



Ten Minute Design 7

Stored Procedures 2 → CreateUsers3

Elementary School Library

Software Engineering
CSCI-3321

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Computer Science Department

Grab Documents

Reload ESL5TH → If Necessary To Get Your Procedures

Query 1 Administration - Data Export x

Localhost Data Export Advanced Options...

Object Selection Export Progress

Tables to Export

Exp...	Schema
<input checked="" type="checkbox"/>	esl5th
<input type="checkbox"/>	esl_student
<input type="checkbox"/>	libraryth
<input type="checkbox"/>	sys
<input type="checkbox"/>	trinitylibrary

Refresh Dump Structure and Dat Select Views Select Tables Unselect All

Objects to Export

~~Dump Stored Procedures and Functions~~ Dump Events Dump Triggers

Export Options

Export to Dump Project Folder C:\Users\thicks\Documents\dumps\Dump20191229 ...

Each table will be exported into a separate file. This allows a selective restore, but may be slower.

Export to Self-Contained File C:\Temp\Ten Minute Design\ESL5TH.sql ...

All selected database objects will be exported into a single, self-contained file.

Create Dump in a Single Transaction (self-contained file only) Include Create Schema

Press [Start Export] to start... Start Export

If Necessary!


Return To The Task!

100,000 User Records
For A Final Application
Check-Out
IDs In Random Order

Our CreateUsers2 → Only Fills ID

Column Name	Datatype	PK	NN	UQ	B	UN	ZF	AI	G	Default/Expression
◇ ID	INT(11)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
◇ First	VARCHAR(15)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
◇ MI	CHAR(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
◇ Last	VARCHAR(25)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
◇ FullName	VARCHAR(40)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
◇ Email	VARCHAR(40)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
◇ Zipcode	VARCHAR(255)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
◇ DateDeleted	DATE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL
◇ Deleted	CHAR(1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NULL

User		UserType	
ID	AUTO INT	ID	AUTO INT
First	VarChar(15)	Description	VarChar(100)
MI	Char(1)	Deleted	Char(1)
Last	VarChar(25)	Examples: Student, Faculty, Librarian, Guest	
UserTypeID	Int		
FullName	VarChar(40)		
Email	VarChar(40)		
Zipcode	Char(5)		
DateDeleted	Date		
Deleted	Char(1)		



1 - Create Procedure CreateUsers3

2 - Begin With The Code In CreateUsers2

Stored Procedure
CreateUsers3

Randomly Fill First

Create Procedure CreateUsers3 → Add The Following Code - 1

```
1 • CREATE PROCEDURE `CreateUsers3` (IN NoUsers INT)
2 BEGIN
3
4 DECLARE Counter INT Default 1 ;
5 DECLARE Pos1, Pos2, Temp1, Temp2 INT;
6 # Delete All Records From File
7     DELETE FROM User;
8 # Create A TempID to Store RecNos
9     ALTER TABLE User ADD TempID INT;
10
11 # Create NoUsers Records --> Fill ID & TempID With 1, 2, 3, ... , NoUsers
12     loop1: LOOP
13         INSERT INTO User(ID, TempID)
14         VALUES (Counter, Counter);
15         #select right( POWER(10, 6) + Counter, 6);
16         SET Counter = Counter + 1;
17         IF (Counter > NoUsers) THEN
18             LEAVE loop1;
19         END IF;
20     END LOOP loop1;
21     If (Counter <= 25) THEN SELECT * FROM User; END IF;
```

Output From Loop1

```
mysql> call createusers3(10);
```

ID	First	MI	Last	FullName	Email	Zipcode	DateDeleted	Deleted	TempID
1	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	1
2	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	2
3	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	3
4	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	4
5	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	5
6	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	6
7	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	7
8	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	8
9	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	9
10	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	10

```
10 rows in set (0.16 sec)
```

1 - IDs Contain 1, 2, 3, ... , NoUsers

Create Procedure CreateUsers3 → Add The Following Code - 2

```
23 # Fill Pos1 & Pos2 With Two Random Nos In Range 1, 2, 3, ... , NoUsers
24 # Loop 2 * NoUsers Times --> Swap The ID's In Rec Pos1 and Rec Pos2
25     SET Counter = 1;
26     loop2: LOOP
27         SET Pos1 = FLOOR (RAND() * NoUsers + 1);
28         SET Pos2 = FLOOR (RAND() * NoUsers + 1);
29         SELECT ID INTO Temp1 From User WHERE TempID = Pos1;
30         SELECT ID INTO Temp2 From User WHERE TempID = Pos2;
31
32         UPDATE User SET ID = Temp2 WHERE TempID = Pos1;
33         UPDATE User SET ID = Temp1 WHERE TempID = Pos2;
34         SET Counter = Counter + 1;
35         IF (Counter > 2 * NoUsers) THEN
36             LEAVE loop2;
37         END IF;
38     END LOOP loop2;
39     If (Counter <= 25) THEN SELECT * FROM User; END IF;
```

