Huibo Zhao

hz2480

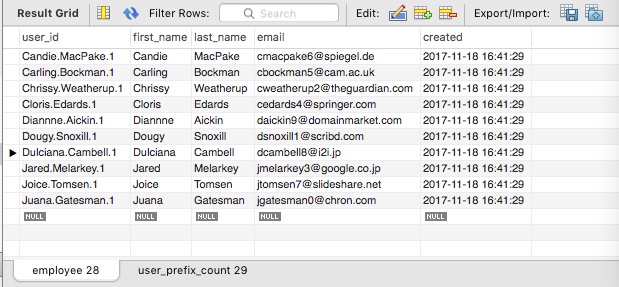
COMS4111 SEC003

EC1

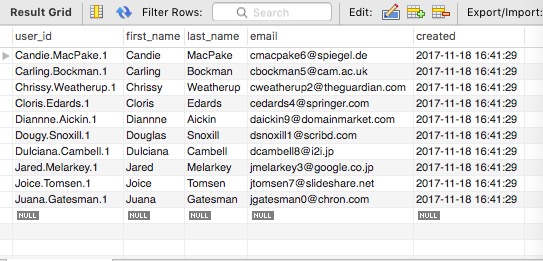
Nov.18th.2017

The ddl and test sql codes are appended at the end of this document.

Employee table after Initial load & Test 1:



Employee table after Test 2:

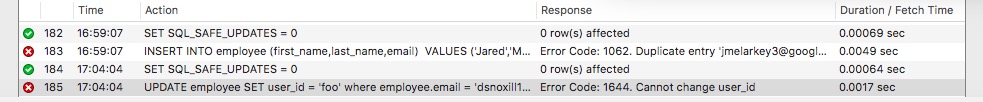


Result after Test 3:



Full text: 16:59:07 INSERT INTO employee (first\_name,last\_name,email) VALUES ('Jared','Melarkey','jmelarkey3@google.co.jp') Error Code: 1062. Duplicate entry 'jmelarkey3@google.co.jp' for key 'email' 0.0049 sec

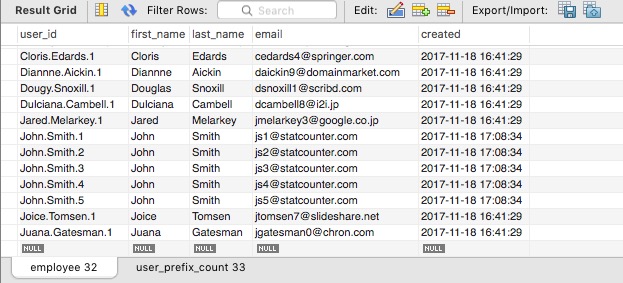
Result after Test 4:



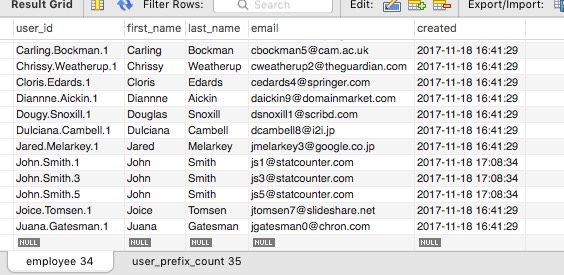
Full text: 17:04:04 UPDATE employee SET user\_id = 'foo' where employee.email = 'dsnoxill1@scribd.com' Error Code: 1644. Cannot change user\_id 0.0017 sec

Test 5:

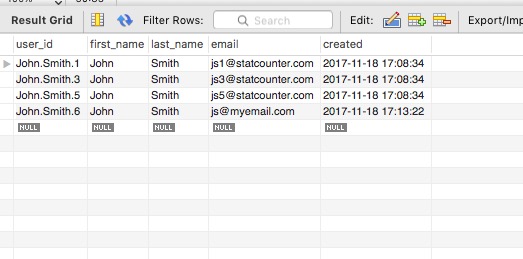
Employee table after first insert (5 John Smith):



Employee table after delete:



Result for select statement after second insert (Single John Smith):



Appendix:

DDL:

--

-- Table structure for table `Employee`

--

DROP TABLE IF EXISTS `Employee`;

CREATE TABLE `Employee` (

`user\_id` varchar(32) NOT NULL,

`first\_name` varchar(32) NOT NULL,

`last\_name` varchar(32) NOT NULL,

`email` varchar(32) NOT NULL,

`created` datetime,

PRIMARY KEY (`user\_id`),

UNIQUE (`email`)

