

TRANSACTIONS and LOCKING

Session 1

Session 2

Act 1

```
monadtall 50.0°C
You are now connected to database "transaction" as user "root"
Time: 0.001s
[Wed Mar 22 17:57:01 2023] Marc s1
>create table numbers (
  number int PRIMARY KEY
) ENGINE=INNODB;
Query OK, 0 rows affected
Time: 0.013s
[Wed Mar 22 17:57:01 2023] Marc s1
>insert into numbers values ('1'),('2'),('3'),('4'),('5');
Query OK, 5 rows affected
Time: 0.006s
[Wed Mar 22 17:57:01 2023] Marc s1
>set autocommit = 0;
Query OK, 0 rows affected
Time: 0.001s
[Wed Mar 22 17:57:01 2023] Marc s1
>insert into numbers values ('6');
Query OK, 1 row affected
Time: 0.002s
[Wed Mar 22 17:57:01 2023] Marc s1
>
```

```
@ @ @ @ @
[Wed Mar 22 17:59:12 2023] Marc s2
>select * from numbers
+-----+
| number |
+-----+
| 1       |
| 2       |
| 3       |
| 4       |
| 5       |
+-----+

5 rows in set
Time: 0.010s
[Wed Mar 22 17:59:12 2023] Marc s2
>
```

```
[Wed Mar 22 17:57:01 2023] Marc s1
>commit;
Query OK, 0 rows affected
Time: 0.003s
[Wed Mar 22 17:57:01 2023] Marc s1
>
```

```
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[Wed Mar 22 17:59:12 2023] Marc s2
>select * from numbers
+-----+
| number |
+-----+
| 1       |
| 2       |
| 3       |
| 4       |
| 5       |
| 6       |
+-----+

6 rows in set
Time: 0.006s
[Wed Mar 22 17:59:12 2023] Marc s2
>
```

Act 2

```
monadtall 47.0°C
[Wed Mar 22 17:57:01 2023] Marc s1
>insert into numbers values ('7');
Query OK, 1 row affected
Time: 0.001s
[Wed Mar 22 17:57:01 2023] Marc s1
>
```

```
[Wed Mar 22 17:59:12 2023] Marc s2
>SET SESSION TRANSACTION ISOLATION LEVEL READ UNCOMMITTED
Query OK, 0 rows affected
Time: 0.001s
[Wed Mar 22 17:59:12 2023] Marc s2
>select * from numbers
+-----+
| number |
+-----+
| 1      |
| 2      |
| 3      |
| 4      |
| 5      |
| 6      |
| 7      |
+-----+

7 rows in set
Time: 0.005s
[Wed Mar 22 17:59:12 2023] Marc s2
>
```

Act 3

```
monadtall 45.0°C
[Fri Mar 24 15:47:40 2023] Marc s1
>rollback
Query OK, 0 rows affected
Time: 0.001s
[Fri Mar 24 15:47:40 2023] Marc s1
>select * from numbers
+-----+
| number |
+-----+
| 1      |
| 2      |
| 3      |
| 4      |
| 5      |
| 6      |
+-----+

6 rows in set
Time: 0.004s
[Fri Mar 24 15:47:40 2023] Marc s1
>
```

```
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[Fri Mar 24 15:47:58 2023] Marc s2
>select * from numbers
+-----+
| number |
+-----+
| 1      |
| 2      |
| 3      |
| 4      |
| 5      |
| 6      |
+-----+

6 rows in set
Time: 0.005s
[Fri Mar 24 15:47:58 2023] Marc s2
>
```

Act 4

```
monadtall 48.0°C
[Fri Mar 24 15:47:40 2023] Marc s1
>select max(number) from numbers;
+-----+
| max(number) |
+-----+
| 6           |
+-----+

1 row in set
Time: 0.008s
[Fri Mar 24 15:47:40 2023] Marc s1
>
```

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```
[Fri Mar 24 15:47:58 2023] Marc s2
>start transaction
Query OK, 0 rows affected
Time: 0.001s
[Fri Mar 24 15:47:58 2023] Marc s2
>insert into numbers values(7);
Query OK, 1 row affected
Time: 0.001s
[Fri Mar 24 15:47:58 2023] Marc s2
>
```

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```
[Fri Mar 24 15:47:58 2023] Marc s2
>select max(number) from numbers;
+-----+
| max(number) |
+-----+
| 7           |
+-----+

1 row in set
Time: 0.007s
[Fri Mar 24 15:47:58 2023] Marc s2
>
```

```
monadtall 53.0°C
[Fri Mar 24 15:47:40 2023] Marc s1
>select max(number) from numbers;
+-----+
| max(number) |
+-----+
| 6           |
+-----+

1 row in set
Time: 0.007s
[Fri Mar 24 15:47:40 2023] Marc s1
>
```

```

[Fri Mar 24 15:47:58 2023] Marc s2
>commit;
Query OK, 0 rows affected
Time: 0.004s
[Fri Mar 24 15:47:58 2023] Marc s2
>
```

```
monadtall 50.0°C
[Fri Mar 24 15:47:40 2023] Marc s1
>select max(number) from numbers;
+-----+
| max(number) |
+-----+
| 7           |
+-----+

1 row in set
Time: 0.007s
[Fri Mar 24 15:47:40 2023] Marc s1
>
```

```
monadtall 48.0°C
[Fri Mar 24 15:47:40 2023] Marc s1
>delete from numbers where number = 7;
You're about to run a destructive command.
Do you want to proceed? (y/n): Y
Your call!
Query OK, 1 row affected
Time: 0.005s
[Fri Mar 24 15:47:40 2023] Marc s1
>
```

```
monadtall 51.0°C
[Fri Mar 24 15:47:40 2023] Marc s1
>commit;
Query OK, 0 rows affected
Time: 0.001s
[Fri Mar 24 15:47:40 2023] Marc s1
>
```