40

Output From Loop2

ID	First	MI	Last	FullName	Email	Zipcode	DateDeleted	Deleted	TempID
8	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	1
2	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	2
1	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	3
9	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	4
5	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	5
7	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	6
4	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	7
3	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	8
10	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	9
6	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	10

10 rows in set (0.65 sec)

1 - IDs Contain 1, 2, 3, ... , NoUsers → Randomly Mixed

Your Values Will Generally Not Match Mine

Create Procedure CreateUsers3 → Begin With The Following Code - 3

```
41 # Set all of the First to F + 6 digit ID --> ID = 17; First = F000017
42     SET Counter = 1;
43     loop3: LOOP
44         SET Counter = Counter + 1;
45         IF (Counter > NoUsers) THEN
46             LEAVE loop3;
47         END IF;
48     END LOOP loop3;
49     If (Counter <= 25) THEN SELECT * FROM User; END IF;
50
51 # Delete The TempID Field Used To
52     ALTER TABLE User DROP TempID;
53
54     END
```

Desired Output From Loop3 → After You Add Code

ID	First	MI	Last	FullName	Email	Zipcode	DateDeleted	Deleted	TempID
8	F000008	NULL	NULL	NULL	NULL	NULL	NULL	NULL	1
2	F000002	NULL	NULL	NULL	NULL	NULL	NULL	NULL	2
1	F000001	NULL	NULL	NULL	NULL	NULL	NULL	NULL	3
9	F000009	NULL	NULL	NULL	NULL	NULL	NULL	NULL	4
5	F000005	NULL	NULL	NULL	NULL	NULL	NULL	NULL	5
7	F000007	NULL	NULL	NULL	NULL	NULL	NULL	NULL	6
4	F000004	NULL	NULL	NULL	NULL	NULL	NULL	NULL	7
3	F000003	NULL	NULL	NULL	NULL	NULL	NULL	NULL	8
10	F000010	NULL	NULL	NULL	NULL	NULL	NULL	NULL	9
6	F000006	NULL	NULL	NULL	NULL	NULL	NULL	NULL	10

10 rows in set (0.79 sec)

- 1] If The ID = 1, Fill The First With "F000001"
- 2] If The ID = 2, Fill The First With "F000002"
- ...
- 17] If The ID = 17, Fill The First With "F000017"

Your Values Will Generally Not Match Mine

Run This Code → Hint

```
12  loop1: LOOP
13      INSERT INTO User(ID, TempID)
14      VALUES (Counter, Counter);
15      select right( POWER(10, 6) + Counter, 6);
16      SET Counter = Counter + 1;
17      IF (Counter > NoUsers) THEN
18          LEAVE loop1;
19      END IF;
20  END LOOP loop1;
```

select right(POWER(10, 6) + Counter, 6);

First Solution

Solution → Fill The First Field

```
41 # Set all of the First to F + 6 digit ID --> ID = 17; First = F000017
42   SET Counter = 1;
43 loop3: LOOP
44   Update User SET First = CONCAT("F", right( POWER(10, 6) + Counter, 6)) WHERE ID = Counter;
45   SET Counter = Counter + 1;
46   IF (Counter > NoUsers) THEN
47     LEAVE loop3;
48   END IF;
49 END LOOP loop3;
50 If (Counter <= 25) THEN SELECT * FROM User; END IF;
51
52 # Delete The TempID Field Used To
53   ALTER TABLE User DROP TempID;
54
55 END
```

Stored Procedure CreateUsers3

Randomly Fill Last

Desired Output From Loop3 → After You Add Code

ID	First	MI	Last	FullName	Email	Zipcode	DateDeleted	Deleted	TempID
7	F000007	NULL	L000007	NULL	NULL	NULL	NULL	NULL	1
9	F000009	NULL	L000009	NULL	NULL	NULL	NULL	NULL	2
4	F000004	NULL	L000004	NULL	NULL	NULL	NULL	NULL	3
6	F000006	NULL	L000006	NULL	NULL	NULL	NULL	NULL	4
2	F000002	NULL	L000002	NULL	NULL	NULL	NULL	NULL	5
1	F000001	NULL	L000001	NULL	NULL	NULL	NULL	NULL	6
10	F000010	NULL	L000010	NULL	NULL	NULL	NULL	NULL	7
5	F000005	NULL	L000005	NULL	NULL	NULL	NULL	NULL	8
3	F000003	NULL	L000003	NULL	NULL	NULL	NULL	NULL	9
8	F000008	NULL	L000008	NULL	NULL	NULL	NULL	NULL	10

10 rows in set (0.53 sec)

- 1] If The ID = 1, Fill The Last With "L000001"
- 2] If The ID = 2, Fill The Last With "L000002"
- ...
- 17] If The ID = 17, Fill The Last With "L000017"