) ENGINE=InnoDB DEFAULT CHARSET=utf8;

--

-- Table structure for table `user\_prefix\_count`

--

DROP TABLE IF EXISTS `user\_prefix\_count`;

CREATE TABLE `user\_prefix\_count` (

`prefix` varchar(32) NOT NULL,

`max\_value` int(12) NOT NULL,

PRIMARY KEY (`prefix`)

) ENGINE=InnoDB DEFAULT CHARSET=utf8;

# trigger before insert into `employee`

DROP TRIGGER IF EXISTS `trigger\_insert\_employee`;

DELIMITER $$

CREATE TRIGGER `trigger\_insert\_employee`

BEFORE INSERT ON `employee` FOR EACH ROW

BEGIN

DECLARE `prefix\_name` VARCHAR(32);

DECLARE `existed` int(1);

DECLARE `count` int(12);

SET `prefix\_name` = CONCAT(New.`first\_name`, '.', New.`last\_name`);

# check if `prefix\_name` existed or not

SET `existed` = (select exists (select \* from `user\_prefix\_count` where `prefix` = `prefix\_name`));

# if existed, we increment its max\_value field

# if not existed, we insert a new tuple to the `user\_prefix\_count` table

IF `existed` = 1 THEN

SET `count` = (select `max\_value` from `user\_prefix\_count` where `prefix` = `prefix\_name`) + 1;

UPDATE `user\_prefix\_count` SET `max\_value` = `count` where `user\_prefix\_count`.`prefix` = `prefix\_name`;

ELSE

SET `count` = 1;

INSERT INTO `user\_prefix\_count` (prefix,max\_value) VALUES (`prefix\_name`,1);

END IF;

SET New.`user\_id` = CONCAT(New.`first\_name`, '.', New.`last\_name`,'.',`count`);

SET New.`created` = CURRENT\_TIMESTAMP;

END $$

DELIMITER ;

# trigger before update on 'employee'

DROP TRIGGER IF EXISTS `trigger\_update\_employee`;

DELIMITER $$

CREATE TRIGGER `trigger\_update\_employee`

BEFORE UPDATE ON `employee` FOR EACH ROW

BEGIN

SET NEW.`created` = Old.`created`;

IF NOT NEW.`user\_id` = Old.`user\_id` THEN

SIGNAL SQLSTATE '45001'

SET MESSAGE\_TEXT = 'Cannot change user\_id';

end if;

END $$

DELIMITER ;

Test Codes:

SET SQL\_SAFE\_UPDATES = 0;

### test 1 ####################################################

/\*

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('Candie','MacPake','cmacpake6@spiegel.de');

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('Carling','Bockman','cbockman5@cam.ac.uk');

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('Chrissy','Weatherup','cweatherup2@theguardian.com');

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('Cloris','Edards','cedards4@springer.com');

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('Diannne','Aickin','daickin9@domainmarket.com');

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('Dougy','Snoxill','dsnoxill1@scribd.com');

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('Dulciana','Cambell','dcambell8@i2i.jp');

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('Jared','Melarkey','jmelarkey3@google.co.jp');

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('Joice','Tomsen','jtomsen7@slideshare.net');

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('Juana','Gatesman','jgatesman0@chron.com');

\*/

#####################################################################

### test 2 ####################################################

/\*

UPDATE employee SET first\_name = 'Douglas', `created` = CURRENT\_TIMESTAMP

where employee.first\_name = 'Dougy' and employee.last\_name = 'Snoxill';

\*/

#####################################################################

### test 3 ####################################################

/\*

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('Jared','Melarkey','jmelarkey3@google.co.jp');

\*/

#####################################################################

### test 4 ####################################################

# UPDATE employee SET user\_id = 'foo' where employee.email = 'dsnoxill1@scribd.com';

#####################################################################

### test 5 ####################################################

/\*

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('John','Smith','js1@statcounter.com');

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('John','Smith','js2@statcounter.com');

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('John','Smith','js3@statcounter.com');

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('John','Smith','js4@statcounter.com');

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('John','Smith','js5@statcounter.com');

\*/

/\*

DELETE FROM employee WHERE `email`='js2@statcounter.com';

DELETE FROM employee WHERE `email`='js4@statcounter.com';

\*/

/\*

INSERT INTO employee (first\_name,last\_name,email)

VALUES ('John','Smith','js@myemail.com');

select \* from employee where last\_name = 'Smith';

\*/

#####################################################################

select \* from employee;

select \* from user\_prefix\_count;