IST769 Homework Submission

Name: **Sathish Kumar Rajendiran**
SUID: **666555028**
Email: **srajendi@syr.edu**
Date Due: **07/20/2021**
Homework #:**2**

Exercise(s):

1. **Use built in SQL functions to write an SQL Select statement on fudgemart_products which derives a product_category column by extracting the last word in the product name. For example**
   a. **for a product named 'Leather Jacket' the product category would be 'Jacket'**
   b. **for a product named 'Straight Claw Hammer' the category would be 'Hammer'**

   Your select statement should include product id, product name, product category and product department

   Solution:

```
--built-in functions used
--CHARINDEX
--REVERSE
   select
        product_id
      , product_department
      , product_name
      , case
           when CHARINDEX(' ', product_name) = 0 then product_name
           else RIGHT(product_name, CHARINDEX(' ', REVERSE(product_name))-1)
        end as product_category
   from dbo.fudgemart_products
```

Evidence:

```
select  product_id
      , product_department
      , product_name
      , case
            when CHARINDEX(' ', product_name) = 0 then product_name
            else RIGHT(product_name, CHARINDEX(' ', REVERSE(product_name))-1)
        end as product_category
from dbo.fudgemart_products
```

194 %

Results | Messages

	product_id	product_department	product_name	product_category
1	1	Hardware	Straight Claw Hammer	Hammer
2	2	Hardware	Sledge Hammer	Hammer
3	3	Hardware	Rip Claw Hammer	Hammer
4	4	Clothing	Dri-Fit Tee	Tee
5	5	Clothing	Running Pants	Pants
6	6	Clothing	Wool Socks	Socks
7	7	Clothing	Squeaky Sneaks	Sneaks
8	8	Clothing	Cool Jeans	Jeans
9	9	Clothing	Denim Jacket	Jacket
10	10	Clothing	Leather Jacket	Jacket
11	11	Clothing	Courdory Pants	Pants
12	12	Clothing	Work Pants	Pants
13	13	Clothing	Work Gloves	Gloves
14	14	Clothing	Comfor-fit Tee	Tee

Query executed successfully.

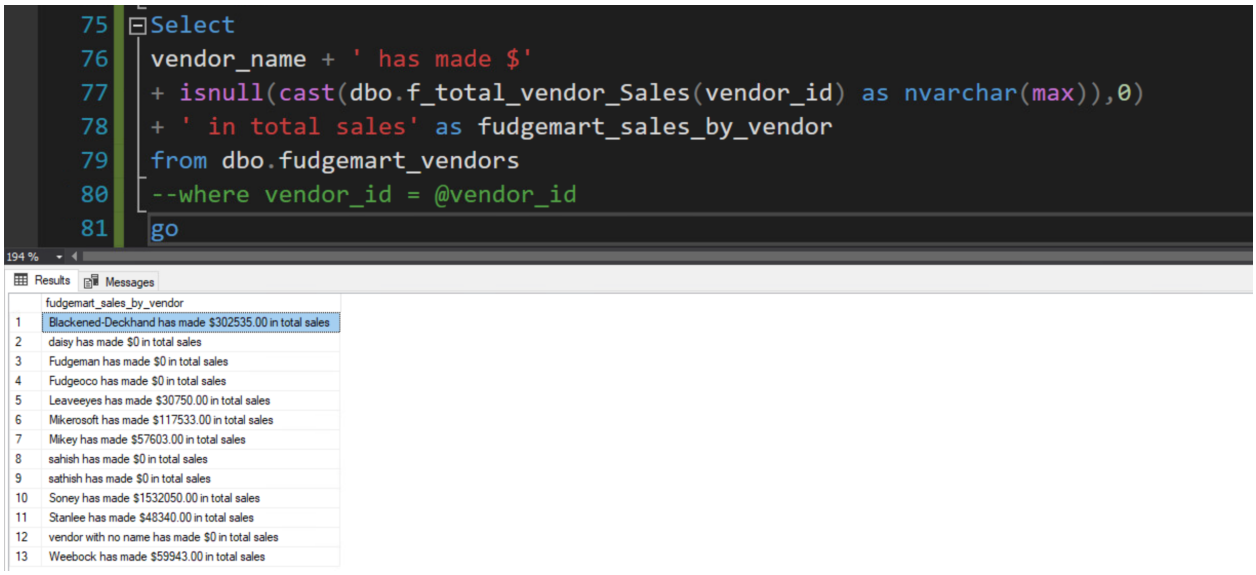
2. **Write a user defined function called f_total_vendor_sales which calculates the sum of the wholesale price * quantity of all products sold for that vendor. There should be one number associated with each vendor id, which is the input into the function. Demonstrate the function works by executing an SQL select statement over all vendors calling the function.**

Solution:

```
IF EXISTS (SELECT * FROM INFORMATION_SCHEMA.ROUTINES WHERE
ROUTINE_NAME='f_total_vendor_Sales')
BEGIN
    DROP FUNCTION f_total_vendor_Sales
END
GO

CREATE FUNCTION
    dbo.f_total_vendor_Sales(@vendor_id int)
RETURNS money
AS
BEGIN
    DECLARE @returnValue money  -- data type matches RETURN Value
/* Get vendor_id from the function call as parameter that matches the vendor_id
from the products ordered and return the calculated value  to variable
@returnvalue.  */
    SELECT
       @returnValue = sum(isnull(p.product_wholesale_price * o.order_qty,0))
    FROM dbo.fudgemart_vendors as v
    join dbo.fudgemart_products as p ON v.vendor_id = p.product_vendor_id
```

```
    join dbo.fudgemart_order_details as o ON o.product_id = p.product_id
    where v.vendor_id = @vendor_id

    RETURN @returnValue
END
GO

----- Validation:
--declare @vendor_id int
--set @vendor_id = 1
Select
vendor_name + ' has made $'
+ isnull(cast(dbo.f_total_vendor_Sales(vendor_id) as nvarchar(max)),0)
+ ' in total sales' as fudgemart_sales_by_vendor
from dbo.fudgemart_vendors
--where vendor_id = @vendor_id
go
```

