALTER col1 RESTART WITH 1
```

### Drop identity

```
ALTER TABLE tb12 ALTER col1 DROP IDENTITY
```

### Create a foreign key

```
ALTER TABLE tb15 ADD CONSTRAINT fkt5  
FOREIGN KEY (col1) REFERENCES tb111 (col1)
```

### Create a check constraint

```
ALTER TABLE tb11 ADD CONSTRAINT chk CHECK  
(col1 in ('a', 'b', 'c'))
```

### Enforce a constraint

```
ALTER TABLE tb11 ALTER CHECK chk ENFORCED
```

### Not enforce a constraint

```
ALTER TABLE tb15 ALTER FOREIGN KEY fkt5 NOT  
ENFORCED
```

### Change the granularity of the locks

```
ALTER TABLE tb11 LOCKSIZE TABLE
```

### Drop a table

```
DROP TABLE tb11
```

### Rename a table

```
RENAME TABLE tb12 TO table2
```

### Truncate a table

```
TRUNCATE TABLE tb11 IMMEDIATE
```

### Create a sequence

```
CREATE SEQUENCE seq AS INTEGER
```

### Restart sequence

```
ALTER SEQUENCE seq RESTART WITH 15
```



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### Create a stored procedure

```
CREATE OR REPLACE PROCEDURE prc1 (IN val  
INT, OUT ret DATE) SPECIFIC mypr BEGIN SET  
ret = (SELECT col2 FROM tbl2 WHERE col1 =  
val); END @
```

### Create a trigger

```
CREATE TRIGGER cp_val AFTER INSERT ON tbl1  
REFERENCING NEW AS n FOR EACH ROW INSERT  
INTO tbl2 VALUES (n.col1, n.col2)
```

### Create a view

```
CREATE VIEW vw1 AS SELECT col2 FROM tbl1
```

## DCL

### Grant on a table

```
GRANT SELECT, INSERT ON TABLE tbl1 TO user
```

### Grant execution on a stored procedure

```
GRANT EXECUTE ON PROCEDURE prc1(INT, DATE)  
TO USER jdoe  
GRANT EXECUTE ON SPECIFIC PROCEDURE mypr TO  
GROUP admins
```

### Revoke on a table

```
REVOKE DELETE ON TABLE mytable FROM recur
```

## DML

### Insert values on a table

```
INSERT INTO tbl3 VALUES (2, 'b')  
INSERT INTO tbl3 VALUES (3, 'c'), (4, 'd'),  
(5, 'e') --Atomic
```

### Insert certain columns

```
INSERT INTO tbl1 (col1) VALUES (6)
```

### Insert values from a select

```
INSERT INTO tbl6 SELECT col1 FROM tbl1
```

### Insert in temporary table

```
INSERT INTO session.tmp1 VALUES (1)
```

### Update fields

```
UPDATE tbl3 SET col1 = 5, mycol2 = 'e' --  
all table  
UPDATE tbl3 SET col2 = 'd' WHERE col1 = 7
```

### Merge (upsert)

```
MERGE INTO tbl3 AS t USING (SELECT col1  
FROM tbl1) s ON (t.col1 = s.col1) WHEN  
MATCHED THEN UPDATE SET col2 = 'X' WHEN  
NOT MATCHED THEN INSERT VALUES (10, 'X')
```

### Delete rows

```
DELETE FROM tbl1 --all table  
DELETE FROM tbl1 WHERE col1 > 5
```

### Export

```
EXPORT TO myfile OF DEL SELECT * FROM tbl1
```

### Import

```
IMPORT FROM myfile OF DEL INSERT INTO  
mytable1
```

### Cursor

```
DECLARE cur1 CURSOR FOR SELECT * FROM tbl1
```

### Load

```
LOAD FROM myfile OF DEL INSERT INTO tbl1  
LOAD FROM cur1 OF CURSOR INSERT INTO tbl1
```

### Query the status of the load in a table

```
LOAD QUERY TABLE tbl1
```

### Set integrity

```
SET INTEGRITY FOR tbl1 IMMEDIATE CHECKED
```

### Ingest

```
INGEST FROM FILE myfile FORMAT DELIMITED  
INSERT INTO tbl1
```

### Get the next value from a sequence

```
VALUES NEXT VALUE FOR seq  
INSERT INTO tbl3 (col1) VALUES (NEXT VALUE  
FOR seq)
```

## TCL

### Commit changes

```
COMMIT
```

### Create a savepoint

```
SAVEPOINT sp1 ON ROLLBACK RETAIN CURSORS
```

### Undo changes until savepoint

```
ROLLBACK TO SAVEPOINT sp1
```

### Undo changes

```
ROLLBACK
```

## Queries

### Put a lock at table level

```
LOCK TABLE tbl1 IN EXCLUSIVE MODE
```

### Execute a query without regard of commit rows

```
SELECT * FROM tbl1 WITH UR --RR,RS,CS
```

### Execute a query with only 5 rows

```
SELECT * FROM tbl1 FETCH FIRST 5 ROWS ONLY
```

### Perform a query to a dummy table (dual)

```
SELECT 'Any string' FROM SYSIBM.SYSDUMMY1
```

### Perform a query calling a function

```
SELECT HEX(col2) FROM tbl5
```

### Call a function

```
VALUES HEX('AnyText')
```

### Perform a cast

```
VALUES CAST('123' AS INTEGER)
```

### Concatenate

```
VALUES 'AnyText' || 5  
VALUES 'AnyText' concat 5
```

### Escape a single quote in a text field

```
VALUES 'Sinead o''Connor'
```

### Query the database catalog

```
SELECT * FROM SYSCAT.TABLES  
SELECT * FROM SYSCAT.TABAUTH  
SELECT * FROM SYSCAT.ROUTINES
```

## SQL PL

### Create a compound statement – Anonymous block

```
BEGIN DECLARE val SMALLINT; SET val = 1;  
WHILE (val <= 5) DO INSERT INTO tbl5  
VALUES (val, val); SET val = val + 1; END  
WHILE; END @
```

### Perform a reorg via ADMIN\_CMD (Sometimes required after “alter table”)

```
CALL SYSPROC.ADMIN_CMD('REORG TABLE tbl1')
```

### Call a stored procedure with an IN and an OUTPUT parameter

```
CALL prc1(5, ?)
```



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