

Unit 01 Problem Set Submission Form

Overview

Your Name	Bhavya Shah
Your SU Email	bhshah@syr.edu

Instructions

Put your name and SU email at the top. Answer these questions all from the lab. When asked to include screenshots, please follow the screen shot guidelines from the first lab.

Remember as you complete the problem sets it is not only about getting it right / correct. We will discuss the answers in class so it's important to articulate anything you would like to contribute to the discussion in your answer:

- If you feel the question is vague, include any assumptions you've made.
- If you feel the answer requires interpretation or justification provide it.
- If you do not know the answer to the question, articulate what you tried and how you are stuck.

This how you receive credit for answering questions which might not be correct.

Questions

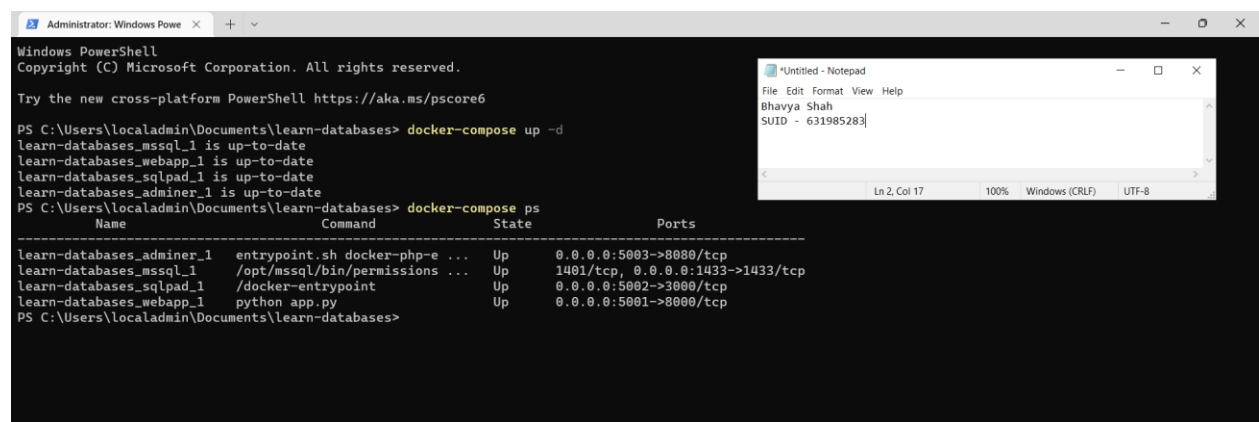
1. Use docker-compose to start the containers. What is the command you typed to do this?

Ans - docker-compose up -d

2. What is the command to show the running docker containers?

Ans - docker-compose ps

3. Provide a screenshot displaying evidence your containers are running (the output of the previous question should suffice).



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

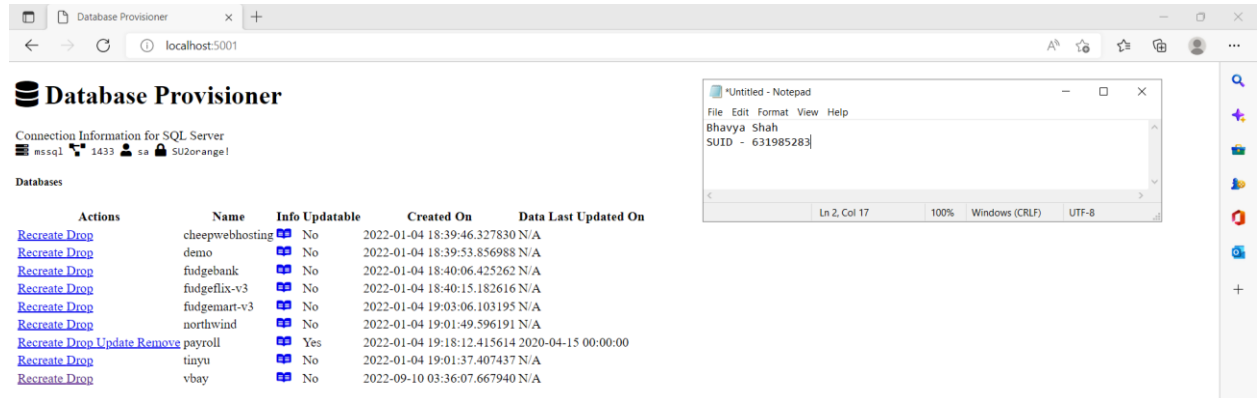
PS C:\Users\localadmin\Documents\learn-databases> docker-compose up -d
learn-databases_mssql_1 is up-to-date
learn-databases_webapp_1 is up-to-date
learn-databases_sqlpad_1 is up-to-date
learn-databases_adminer_1 is up-to-date
PS C:\Users\localadmin\Documents\learn-databases> docker-compose ps

```

Name	Command	State	Ports
learn-databases_adminer_1	entrypoint.sh docker-php-e ...	Up	0.0.0.0:5003->8080/tcp
learn-databases_mssql_1	/opt/mssql/bin/permissions ...	Up	1401/tcp, 0.0.0.0:1433->1433/tcp
learn-databases_sqlpad_1	/docker-entrypoint	Up	0.0.0.0:5002->3000/tcp
learn-databases_webapp_1	python app.py	Up	0.0.0.0:5001->8080/tcp