Evidence:



```
Select
vendor_name + ' has made $'
+ isnull(cast(dbo.f_total_vendor_Sales(vendor_id) as nvarchar(max)),0)
+ ' in total sales' as fudgemart_sales_by_vendor
from dbo.fudgemart_vendors
--where vendor_id = @vendor_id
go
```

194 %

Results | Messages

	fudgemart_sales_by_vendor
1	Blackened-Deckhand has made $302535.00 in total sales
2	daisy has made $0 in total sales
3	Fudgeman has made $0 in total sales
4	Fudgeoco has made $0 in total sales
5	Leaveeyes has made $30750.00 in total sales
6	Mikerosoft has made $117533.00 in total sales
7	Mikey has made $57603.00 in total sales
8	sahish has made $0 in total sales
9	sathish has made $0 in total sales
10	Soney has made $1532050.00 in total sales
11	Stanlee has made $48340.00 in total sales
12	vendor with no name has made $0 in total sales
13	Weebock has made $59943.00 in total sales

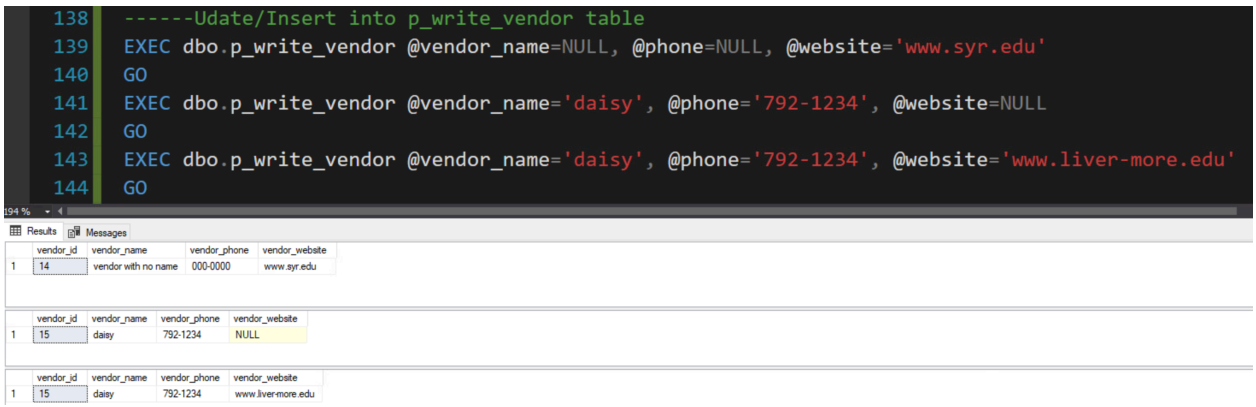
3. **Write a stored procedure called p_write_vendor which when given a required vendor name, phone and optional website, will look up the vendor by name first. If the vendor exists, it will update the phone and website. If the vendor does not exist, it will add the info to the table. Write code to demonstrate the procedure works by executing the procedure twice so that it adds a new vendor and then updates that vendor's information.**

   Solution:

```
IF EXISTS (SELECT * FROM INFORMATION_SCHEMA.ROUTINES WHERE
ROUTINE_NAME='p_write_vendor')
BEGIN
    DROP PROCEDURE p_write_vendor
END
GO

CREATE PROCEDURE
dbo.p_write_vendor(
                  @vendor_name varchar(50),
                  @phone varchar(20),
                  @website varchar(1000))
AS
BEGIN
    declare @vendor_id int
    IF not exists(select * from dbo.fudgemart_vendors where vendor_name =
isnull(@vendor_name,'vendor with no name'))
        BEGIN
            --Now we can add the row using an INSERT Statement
            INSERT INTO dbo.fudgemart_vendors
(vendor_name,vendor_phone,vendor_website)
            VALUES (isnull(@vendor_name,'vendor with no name'), isnull(@phone,'000-
0000'), @website)
            -- pull the vendor id from the newly inserted record
            select @vendor_id = vendor_id from dbo.fudgemart_vendors where
vendor_name = isnull(@vendor_name,'vendor with no name')
        END

    ELSE
        BEGIN
            select @vendor_id = vendor_id from dbo.fudgemart_vendors where
vendor_name = isnull(@vendor_name,'vendor with no name')
            -- now we can update the vendors detail
            UPDATE dbo.fudgemart_vendors
            SET vendor_phone = isnull(@phone,'000-0000'),
                vendor_website = @website
            WHERE vendor_id = @vendor_id
        END
```

```
--Return the affected row
select * from dbo.fudgemart_vendors
where vendor_id= @vendor_id

END
GO

------Udate/Insert into p_write_vendor table
EXEC dbo.p_write_vendor @vendor_name=NULL, @phone=NULL, @website='www.syr.edu'
GO
EXEC dbo.p_write_vendor @vendor_name='daisy', @phone='792-1234', @website=NULL
GO
EXEC dbo.p_write_vendor @vendor_name='daisy', @phone='792-1234',
@website='www.liver-more.edu'
GO
```

Evidence:



4. **Create a view based on the logic you completed in question 1 or 2. Your SQL script should be programmed so that the entire script works every time, dropping the view if it exists, and then re-creating it.**