Act 5

```
monadtall 52.0°C
[Fri Mar 24 15:47:40 2023] Marc s1
>select max(number) from numbers;
+-----+
| max(number) |
+-----+
| 6           |
+-----+

1 row in set
Time: 0.008s
[Fri Mar 24 15:47:40 2023] Marc s1
>
```

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```
[Fri Mar 24 15:47:58 2023] Marc s2
>start transaction
Query OK, 0 rows affected
Time: 0.001s
[Fri Mar 24 15:47:58 2023] Marc s2
>
```

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```
[Fri Mar 24 16:25:07 2023] Marc s2
>insert into numbers values (7);
Query OK, 1 row affected
Time: 0.001s
[Fri Mar 24 16:25:07 2023] Marc s2
>select max(number) from numbers;
+-----+
| max(number) |
+-----+
| 7           |
+-----+

1 row in set
Time: 0.005s
[Fri Mar 24 16:25:07 2023] Marc s2
>
```

monadtall 51.0°C

```
[Fri Mar 24 15:47:40 2023] Marc s1
>SET SESSION TRANSACTION ISOLATION LEVEL REPEATABLE READ
Query OK, 0 rows affected
Time: 0.001s
[Fri Mar 24 15:47:40 2023] Marc s1
>
```



```
monadtall 54.0°C
[Fri Mar 24 15:47:40 2023] Marc s1
>select max(number) from numbers;
+-----+
| max(number) |
+-----+
| 6           |
+-----+

1 row in set
Time: 0.006s
[Fri Mar 24 15:47:40 2023] Marc s1
>
```

```
monadtall 48.0°C
[Fri Mar 24 15:47:40 2023] Marc s1
>commit;
Query OK, 0 rows affected
Time: 0.001s
[Fri Mar 24 15:47:40 2023] Marc s1
>select max(number) from numbers;
+-----+
| max(number) |
+-----+
| 7           |
+-----+

1 row in set
Time: 0.003s
[Fri Mar 24 15:47:40 2023] Marc s1
>
```

```
@ @ @ @ @
[Fri Mar 24 16:25:07 2023] Marc s2
>delete from numbers where number = 7;
You're about to run a destructive command.
Do you want to proceed? (y/n): y
Your call!
Query OK, 1 row affected
Time: 0.005s
[Fri Mar 24 16:25:07 2023] Marc s2
>
```

Act 6

monadtall 50.0°C

```
[Fri Mar 24 15:47:40 2023] Marc s1
>SET SESSION TRANSACTION ISOLATION LEVEL SERIALIZABLE
Query OK, 0 rows affected
Time: 0.001s
[Fri Mar 24 15:47:40 2023] Marc s1
>
```

monadtall 43.0°C

```
[Fri Mar 24 16:43:54 2023] Marc s1
>update numbers set number = 12 where number = 3;
Query OK, 1 row affected
Time: 0.004s
[Fri Mar 24 16:43:54 2023] Marc s1
>select * from numbers
+-----+
| number |
+-----+
| 1       |
| 2       |
| 4       |
| 5       |
| 6       |
| 12      |
+-----+

6 rows in set
Time: 0.004s
[Fri Mar 24 16:43:54 2023] Marc s1
>
```

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```
[Fri Mar 24 16:25:07 2023] Marc s2
>update numbers set number = 0 where number = 3;
Query OK, 0 rows affected
Time: 0.001s
[Fri Mar 24 16:25:07 2023] Marc s2
>
```

```

[Mon Mar 20 16:25:07 2023] Marc s2
>select * from numbers
+-----+
| number |
+-----+
| 1       |
| 2       |
| 4       |
| 5       |
| 6       |
| 12      |
+-----+

6 rows in set
Time: 0.006s
[Mon Mar 20 16:25:07 2023] Marc s2
>

```

Act 7

```

monadtall 46.0°C
[Sat Mar 25 19:08:08 2023] Marc s1
>begin
Query OK, 0 rows affected
Time: 0.001s
[Sat Mar 25 19:08:08 2023] Marc s1
>update numbers set `number` = 100 where `number` = 0
Query OK, 1 row affected
Time: 0.001s
[Sat Mar 25 19:08:08 2023] Marc s1
>

```

```

[Sat Mar 25 19:06:38 2023] Marc s2
>begin
Query OK, 0 rows affected
Time: 0.001s
[Sat Mar 25 19:06:38 2023] Marc s2
>update numbers set `number` = 101 where `number` = 1
Query OK, 1 row affected
Time: 0.002s
[Sat Mar 25 19:06:38 2023] Marc s2
>update numbers set `number` = 102 where `number` = 0
Query OK, 1 row affected
Time: 48.064s
[Sat Mar 25 19:06:38 2023] Marc s2
>

```

```
[Sat Mar 25 19:08:08 2023] Marc s1  
>update numbers set `number` = 103 where `number` = 1  
(1213, 'Deadlock found when trying to get lock; try restarting transaction')  
[Sat Mar 25 19:08:08 2023] Marc s1  
>
```