IS664 Database Programming
Fall 2022

HW 2

Homework 2

HW2: STORED PROCEDURE PROGRAMMING

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General

- This is your Homework 2 Assignment.
- This assignment utilizes the imperial_defense database.
- This assignment is designed to develop your ability to create Stored Procedures.
- Submit this assignment as a single .sql script.
- You may utilize any native MySQL functions in your Stored Procedure, and you may also create any additional helper functions to use in your Stored Procedures.

Requirement

- The widget table shown below must be refactored into a new table R_Widget through a series of data conversions.

MySQL 8.0 Command Line Client

```
mysql> describe widget;
+------------+---------------------------------+------+-----+---------+-------+
| Field      | Type                            | Null | Key | Default | Extra |
+------------+---------------------------------+------+-----+---------+-------+
| WID        | varchar(25)                     | NO   | PRI | NULL    |       |
| WType      | enum('Terminal','Pad','Device') | NO   |     | NULL    |       |
| AssignedTo | varchar(25)                     | YES  |     | NULL    |       |
| Location   | varchar(25)                     | NO   |     | Unknown |       |
| AccessCode | varchar(25)                     | NO   |     | Pace    |       |
| Secure     | tinyint(1)                      | NO   |     | 0       |       |
| User       | json                            | YES  |     | NULL    |       |
+------------+---------------------------------+------+-----+---------+-------+
7 rows in set (0.00 sec)

mysql>
```

MySQL 8.0 Command Line Client

```
mysql> describe r_widget;
+-------------+-----------------------------------------+------+-----+---------+----------------+
| Field       | Type                                    | Null | Key | Default | Extra          |
+-------------+-----------------------------------------+------+-----+---------+----------------+
| RWID        | int                                     | NO   | PRI | NULL    | auto_increment |
| WidgetID    | varchar(20)                             | YES  | UNI | NULL    |                |
| RTYPE       | enum('IDEV','IPAD','ITERM')             | YES  |     | NULL    |                |
| NetAssigned | varchar(40)                             | YES  |     | NULL    |                |
| RNetType    | enum('SAT','TRACK','SURV','DEF','CIV')  | YES  |     | NULL    |                |
| RLocation   | varchar(100)                            | YES  |     | NULL    |                |
| RAccess     | enum('A1','B2','C3','D4')               | YES  |     | NULL    |                |
| RSecure     | enum('Encrypted','Plain Text')          | YES  |     | NULL    |                |
| RUser       | json                                    | YES  |     | NULL    |                |
+-------------+-----------------------------------------+------+-----+---------+----------------+
9 rows in set (0.00 sec)

mysql>
```

Conversion Rules

- The conversion of WID to WidgetID
  - Same value (No conversion)
- The conversion of WType to RType:
  - Device = IDEV , Pad = IPAD , Terminal = ITERM
- The conversion of AssignedTo to RNetType:
  - Suffix of each Network corresponds to RNetType
- The conversion of Location to RLocation:
  - Concatenation of Location and the XCoord and YCoord of the Location in the format shown.
- The conversion of AccessCode to RAccess:
  - If AccessCode
    - contains '**A**' convert to '**A1**', contains '**B**' convert to '**B2**',
    - contains '**C**' convert to '**C3**' contains '**D**' convert '**D4**'
- The conversion of Secure to RSecure:
  - True becomes 'Encrypted' and False becomes 'Plain Text'

Creation of RUser

- This RUser attribute value for each RWidget is a JSON object composed as shown below