Solution:

```
IF EXISTS (SELECT * FROM INFORMATION_SCHEMA.VIEWS WHERE
TABLE_NAME='vw_product_details')
    BEGIN
        DROP VIEW vw_product_details
    END
    GO

CREATE VIEW dbo.vw_product_details
```

```
AS
    select
          product_id
        , product_department
        , product_name
        , case
          when CHARINDEX(' ', product_name) = 0 then product_name
          else RIGHT(product_name, CHARINDEX(' ', REVERSE(product_name))-1)
          end as product_category
    from dbo.fudgemart_products
GO

----Retrive values from the vw_product_details View
SELECT  * FROM vw_product_details
GO

----- vw_vendor_sales - Creation
----- This view returns total sales by vendors. Refer #2 from excercise above */

IF EXISTS (SELECT * FROM INFORMATION_SCHEMA.VIEWS WHERE
TABLE_NAME='vw_vendor_sales')
    BEGIN
        DROP VIEW vw_vendor_sales
    END
    GO

CREATE VIEW dbo.vw_vendor_sales
AS
    Select
    vendor_name + ' has made $'
    + isnull(cast(dbo.f_total_vendor_Sales(vendor_id) as nvarchar(max)),0)
    + ' in total sales' as fudgemart_sales_by_vendor
    from dbo.fudgemart_vendors
GO
----Retrive values from the vw_vendor_sales View
SELECT  *  FROM vw_vendor_sales
GO
```

Evidence:

```
176  SELECT  * FROM vw_product_details
177  GO
178
179  ----- vw_vendor_sales - Creation
```

194 %

Results | Messages

	product_id	product_department	product_name	product_category
1	1	Hardware	Straight Claw Hammer	Hammer
2	2	Hardware	Sledge Hammer	Hammer
3	3	Hardware	Rip Claw Hammer	Hammer
4	4	Clothing	Dri-Fit Tee	Tee
5	5	Clothing	Running Pants	Pants
6	6	Clothing	Wool Socks	Socks
7	7	Clothing	Squeaky Sneaks	Sneaks
8	8	Clothing	Cool Jeans	Jeans
9	9	Clothing	Denim Jacket	Jacket
10	10	Clothing	Leather Jacket	Jacket
11	11	Clothing	Courdory Pants	Pants
12	12	Clothing	Work Pants	Pants
13	13	Clothing	Work Gloves	Gloves
14	14	Clothing	Comfor-fit Tee	Tee
15	15	Clothing	Running Shorts	Shorts
16	16	Clothing	X-Train Shoes	Shoes
17	17	Clothing	Baseball Cap	Cap
18	18	Electronics	DVD Player	Player

Query executed successfully.

```
196  ----Retrive values from the vw_vendor_sales View
197  SELECT  *  FROM vw_vendor_sales
198  GO
199
200  /*****************************  SQL Views Creation - Ends ***************************
```

194 %

Results | Messages

	fudgemart_sales_by_vendor
1	Blackened-Deckhand has made $302535.00 in total sales
2	daisy has made $0 in total sales
3	Fudgeman has made $0 in total sales
4	Fudgeoco has made $0 in total sales
5	Leaveeyes has made $30750.00 in total sales
6	Mikerosoft has made $117533.00 in total sales
7	Mikey has made $57603.00 in total sales
8	sahish has made $0 in total sales
9	sathish has made $0 in total sales
10	Soney has made $1532050.00 in total sales
11	Stanlee has made $48340.00 in total sales
12	vendor with no name has made $0 in total sales
13	Weebock has made $59943.00 in total sales

5. Write a table valued function f_employee_timesheets which when provided an employee_id will output the employee id, name, department, payroll date, hourly rate on the timesheet, hours worked, and gross pay (hourly rate times hours worked).

Solution:

```
IF EXISTS (SELECT * FROM INFORMATION_SCHEMA.ROUTINES WHERE
ROUTINE_NAME='f_employee_timesheets')
BEGIN
    DROP FUNCTION f_employee_timesheets
END
GO

CREATE FUNCTION dbo.f_employee_timesheets(
    @employee_id INT
)
RETURNS TABLE
AS
    RETURN (
            SELECT
              e.employee_id
            , e.employee_lastname +', ' +e.employee_firstname as name
            , e.employee_department as department
            , cast(t.timesheet_payrolldate as date) as payrolldate
            , round(isnull(t.timesheet_hourlyrate,0),2) as timesheet_hourly_rate
            , isnull(t.timesheet_hours,0) as hours_worked
            , cast(isnull(t.timesheet_hours * t.timesheet_hourlyrate,0) as
decimal(9,2)) as grosspay
            FROM dbo.fudgemart_employee_timesheets as t
            Join dbo.fudgemart_employees as e ON e.employee_id =
t.timesheet_employee_id
            WHERE e.employee_id = @employee_id
    );
 GO

----- Validation:
Select top 5 * from dbo.f_employee_timesheets(10)
GO
```

Evidence:

```
238  ----- Validation:
239  Select top 5 * from dbo.f_employee_timesheets(10)
240  GO
241
242  /*************************    Table value function Creation - Ends  *****
243
```

