

Lab3

Part 1:

All results are obtained from session 2 after session 1 doing the update and before session 1 commit anything.

Initial state:

```
+-----+
| enrollment |
+-----+
|      123 |
+-----+
```

Session 1 has the autocommit turned OFF, and session 2 has autocommit turned ON. Result is displayed as follow:

	READ UNCOMMITTED (S2)	READ COMMITTED (S2)	REPEATABLE READ (S2)	SERIALIZABLE (S2)
READ UNCOMMITTED (S1)	103	123	123	123
READ COMMITTED (S1)	103	123	123	123
REPEATABLE READ (S1)	103	123	123	123
SERIALIZABLE (S1)	103	123	123	123

No matter what session 1 is set to, when session 2 is set to READ UNCOMMITTED, it reads the uncommitted result from session 1 which is 103. Otherwise, it reads the original data which is 123.

It is because only READ UNCOMMITTED enables dirty read for session 2 to allow it reading the value which is written by session 1 that has not been committed. Other

cases all disable the dirty read which only reads result after other transactions commit.

Note: If session 2 has autocommit turned OFF, when session 2 is set to SERIALIZABLE, it will gives following error message no matter what session 1 is set to:

ERROR 1205 (HY000): Lock wait timeout exceeded; try restarting transaction

In this case, the result is in the following table:

	READ UNCOMMITTED (S2)	READ COMMITTED (S2)	REPEATABLE READ (S2)	SERIALIZABLE (S2)
READ UNCOMMITTED (S1)	103	123	123	ERROR 1205 (HY000): Lock wait timeout exceeded; try restarting transaction
READ COMMITTED (S1)	103	123	123	ERROR 1205 (HY000): Lock wait timeout exceeded; try restarting transaction
REPEATABLE READ (S1)	103	123	123	ERROR 1205 (HY000): Lock wait timeout exceeded; try restarting transaction
SERIALIZABLE (S1)	103	123	123	ERROR 1205 (HY000): Lock wait timeout exceeded; try restarting transaction

Part 1 Back up:

CASE 1: Session 1: READ UNCOMMITTED; Session 2: READ UNCOMMITTED:

```
+-----+
| enrollment |
+-----+
|          103 |
+-----+
```

CASE 2: Session 1: READ UNCOMMITTED; Session 2: READ COMMITTED:

```
+-----+
| enrollment |
+-----+
|          123 |
+-----+
```

CASE 3: Session 1: READ UNCOMMITTED; Session 2: REPEATABLE READ:

```
+-----+
| enrollment |
+-----+
|          123 |
+-----+
```

CASE 4: Session 1: READ UNCOMMITTED; Session 2: SERIALIZABLE:

```
+-----+
| enrollment |
+-----+
|          123 |
+-----+
```

CASE 5: Session 1: READ COMMITTED; Session 2: READ UNCOMMITTED:

```
+-----+
| enrollment |
+-----+
|          103 |
+-----+
```

CASE 6: Session 1: READ COMMITTED; Session 2: READ COMMITTED:

```
+-----+
| enrollment |
```

```
+-----+
|      123 |
+-----+
```

CASE 7: Session 1: READ COMMITTED; Session 2: REPEATABLE READ:

```
+-----+
| enrollment |
+-----+
|      123 |
+-----+
```

CASE 8: Session 1: READ COMMITTED; Session 2: SERIALIZABLE:

```
+-----+
| enrollment |
+-----+
|      123 |
+-----+
```

CASE 9: Session 1: REPEATABLE READ; Session 2: READ UNCOMMITTED:

```
+-----+
| enrollment |
+-----+
|      103 |
+-----+
```

CASE 10: Session 1: REPEATABLE READ; Session 2: READ COMMITTED:

```
+-----+
| enrollment |
+-----+
|      123 |
+-----+
```

CASE 11: Session 1: REPEATABLE READ; Session 2: REPEATABLE READ:

```
+-----+
| enrollment |
+-----+
|      123 |
+-----+
```

CASE 12: Session 1: REPEATABLE READ; Session 2: SERIALIZABLE:

```
+-----+
| enrollment |
+-----+
|          123 |
+-----+
```

CASE 13: Session 1: SERIALIZABLE; Session 2: READ UNCOMMITTED:

```
+-----+
| enrollment |
+-----+
|          103 |
+-----+
```

CASE 14: Session 1: SERIALIZABLE; Session 2: READ COMMITTED:

```
+-----+
| enrollment |
+-----+
|          123 |
+-----+
```

CASE 15: Session 1: SERIALIZABLE; Session 2: REPEATABLE READ:

```
+-----+
| enrollment |
+-----+
|          123 |
+-----+
```

CASE 16: Session 1: SERIALIZABLE; Session 2: SERIALIZABLE:

```
+-----+
| enrollment |
+-----+
|          123 |
+-----+
```