

DIS Exercise 4

13.05.15

4.1a) > . /home/local/db2inst1/sqllib/db2profile

> db2 connect to VSISP user vsisp81

> db2 values current isolation

blank, default isolation level, CS (Cursor Stability)

Password:
of7GeM4Y

b) > db2

db2 => CREATE TABLE OPK (ID INTEGER NOT NULL, NAME VARCHAR(255))

db2 => INSERT INTO OPK (ID, NAME) VALUES (1, 'A') (5, 'E')
(2, 'B') (6, 'F')
(3, 'C') (7, 'G')
(4, 'D') (8, 'H')
(9, 'I')

c) > export DB2OPTIONS=+c

> db2

db2 => SELECT * FROM OPK WHERE ID = 4

> db2 attach to vsisl4 user vsisp81

> db2 list applications

> db2 get snapshot for locks for application agentid ...

Object Type	Table Name	Mode
Internal Plan Lock	/	S
Table	SYSUSERAUTH	IS

d) > db2 set current isolation = RS

> db2

db2 => SELECT * FROM OPK WHERE ID = 4

> db2 ~~attach~~ ... get snapshot ...

Object Type	Table Name	Mode
Row	OPK	NS
Internal Plan Lock	/	S

4.2 a.) First connection

second connection

PHANTOM
READ
Read Stability

db1 => SELECT * FROM OPK WHERE
ID > 5db2 => INSERT INTO OPK (ID, NAME) VALUES
(10, 'J')db2 => SELECT * FROM OPK WHERE
ID > 5

commit

What happens? - INSERT successful

What can be observed? - New entry appears

b.) db2 SET current isolation = RR

What can be observed now? - INSERT of connection 2 "waits",
New entry doesn't appear

What locks are held, before the commit of the first transaction?

Object Type	Table Name	Mode
Internal Plan Lock	/	S
Table	OPK	S
Table	SYSUSERAUTH	IS

What does the table content look like, after the commit of the first transaction has been executed?

After the commit, the new entry appears

4.2 c) First conn: db2 => SELECT * FROM OPK WHERE ID=4

second conn: db2 => UPDATE OPK SET NAME='Y' WHERE ID=6

What happens? ~~INSERT~~ UPDATE "waits"

Which locks are held?

Object Type	Table Name	Mode
Internal Plan Lock	-	S
Table	OPK	S

After commit: UPDATE success

d) first conn: db2 => CREATE TABLE MPK
(ID INTEGER NOT NULL PRIMARY KEY,
NAME VARCHAR(255))

db2 => commit

db2 => INSERT INTO MPK (ID, NAME) values
(1, 'AA') (2, 'BB') ... (8, 'H')

db2 => commit

e) What can be observed?

Object Type	Table Name	Mode
Row	MPK	S
Table	MPK	IS
Table	SYSTABLES	IS

UPDATE doesn't "wait" and succeeds

4.3 a.) first conn: select * from OPK where ID = 1

second conn: select * from OPK where ID = 2

What happens? - second connection "waits"
first connection succeeds

Which locks are held? first connection

Object Type	Table Name	Mode
Row	OPK	X
Table	OPK	SIX

Second connection:

~~no locks~~ INTERNAL VARIATION LOCK

Can the transactions be completed successfully? - YES, they can!
(after commit)

b.) What can be observed now and how can it be explained?

- second connection waits, first connection succeeds

Locks: first connection (see a.)

~~Locks second connection~~

Object Type	Table Name	Mode	Status
Table	OPK	IX	converting

Dead lock.
connection 2 success
connection 1 rollback

~~26704 +~~
26704 +
17080 L
26704 +
24082 +
24080 L
26704 +
27249 P