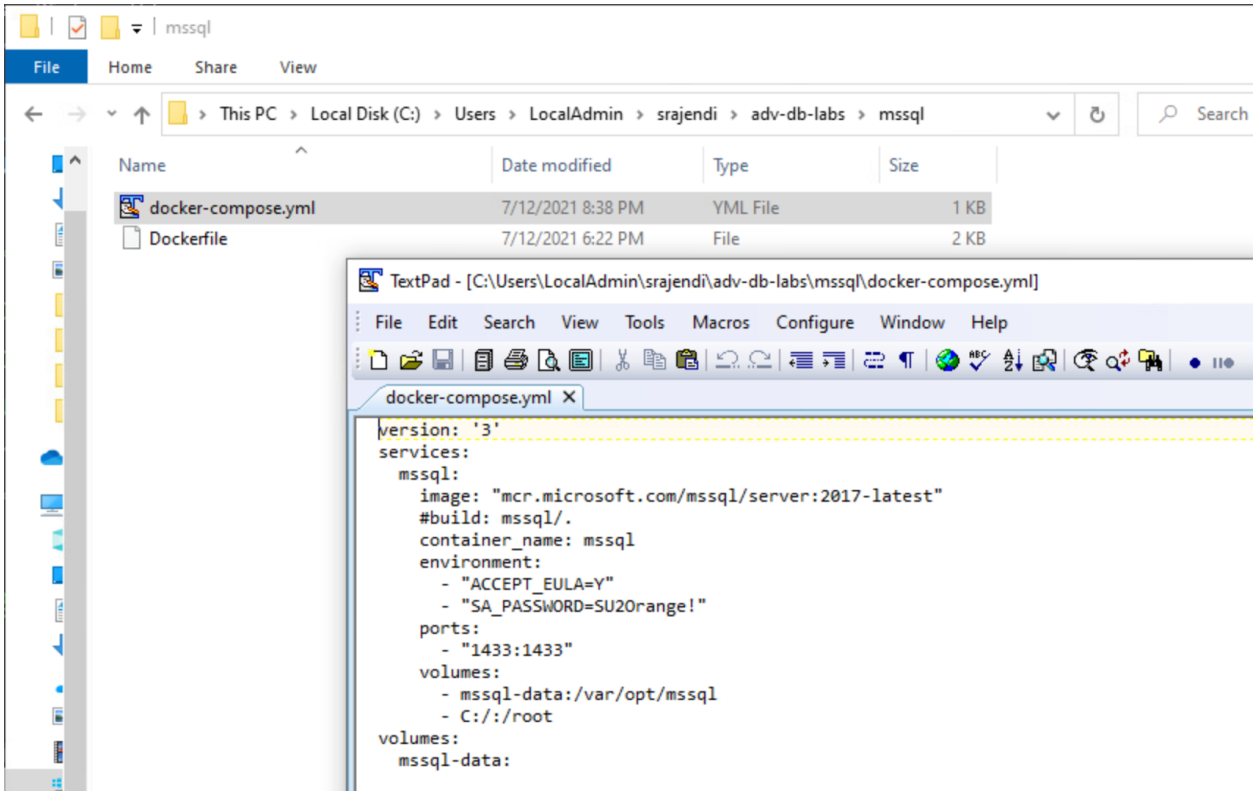
194 %

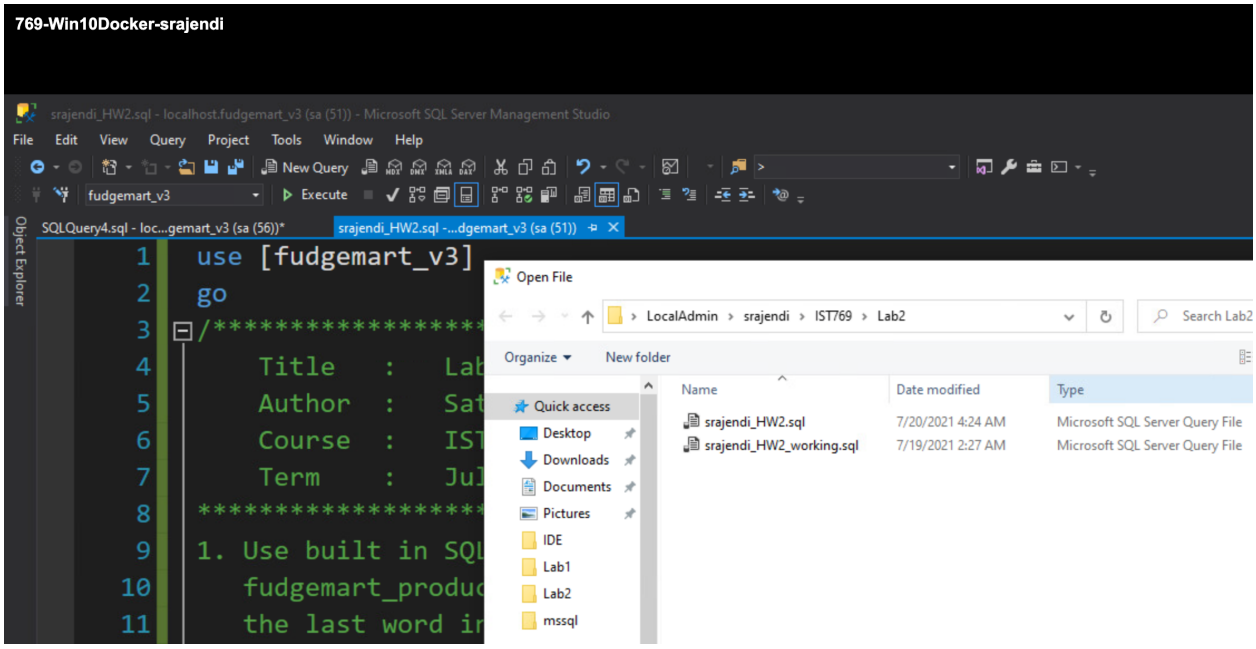
Results | Messages

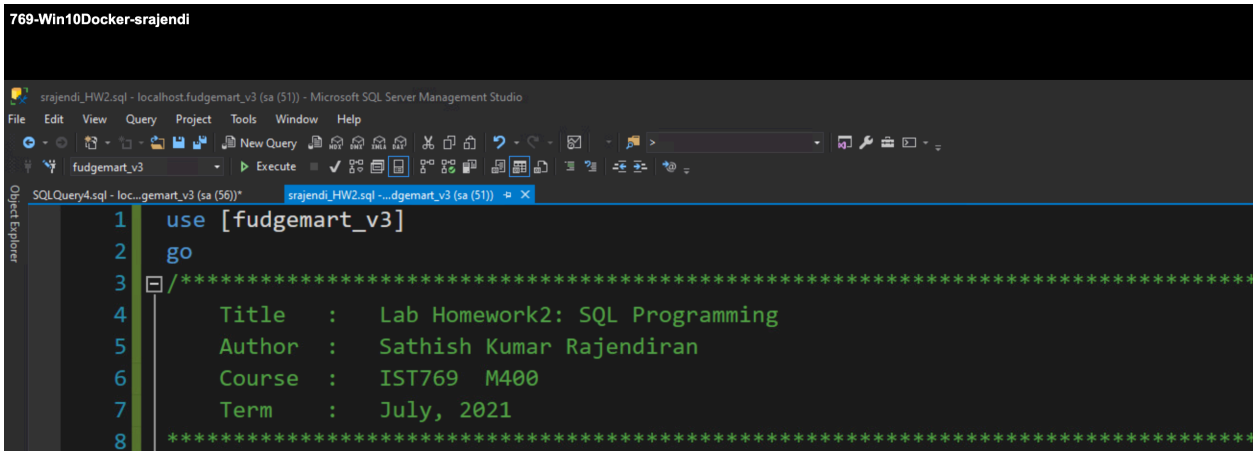
	employee_id	name	department	payrolldate	timesheet_hourly_rate	hours_worked	grosspay
1	10	Choke, Artie	Hardware	2010-01-04	11.95	40.0	478.00
2	10	Choke, Artie	Hardware	2010-01-11	11.95	40.0	478.00
3	10	Choke, Artie	Hardware	2010-01-18	11.95	40.0	478.00
4	10	Choke, Artie	Hardware	2010-01-25	11.95	40.0	478.00
5	10	Choke, Artie	Hardware	2010-02-01	11.95	40.0	478.00

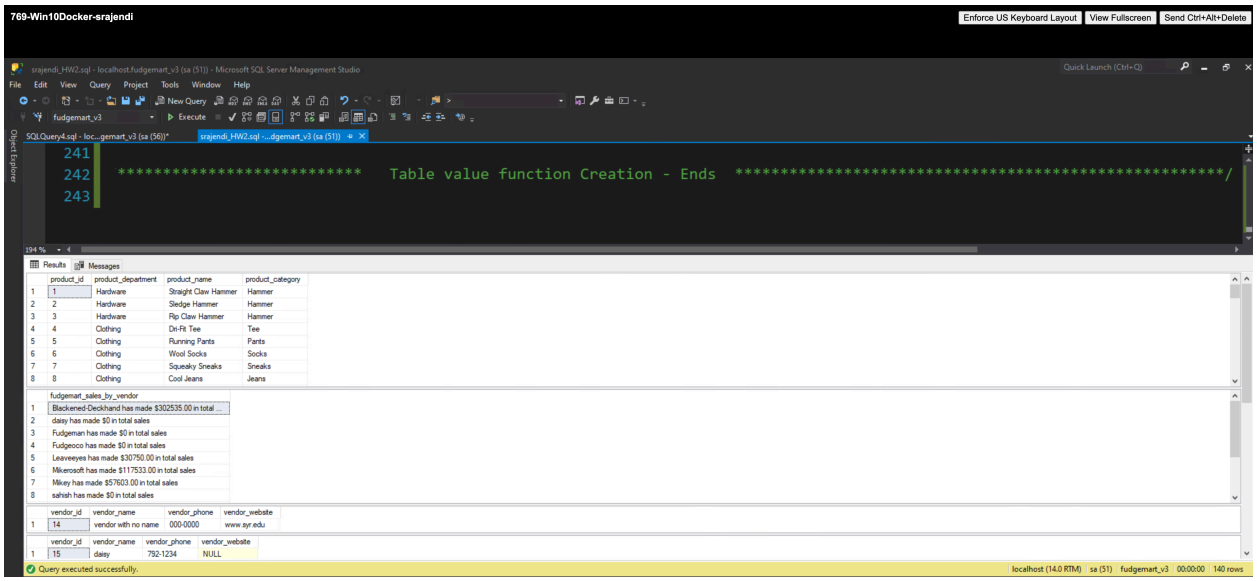
Appendix

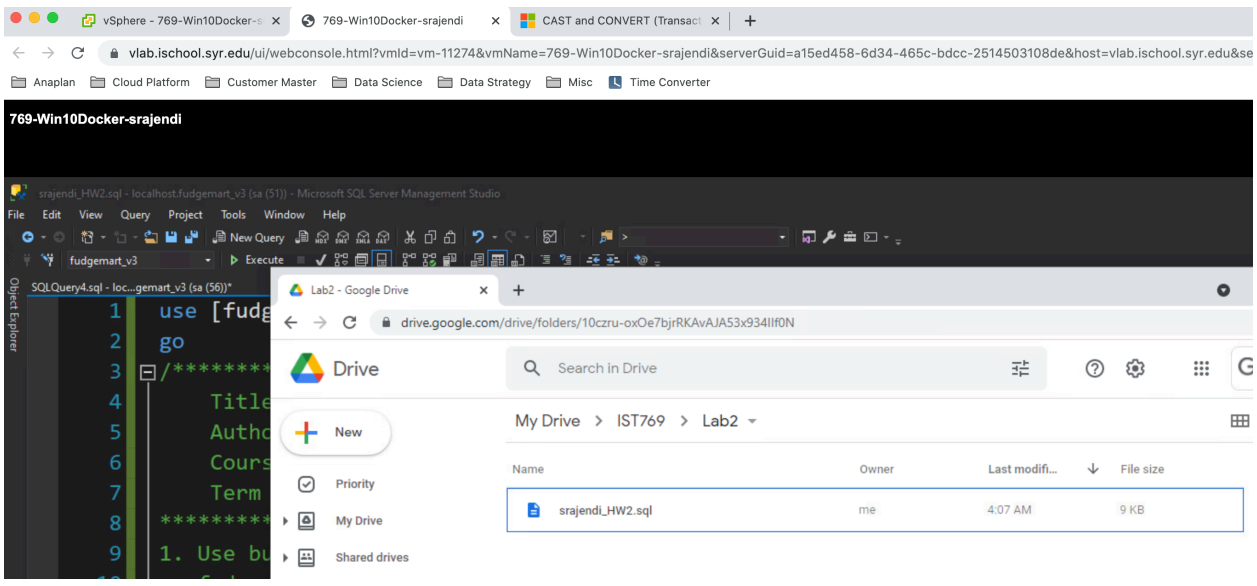
```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.19041.1110]
(c) Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>cd C:\Users\LocalAdmin\srajendi\adv-db-labs\mssql

C:\Users\LocalAdmin\srajendi\adv-db-labs\mssql>docker-compose ps
Name   Command   State   Ports
------------------------------

C:\Users\LocalAdmin\srajendi\adv-db-labs\mssql>docker-compose up -d
Creating network "mssql_default" with the default driver
Creating mssql ... done

C:\Users\LocalAdmin\srajendi\adv-db-labs\mssql>docker-compose ps
Name              Command              State                  Ports
-------------------------------------------------------------------------------------
mssql   /opt/mssql/bin/nonroot_msg ...   Up      0.0.0.0:1433->1433/tcp,:::1433->1433/tcp

C:\Users\LocalAdmin\srajendi\adv-db-labs\mssql>
```