```
PS C:\Users\localadmin\Documents\learn-databases>
```

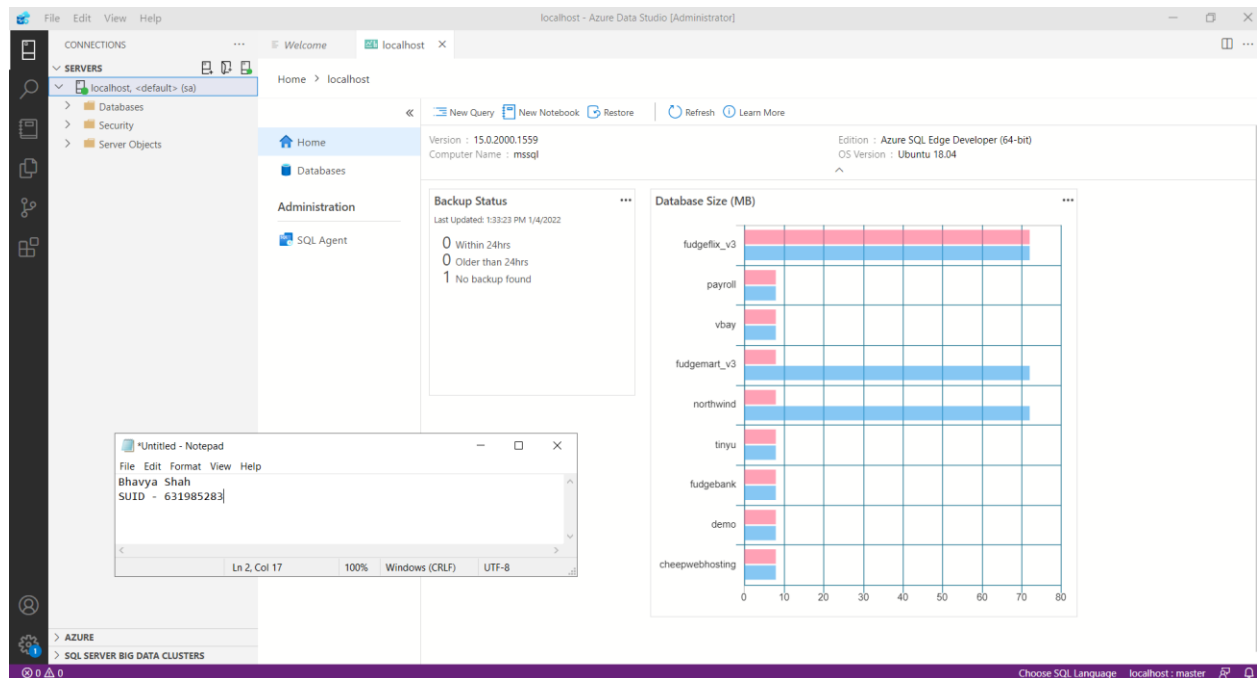
4. Provision all the databases included in the Database provisioner application. Provide a screenshot as evidence they have been provisioned. Note: This might take some time so be patient!



The screenshot shows the Database Provisioner application interface. At the top, it displays the connection information for the SQL Server: mssql, 1433, sa, SU2orange!. Below this, there is a table listing the databases that have been provisioned. The table has columns for Actions, Name, Info Updatable, Created On, and Data Last Updated On. The databases listed are cheepwebhosting, demo, fudgebank, fudgefix-v3, fudgemart-v3, northwind, payroll, tinyu, and vbay. Each database has a 'Recreate Drop' action link. A Notepad window is open in the background, showing the user's name 'Bhavya Shah' and SUID '631985283'.

Actions	Name	Info Updatable	Created On	Data Last Updated On
Recreate Drop	cheepwebhosting	No	2022-01-04 18:39:46.327830 N/A	
Recreate Drop	demo	No	2022-01-04 18:39:53.856988 N/A	
Recreate Drop	fudgebank	No	2022-01-04 18:40:06.425262 N/A	
Recreate Drop	fudgefix-v3	No	2022-01-04 18:40:15.182616 N/A	
Recreate Drop	fudgemart-v3	No	2022-01-04 19:03:06.103195 N/A	
Recreate Drop	northwind	No	2022-01-04 19:01:49.596191 N/A	
Recreate Drop Update Remove	payroll	Yes	2022-01-04 19:18:12.415614 2020-04-15 00:00:00	
Recreate Drop	tinyu	No	2022-01-04 19:01:37.407437 N/A	
Recreate Drop	vbay	No	2022-09-10 03:36:07.667940 N/A	

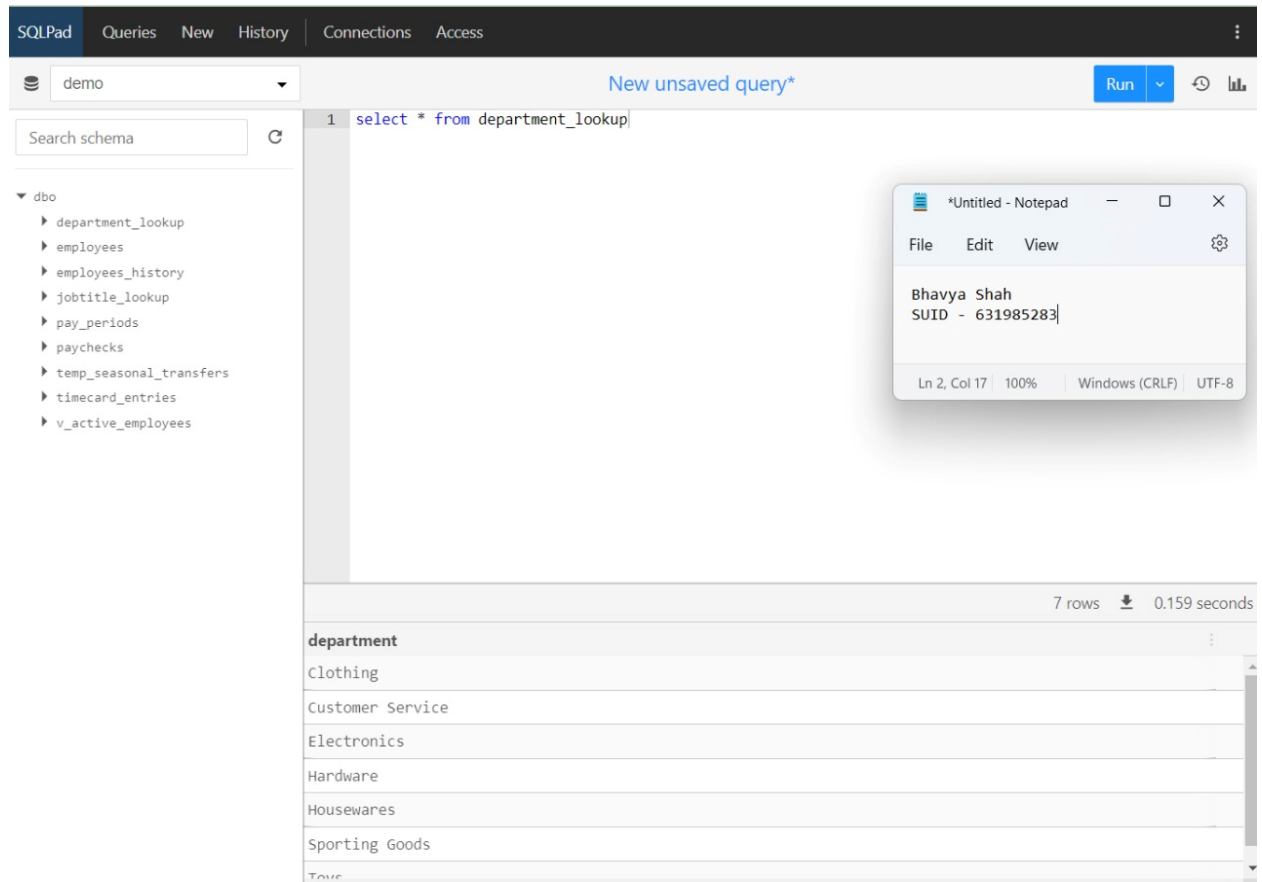
5. Connect to MS SQL Server using azure data studio and provide a screenshot of the databases under the connection. This will provide evidence your connection works and your databases were provisioned.