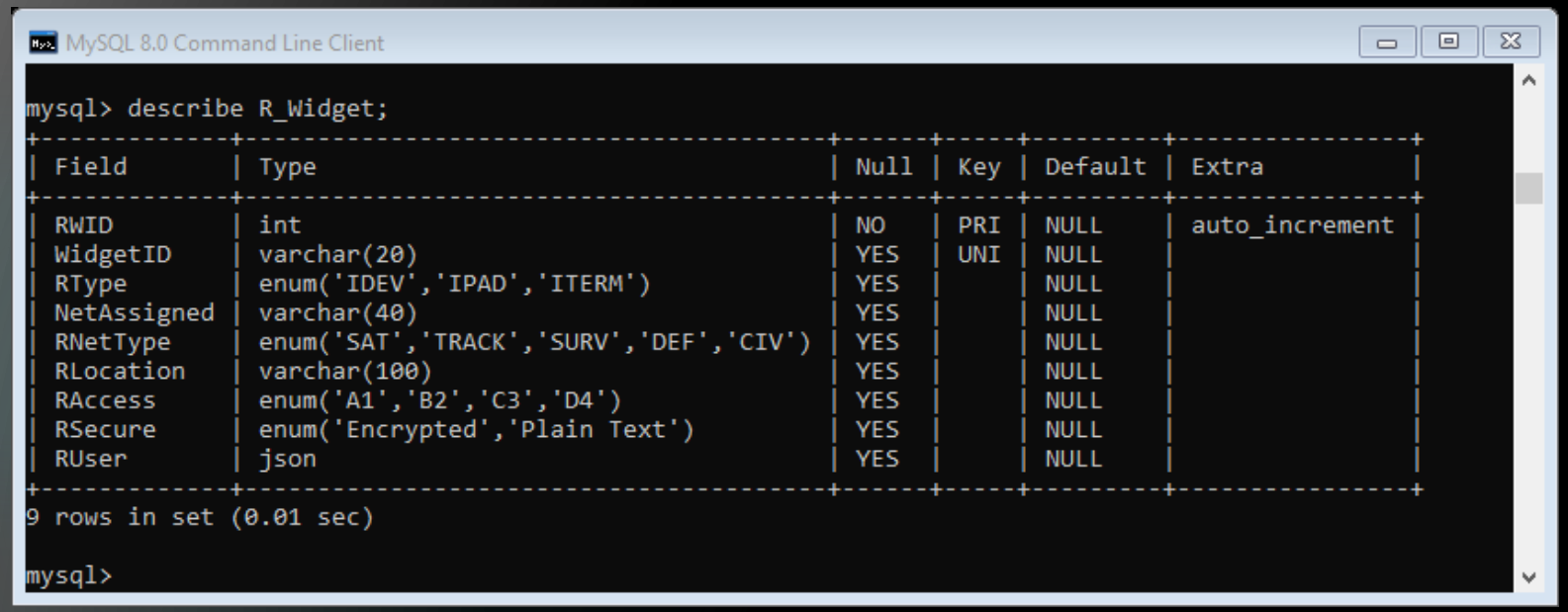
RUser Construction			
ID	DEVICE	ACCESS CODE	Encrypted_YN
Widget.WID	**Widget.WType**	**Widget.AccessCode**	**RUser.RSecure ‘Encrypted’ = ‘User Encrypted’ ‘Plain Text’ = ‘User Not Encrypted’**

```
+----------------------------------------------------------------------------------------------
| RUser
+----------------------------------------------------------------------------------------------
| {"ID": "WDG#1", "DEVICE": "Device", "ACCESS CODE": "AX-206", "Encypted_YN": "User Not Encrypted"}
```

Task

- Create the Stored Procedure widget_Refactor that accepts no parameters and creates, populates, and displays the first 10 rows of table R_Widget

The R_Widget table (structure shown below).



Maintains referential integrity with widget

Task: EXPECTED OUTPUT

- Execution of the widgetRefactor procedure should produce the following output.

MySQL 8.0 Command Line Client

RWID	WidgetID	RType	NetAssigned	RNetType	RLocation	RAccess	RSecure	RUser
1	WDG#1	IDEV	Brore03yNET_SAT	SAT	Aah987w7-- X:56 Y:55	A1	Plain Text	{"ID": "WDG#1", "DEVICE": "Device", "ACCESS CODE": "AX-206", "Encypted_YN": "User Not Encrypted"}
2	WDG#10	IPAD	Brore01wNET_TRACK	TRACK	Cah99q3-- X:27 Y:2	D4	Encrypted	{"ID": "WDG#10", "DEVICE": "Pad", "ACCESS CODE": "DV-402", "Encypted_YN": "User Encrypted"}
3	WDG#100	IPAD	Brore06vNET_SURV	SURV	Bar246e18-- X:15 Y:226	D4	Encrypted	{"ID": "WDG#100", "DEVICE": "Pad", "ACCESS CODE": "DV-423", "Encypted_YN": "User Encrypted"}
4	WDG#101	IDEV	Brore06vNET_SURV	SURV	Cay987w16-- X:98 Y:115	B2	Encrypted	{"ID": "WDG#101", "DEVICE": "Device", "ACCESS CODE": "BY-114", "Encypted_YN": "User Encrypted"}
5	WDG#102	IDEV	Zebetis02xNET_SAT	SAT	Eap0012-- X:80 Y:168	B2	Plain Text	{"ID": "WDG#102", "DEVICE": "Device", "ACCESS CODE": "BY-1021", "Encypted_YN": "User Not Encrypted"}
6	WDG#103	ITERM	Ginda02xNET_SAT	SAT	Cax987w14-- X:45 Y:95	C3	Plain Text	{"ID": "WDG#103", "DEVICE": "Terminal", "ACCESS CODE": "CW-622", "Encypted_YN": "User Not Encrypted"}
7	WDG#104	ITERM	Trerth01wNET_CIV	CIV	Eap99q15-- X:62 Y:249	A1	Encrypted	{"ID": "WDG#104", "DEVICE": "Terminal", "ACCESS CODE": "AX-993", "Encypted_YN": "User Encrypted"}
8	WDG#105	IDEV	Zebetis04zNET_CIV	CIV	Aah987w7-- X:56 Y:55	B2	Plain Text	{"ID": "WDG#105", "DEVICE": "Device", "ACCESS CODE": "BY-1263", "Encypted_YN": "User Not Encrypted"}
9	WDG#106	ITERM	Zebetis04zNET_CIV	CIV	Fay246e20-- X:50 Y:297	A1	Encrypted	{"ID": "WDG#106", "DEVICE": "Terminal", "ACCESS CODE": "AX-467", "Encypted_YN": "User Encrypted"}
10	WDG#107	IDEV	Trerth05uNET_DEF	DEF	Aah987w7-- X:56 Y:55	D4	Encrypted	{"ID": "WDG#107", "DEVICE": "Device", "ACCESS CODE": "DV-1290", "Encypted_YN": "User Encrypted"}