mssql
File
Home
Share
View
This PC › Local Disk (C:) › Users › LocalAdmin › srajendi › adv-db-labs › mssql
Search
Name
Date modified
Type
Size
docker-compose.yml
7/12/2021 8:38 PM
YML File
1 KB
Dockerfile
7/12/2021 6:22 PM
File
2 KB
TextPad - [C:\Users\LocalAdmin\srajendi\adv-db-labs\mssql\docker-compose.yml]
File Edit Search View Tools Macros Configure Window Help
docker-compose.yml
version: '3'
services:
mssql:
image: "mcr.microsoft.com/mssql/server:2017-latest"
#build: mssql/.
container_name: mssql
environment:
- "ACCEPT_EULA=Y"
- "SA_PASSWORD=SU2Orange!"
ports:
- "1433:1433"
volumes:
- mssql-data:/var/opt/mssql
- C:/:/root
volumes:
mssql-data:

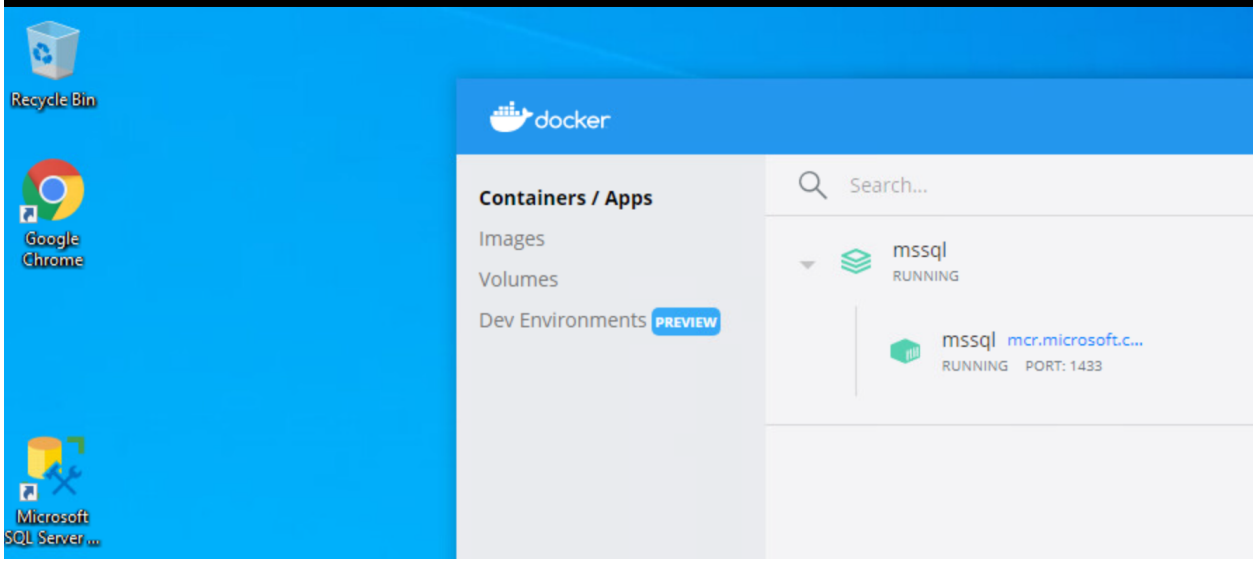

769-Win10Docker-srajendi
srajendi_HW2.sql - localhost.fudgemart_v3 (sa (51)) - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
New Query
fudgemart_v3
Execute
SQLQuery4.sql - loc...gemart_v3 (sa (56))*
srajendi_HW2.sql -...dgemart_v3 (sa (51))
Object Explorer
use [fudgemart_v3]
go
Open File
LocalAdmin › srajendi › IST769 › Lab2
Search Lab2
Organize
New folder
Quick access
Desktop
Downloads
Documents
Pictures
IDE
Lab1
Lab2
mssql
Name
Date modified
Type
srajendi_HW2.sql
7/20/2021 4:24 AM
Microsoft SQL Server Query File
srajendi_HW2_working.sql
7/19/2021 2:27 AM
Microsoft SQL Server Query File