Your Values Will Generally Not Match Mine

Solution → Fill The Last Field

```
41 # Set all of the First to F + 6 digit ID --> ID = 17; First = F000017
42 SET Counter = 1;
43 loop3: LOOP
44     Update User SET First = CONCAT("F", right( POWER(10, 6) + Counter, 6)) WHERE ID = Counter;
45     Update User SET Last = CONCAT("L", right( POWER(10, 6) + Counter, 6)) WHERE ID = Counter;
46     SET Counter = Counter + 1;
47     IF (Counter > NoUsers) THEN
48         LEAVE loop3;
49     END IF;
50 END LOOP loop3;
51 If (Counter <= 25) THEN SELECT * FROM User; END IF;
```

Stored Procedure
CreateUsers3

Randomly Fill MI

Desired Output From Loop3 → After You Add Code

ID	First	MI	Last	FullName	Email	Zipcode	DateDeleted	Deleted	TempID
9	F000009	E	L000009	NULL	NULL	NULL	NULL	NULL	1
3	F000003	Z	L000003	NULL	NULL	NULL	NULL	NULL	2
4	F000004	J	L000004	NULL	NULL	NULL	NULL	NULL	3
5	F000005	Y	L000005	NULL	NULL	NULL	NULL	NULL	4
7	F000007	O	L000007	NULL	NULL	NULL	NULL	NULL	5
2	F000002	X	L000002	NULL	NULL	NULL	NULL	NULL	6
6	F000006	X	L000006	NULL	NULL	NULL	NULL	NULL	7
10	F000010	S	L000010	NULL	NULL	NULL	NULL	NULL	8
8	F000008	Y	L000008	NULL	NULL	NULL	NULL	NULL	9
1	F000001	M	L000001	NULL	NULL	NULL	NULL	NULL	10

1] Fill MI With Random Values A - Z

Your Values Will Generally Not Match Mine

Solution → Fill The MI Field

```
42 # Set all of the First to F + 6 digit ID --> ID = 17; First = F000017
43   SET Counter = 1;
44   loop3: LOOP
45       Update User SET First = CONCAT("F", right( POWER(10, 6) + Counter, 6)) WHERE ID = Counter;
46       Update User SET MI = CHAR(FLOOR (RAND() * 26 + 65));
47       Update User SET Last = CONCAT("L", right( POWER(10, 6) + Counter, 6)) WHERE ID = Counter;
48       SET Counter = Counter + 1;
49       IF (Counter > NoUsers) THEN
50           LEAVE loop3;
51       END IF;
52   END LOOP loop3;
53   If (Counter <= 25) THEN SELECT * FROM User; END IF;
```

Parting Thoughts

About This Solution

- 1] To Test Specifications/Requirements You Often Need Data
- 2] This Solution I Way Too Slow → I Hope Your Class Has Complained About This
- 3] Better Solution → Place The Random Nos Into A Container/Array → Cycle Through Them & Do One INSERT INTO per Record → No UPDATES → No SELECTs!

I Was Wanting To Practice Some Queries & Show You Some Of The MYSQL Procedure Syntax → They Have Functions Too!

Add Select NOW(); To Top & Bottom Of Procedure

```
CREATE PROCEDURE `CreateUsers3` (IN NoUsers INT)
BEGIN
DECLARE Counter INT Default 1 ;
DECLARE Pos1, Pos2, Temp1, Temp2 INT;
SELECT NOW();
#
# CODE
#
# Delete All Records From File
ALTER TABLE User DROP TempID;
SELECT NOW();
END
```

```
mysql> call createusers3(1000);
+-----+
| NOW() |
+-----+
| 2020-01-01 18:43:10 |
+-----+
1 row in set (0.00 sec)

+-----+
| NOW() |
+-----+
| 2020-01-01 18:45:08 |
+-----+
1 row in set (1 min 58.18 sec)
```


Backup Your Database

ESL5TH → ESL7TH.sql

Workbench → Server → Data Export

Query 1 Administration - Data Export x

Localhost
Data Export Advanced Options...

Object Selection Export Progress

Tables to Export

Exp...	Schema
<input checked="" type="checkbox"/>	esl5th
<input type="checkbox"/>	esl_student
<input type="checkbox"/>	libraryth
<input type="checkbox"/>	sys
<input type="checkbox"/>	trinitylibrary

Exp...	Schema Objects
--------	----------------

Refresh Dump Structure and Dat Select Views Select Tables Unselect All

Objects to Export

Dump Stored Procedures and Functions Dump Events Dump Triggers

Export Options

Export to Dump Project Folder ...

Each table will be exported into a separate file. This allows a selective restore, but may be slower.

Export to Self-Contained File ...

All selected database objects will be exported into a single, self-contained file.

Create Dump in a Single Transaction (self-contained file only) Include Create Schema

Press [Start Export] to start... Start Export

**TO BE
CONTINUED...** →