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COMS4111 SEC003
EC1
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The ddl and test sql codes are appended at the end of this document.

Employee table after Initial load & Test 1:

Result Grid	Filter Rows:	Search	Edit:	Export/Import:
user_id	first_name	last_name	email	created
Candide.MacPake.1	Candide	MacPake	cmacpake6@spiegel.de	2017-11-18 16:41:29
Carling.Bockman.1	Carling	Bockman	cbockman5@cam.ac.uk	2017-11-18 16:41:29
Chrissy.Weatherup.1	Chrissy	Weatherup	cweatherup2@theguardian.com	2017-11-18 16:41:29
Cloris.Edards.1	Cloris	Edards	cedards4@springer.com	2017-11-18 16:41:29
Diannne.Aickin.1	Diannne	Aickin	daickin9@domainmarket.com	2017-11-18 16:41:29
Dougy.Snoxill.1	Dougy	Snoxill	dsnoxill1@scribd.com	2017-11-18 16:41:29
Dulciana.Cambell.1	Dulciana	Cambell	dcambell8@i2i.jp	2017-11-18 16:41:29
Jared.Melarkey.1	Jared	Melarkey	jmelarkey3@google.co.jp	2017-11-18 16:41:29
Joice.Tomsen.1	Joice	Tomsen	jtomsen7@slideshare.net	2017-11-18 16:41:29
Juana.Gatesman.1	Juana	Gatesman	jgatesman0@chron.com	2017-11-18 16:41:29
NULL	NULL	NULL	NULL	NULL
employee 28		user_prefix_count 29		

Employee table after Test 2:

Result Grid	Filter Rows:	Search	Edit:	Export/Import:
user_id	first_name	last_name	email	created
Candide.MacPake.1	Candide	MacPake	cmacpake6@spiegel.de	2017-11-18 16:41:29
Carling.Bockman.1	Carling	Bockman	cbockman5@cam.ac.uk	2017-11-18 16:41:29
Chrissy.Weatherup.1	Chrissy	Weatherup	cweatherup2@theguardian.com	2017-11-18 16:41:29
Cloris.Edards.1	Cloris	Edards	cedards4@springer.com	2017-11-18 16:41:29
Diannne.Aickin.1	Diannne	Aickin	daickin9@domainmarket.com	2017-11-18 16:41:29
Dougy.Snoxill.1	Douglas	Snoxill	dsnoxill1@scribd.com	2017-11-18 16:41:29
Dulciana.Cambell.1	Dulciana	Cambell	dcambell8@i2i.jp	2017-11-18 16:41:29
Jared.Melarkey.1	Jared	Melarkey	jmelarkey3@google.co.jp	2017-11-18 16:41:29
Joice.Tomsen.1	Joice	Tomsen	jtomsen7@slideshare.net	2017-11-18 16:41:29
Juana.Gatesman.1	Juana	Gatesman	jgatesman0@chron.com	2017-11-18 16:41:29
NULL	NULL	NULL	NULL	NULL

Result after Test 3:

	Time	Action	Response	Duration / Fetch Time
✓ 180	16:54:09	select * from employee LIMIT 0, 1000	10 row(s) returned	0.00043 sec / 0.000...
✓ 181	16:54:09	select * from user_prefix_count LIMIT 0, 1000	10 row(s) returned	0.00080 sec / 0.0001...
✓ 182	16:59:07	SET SQL_SAFE_UPDATES = 0	0 row(s) affected	0.00069 sec
✗ 183	16:59:07	INSERT INTO employee (first_name,last_name,email) VALUES ('Jared','M...	Error Code: 1062. Duplicate entry 'jmelarkey3@googl...	0.0049 sec

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:

	Time	Action	Response	Duration / Fetch Time
✓ 182	16:59:07	SET SQL_SAFE_UPDATES = 0	0 row(s) affected	0.00069 sec
✗ 183	16:59:07	INSERT INTO employee (first_name,last_name,email) VALUES ('Jared','M...	Error Code: 1062. Duplicate entry 'jmelarkey3@googl...	0.0049 sec
✓ 184	17:04:04	SET SQL_SAFE_UPDATES = 0	0 row(s) affected	0.00064 sec
✗ 185	17:04:04	UPDATE employee SET user_id = 'foo' where employee.email = 'dsnoxill1...	Error Code: 1644. Cannot change user_id	0.0017 sec

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):

Result Grid	Filter Rows:	Search	Edit:	Export/Import:
user_id	first_name	last_name	email	created
Cloris.Edards.1	Cloris	Edards	cedards4@springer.com	2017-11-18 16:41:29
Dianne.Aickin.1	Dianne	Aickin	daickin9@domainmarket.com	2017-11-18 16:41:29
Dougy.Snnoxill.1	Douglas	Snnoxill	dsnoxill1@scribd.com	2017-11-18 16:41:29
Dulciana.Cambell.1	Dulciana	Cambell	dcambell8@i2i.jp	2017-11-18 16:41:29
Jared.Melarkey.1	Jared	Melarkey	jmelarkey3@google.co.jp	2017-11-18 16:41:29
John.Smith.1	John	Smith	js1@statcounter.com	2017-11-18 17:08:34
John.Smith.2	John	Smith	js2@statcounter.com	2017-11-18 17:08:34
John.Smith.3	John	Smith	js3@statcounter.com	2017-11-18 17:08:34
John.Smith.4	John	Smith	js4@statcounter.com	2017-11-18 17:08:34
John.Smith.5	John	Smith	js5@statcounter.com	2017-11-18 17:08:34
Joice.Tomsen.1	Joice	Tomsen	jtomsen7@slideshare.net	2017-11-18 16:41:29
Juana.Gatesman.1	Juana	Gatesman	jgatesman0@chron.com	2017-11-18 16:41:29
NULL	NULL	NULL	NULL	NULL
employee 32		user_prefix_count 33		

Result Grid		Filter Rows:		Search		Edit:		Export/Import:	
user_id	first_name	last_name	email		created				
Carling.Bockman.1	Carling	Bockman	cbockman5@cam.ac.uk		2017-11-18 16:41:29				
Chrissy.Weatherup.1	Chrissy	Weatherup	cweatherup2@theguardian.com		2017-11-18 16:41:29				
Cloris.Edards.1	Cloris	Edards	cedards4@springer.com		2017-11-18 16:41:29				
Diannne.Aickin.1	Diannne	Aickin	daickin9@domainmarket.com		2017-11-18 16:41:29				
Dougy.Snoxill.1	Douglas	Snoxill	dsnoxill1@scribd.com		2017-11-18 16:41:29				
Dulciana.Cambell.1	Dulciana	Cambell	dcambell8@i2i.jp		2017-11-18 16:41:29				
Jared.Melarkey.1	Jared	Melarkey	jmelarkey3@google.co.jp		2017-11-18 16:41:29				
John.Smith.1	John	Smith	js1@statcounter.com		2017-11-18 17:08:34				
John.Smith.3	John	Smith	js3@statcounter.com		2017-11-18 17:08:34				
John.Smith.5	John	Smith	js5@statcounter.com		2017-11-18 17:08:34				
Joice.Tomsen.1	Joice	Tomsen	jtomsen7@slideshare.net		2017-11-18 16:41:29				
Juana.Gatesman.1	Juana	Gatesman	jgatesman0@chron.com		2017-11-18 16:41:29				
NULL	NULL	NULL	NULL		NULL				
employee 34		user_prefix_count 35							

[illegible]

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 ('Dianne','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;

```