769-Win10Docker-srajendi
srajendi_HW2.sql - localhost.fudgemart_v3 (sa (51)) - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
New Query
fudgemart_v3
Execute
SQLQuery4.sql - loc...gemart_v3 (sa (56))*
srajendi_HW2.sql -...dgemart_v3 (sa (51))
Object Explorer
use [fudgemart_v3]
go
/***
Title : Lab Homework2: SQL Programming
Author : Sathish Kumar Rajendiran
Course : IST769 M400
Term : July, 2021
****


769-Win10Docker-srajendi
Enforce US Keyboard Layout
View Fullscreen
Send Ctrl+Alt+Delete
241
242 ************************** Table value function Creation - Ends **********/
243
Results
Messages
product_id product_department product_name product_category
1 1 Hardware Straight Claw Hammer Hammer
2 2 Hardware Sledge Hammer Hammer
3 3 Hardware Rip Claw Hammer Hammer
4 4 Clothing Dri-Fit Tee Tee
5 5 Clothing Running Pants Pants
6 6 Clothing Wool Socks Socks
7 7 Clothing Squeaky Sneaks Sneaks
8 8 Clothing Cool Jeans Jeans
fudgemart_sales_by_vendor
1 Blackened-Deckhand has made $302535.00 in total ...
2 daisy has made $0 in total sales
3 Fudgeman has made $0 in total sales
4 Fudgeoco has made $0 in total sales
5 Leaveeyes has made $30750.00 in total sales
6 Mikerosoft has made $117533.00 in total sales
7 Mikey has made $57603.00 in total sales
8 sahish has made $0 in total sales
vendor_id vendor_name vendor_phone vendor_website
1 14 vendor with no name 000-0000 www.syr.edu
vendor_id vendor_name vendor_phone vendor_website
1 15 daisy 792-1234 NULL
Query executed successfully.
localhost (14.0 RTM) sa (51) fudgemart_v3 00:00:00 140 rows

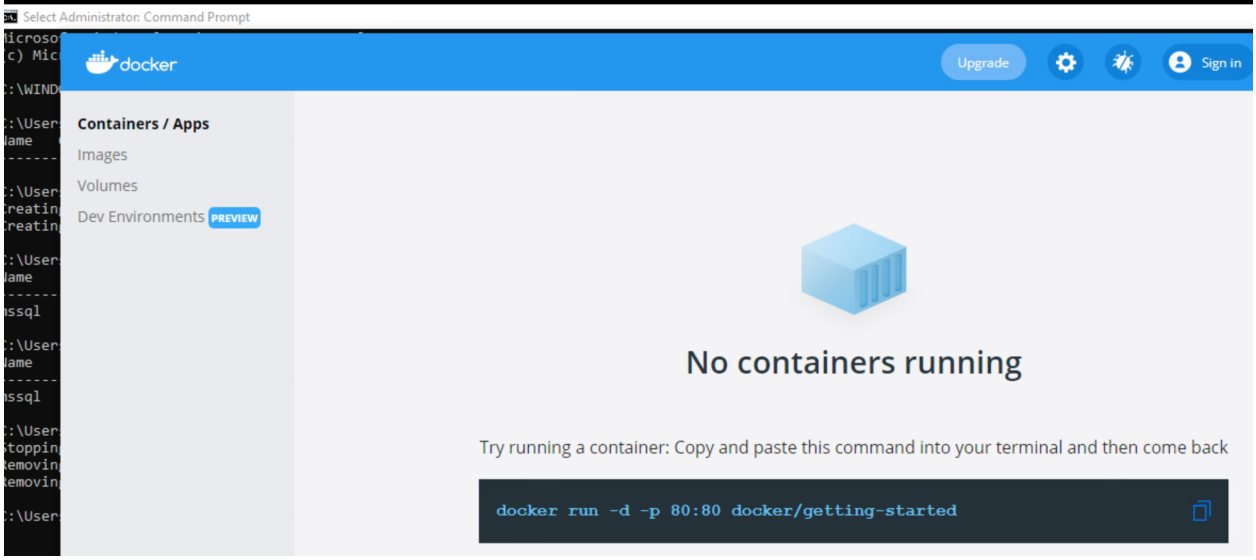

vSphere - 769-Win10Docker-s
769-Win10Docker-srajendi
CAST and CONVERT (Transact
vlab.ischool.syr.edu/ui/webconsole.html?vmId=vm-11274&vmName=769-Win10Docker-srajendi&serverGuid=a15ed458-6d34-465c-bdcc-2514503108de&host=vlab.ischool.syr.edu&se
Anaplan
Cloud Platform
Customer Master
Data Science
Data Strategy
Misc
Time Converter
769-Win10Docker-srajendi
srajendi_HW2.sql - localhost.fudgemart_v3 (sa (51)) - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
New Query
fudgemart_v3
Execute
SQLQuery4.sql - loc...gemart_v3 (sa (56))*
Object Explorer
Lab2 - Google Drive
drive.google.com/drive/folders/10czru-oxOe7bjrRKAvAJA53x934IIf0N
Drive
Search in Drive
New
Priority
My Drive
Shared drives
My Drive > IST769 > Lab2
Name
Owner
Last modifi...
File size
srajendi_HW2.sql
me
4:07 AM
9 KB