The screenshot shows the Azure Data Studio interface. The left sidebar displays the 'SERVERS' section with a tree view showing 'localhost <default> (sa)' and its sub-items: 'Databases', 'Security', and 'Server Objects'. The main pane shows the 'Databases' view, which includes a 'Backup Status' section and a 'Database Size (MB)' bar chart. The 'Backup Status' section shows that no backups were found for the databases. The 'Database Size (MB)' bar chart shows the size of each database in MB. The databases listed are fudgefix_v3, payroll, vbay, fudgemart_v3, northwind, tinyu, fudgebank, demo, and cheepwebhosting. The bar chart shows that fudgefix_v3, fudgemart_v3, and northwind are the largest databases, each around 70 MB. The other databases are smaller, around 10 MB or less.

Database	Size (MB)
fudgefix_v3	~70
payroll	~10
vbay	~10
fudgemart_v3	~70
northwind	~70
tinyu	~10
fudgebank	~10
demo	~10
cheepwebhosting	~10

6. Connect to MS SQL server using SQL Pad. Specifically connect to the **payroll** database and then run this query: `select * from department_lookup`
Include a screenshot of the query and output.



7. Connect to MS SQL server using Adminer, again connect to the **payroll** database. Include a screenshot of the structure of the **employees** table.

The screenshot shows the DBeaver interface for a Microsoft SQL Server database. The 'employees' table is selected, and its structure is displayed in a table:

Column	Type	Comment
employee_id	int	
employee_ssn	char(11)	
employee_firstname	varchar(100)	
employee_lastname	varchar(100)	
employee_hire_date	datetime	
employee_termination_date	datetime NULL	
employee_jobtitle	varchar(100)	
employee_department	varchar(100)	
employee_pay_rate	money	
employee_supervisor_employee_id	int NULL	
valid_from	datetime2	
valid_to	datetime2	

Below the table structure, the indexes are listed:

Index Name	Index Type	Index Column
PRIMARY	PRIMARY	employee_id
UNIQUE	UNIQUE	employee_ssn

To the right, a Notepad window displays the following text:

```
Bhavya Shah
SUID - 631985283
```

8. What is the command to shut down the running docker containers?
Ans - docker-compose down
9. Provide a screenshot displaying evidence your containers are no longer running (the output of the previous question should suffice).

The screenshot shows a Windows PowerShell terminal window with the following commands and output:

```
PS C:\Users\localadmin\Documents\learn-databases> docker-compose up -d
learn-databases_mssql_1 is up-to-date
learn-databases_webapp_1 is up-to-date
learn-databases_sqlpad_1 is up-to-date
learn-databases_adminer_1 is up-to-date
PS C:\Users\localadmin\Documents\learn-databases> docker-compose ps
-----
Name                                Command                                State      Ports
-----
learn-databases_adminer_1            entrypoint.sh docker-php-e ...        Up         0.0.0.0:5003->8080/tcp
learn-databases_mssql_1              /opt/mssql/bin/permissions ...        Up         1401/tcp, 0.0.0.0:1433->1433/tcp
learn-databases_sqlpad_1             /docker-entrypoint                Up         0.0.0.0:5002->3000/tcp
learn-databases_webapp_1             python app.py                       Up         0.0.0.0:5001->8000/tcp
PS C:\Users\localadmin\Documents\learn-databases> docker-compose down
Stopping learn-databases_sqlpad_1 ... done
Stopping learn-databases_adminer_1 ... done
Stopping learn-databases_webapp_1 ... done
Removing learn-databases_sqlpad_1 ... done
Removing learn-databases_adminer_1 ... done
Removing learn-databases_webapp_1 ... done
Removing learn-databases_mssql_1 ... done
Removing network learn-databases_learnldb_net
PS C:\Users\localadmin\Documents\learn-databases>
```

To the right, a Notepad window displays the following text:

```
Bhavya Shah
SUID - 631985283
```

Reflection

Use this section to reflect on your learning. To achieve the highest grade on the assignment you must be as descriptive and personal as possible with your reflection.

1. What are the key things you learned through the process of completing this assignment?

Ans - I learned about Microsoft azure studio and database management systems, including how the databases are provisioned. Creating and connecting to database using virtual machines and accessing the data stored in the tables using SQL commands.

2. What were the challenges or roadblocks (if any) you encountered on the way to completing it?

Ans - It took time to get use to the virtual machine, but it was easy.

3. Were you prepared for this assignment? What can you do to be better prepared?

Ans - I could have referred to some online videos or reading material to be better prepared for the assignment.

4. Now that you have completed the assignment rate your comfort level with this week's material. This should be an honest assessment: (choose one)

4 ==> I understand this material and can explain it to others.

3 ==> I understand this material.

2 ==> I somewhat understand the material but sometimes need guidance from others.

1 ==> I understand very little of this material and need extra help.