769-Win10Docker-srajendi

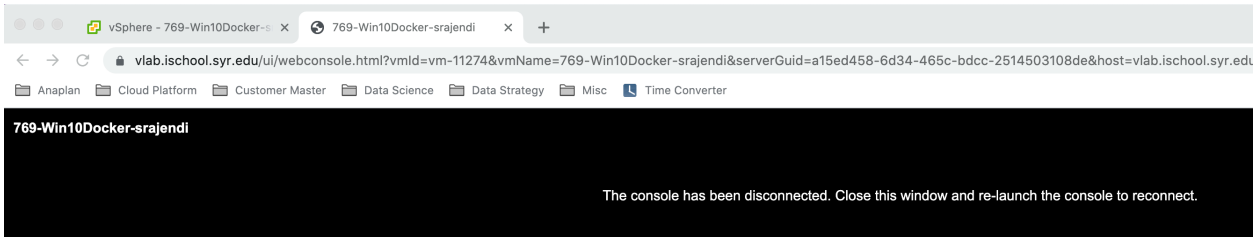


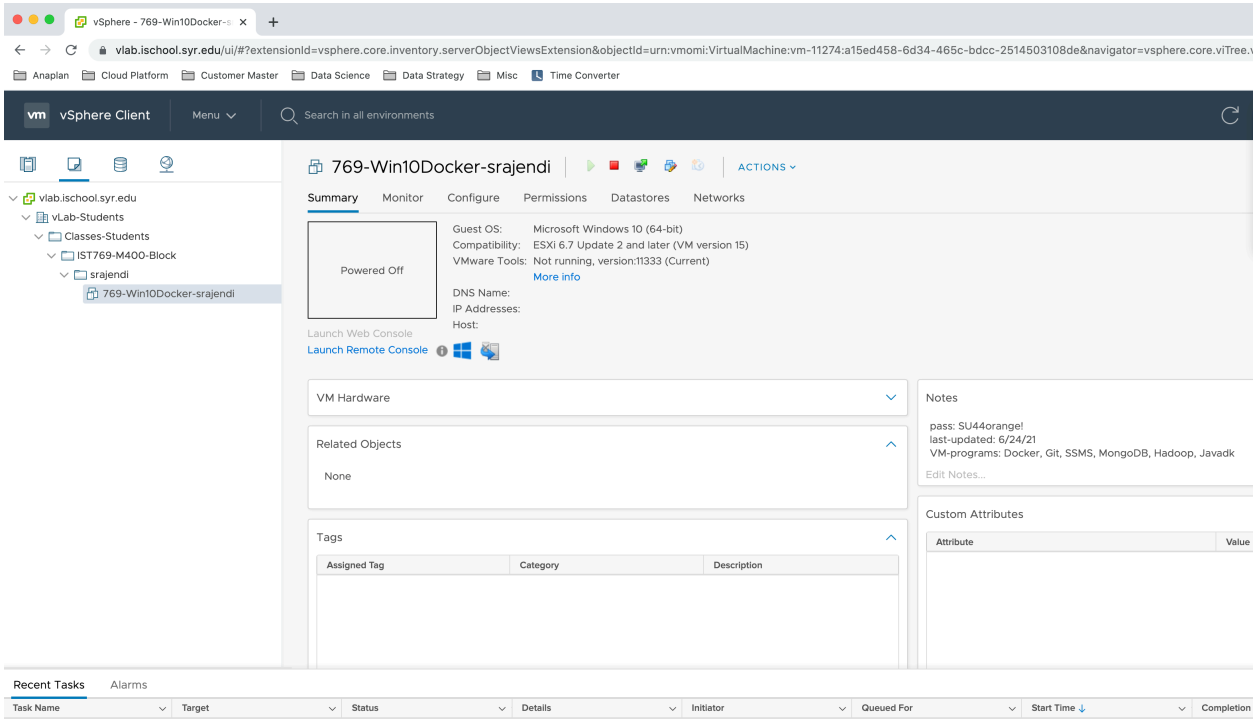

```
C:\Users\LocalAdmin\srajendi\adv-db-labs\mssql>docker-compose ps
Name              Command               State                    Ports
-------------------------------------------------------------------------------------
mssql   /opt/mssql/bin/nonroot_msg ...   Up      0.0.0.0:1433->1433/tcp,:::1433->1433/tcp

C:\Users\LocalAdmin\srajendi\adv-db-labs\mssql>docker-compose down
Stopping mssql ... done
Removing mssql ... done
Removing network mssql_default
```

769-Win10Docker-srajendi




769-Win10Docker-srajendi
Shutting down


vSphere - 769-Win10Docker-s
769-Win10Docker-srajendi
vlab.ischool.syr.edu/ui/webconsole.html?vmId=vm-11274&vmName=769-Win10Docker-srajendi&serverGuid=a15ed458-6d34-465c-bdcc-2514503108de&host=vlab.ischool.syr.edu
Anaplan
Cloud Platform
Customer Master
Data Science
Data Strategy
Misc
Time Converter
769-Win10Docker-srajendi
The console has been disconnected. Close this window and re-launch the console to reconnect.


vSphere - 769-Win10Docker-s
vlab.ischool.syr.edu/ui/#?extensionId=vsphere.core.inventory.serverObjectViewsExtension&objectId=urn:vmomi:VirtualMachine:vm-11274:a15ed458-6d34-465c-bdcc-2514503108de&navigator=vsphere.core.viTree.
Anaplan
Cloud Platform
Customer Master
Data Science
Data Strategy
Misc
Time Converter
vSphere Client
Menu
Search in all environments
vlab.ischool.syr.edu
vLab-Students
Classes-Students
IST769-M400-Block
srajendi
769-Win10Docker-srajendi
769-Win10Docker-srajendi
ACTIONS
Summary
Monitor
Configure
Permissions
Datastores
Networks
Powered Off
Guest OS: Microsoft Windows 10 (64-bit)
Compatibility: ESXi 6.7 Update 2 and later (VM version 15)
VMware Tools: Not running, version:11333 (Current)
More info
DNS Name:
IP Addresses:
Host:
Launch Web Console
Launch Remote Console
VM Hardware
Related Objects
None
Tags
Assigned Tag
Category
Description
Notes
pass: SU44orange!
last-updated: 6/24/21
VM-programs: Docker, Git, SSMS, MongoDB, Hadoop, Javadk
Edit Notes...
Custom Attributes
Attribute
Value
Recent Tasks
Alarms
Task Name
Target
Status
Details
Initiator
Queued For
Start Time
Completion