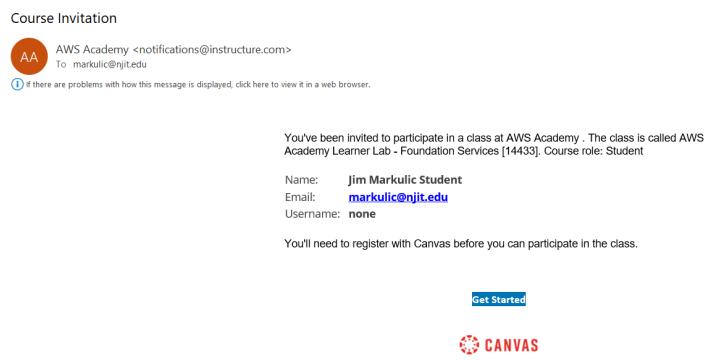


- 1) You will receive an invitation from AWS Academy in the following email



- 2) Follow the link on the email and Canvas will ask you to set up a password on the following screen. Even though this uses your NJIT email, it is a separate Canvas and the password you use for the NJIT Canvas will not work. You need to set a new password if you haven't used AWS Academy before. You also have to check the I Accept boxes and then hit Register

The screenshot shows a "Welcome Aboard!" page for AWS Academy Learner Lab - Foundation Services [14433]. It asks for login information and time zone. Below that are two "I Agree" checkboxes and a "Register" button.

Welcome Aboard!

In order to finish signing you up for the course AWS Academy Learner Lab - Foundation Services [14433], we'll need a little more information.

Login:

Password:

Time Zone:

Yes, I'd like Canvas to provide my contact information to [Amazon Web Services](#)(AWS) so AWS can share the latest news about AWS services and related offerings with me by email, post or telephone.

You may unsubscribe from receiving AWS news and offers from at any time by following the instructions in the communications received. AWS handles your information as described in the [AWS Privacy Notice](#). Providing Canvas with your information may involve transferring it to another country. For questions about how Canvas will handle your information, please contact Canvas directly or refer to its privacy policy.

I agree to the Canvas [Instructure Acceptable Use Policy](#) and to the [AWS Learner Terms and Conditions](#). The information you provide will be handled by AWS as described in the [AWS Privacy Notice](#).

[Back](#) [Register](#)

- 3) Follow the link to course [Allv1EN-LTI13-67709](#) (you may be brought there automatically)
- 4) The first time you access the lab, you will need to click the "I Agree" button for the Terms and Conditions

Contact Information

If you have any questions about these Terms or the Services, please contact Vocareum at info@vocareum.com

[I Agree](#)

- 5) The following screen will appear (it may differ slightly from the picture below). Click the Student Access Button



Featured Content

- 6) The following screen will appear, and you need to select Modules

A screenshot of the AWS Academy Learner Lab page for course ALLv1-47523. The left sidebar shows navigation links like Home, Account, Dashboard, Courses, Calendar, Inbox, History, and Help. The main content area displays the course title "AWS Academy Learner Lab [47523]" and a descriptive text about the learner lab environment. It includes three buttons: "View Course Stream", "View Course Calendar", and "View Course Notifications". On the right, sections for "To Do" (Nothing for now), "Recent Feedback" (Nothing for now), and a "Course Welcome and Overview" section with links to "Pre-Course Survey" and "AWS Academy Learner Lab Student Guide".

- 7) After you select modules, the following screen will appear. You are welcome to review all the materials, but to create your AWS account you need to select Launch AWS Academy Learner Lab

A screenshot of the AWS Academy Modules page for course ALLv1-47523. The left sidebar shows navigation links. The main content area lists course modules: "Course Welcome and Overview" (with "Pre-Course Survey" and "AWS Academy Learner Lab Student Guide"), "AWS Academy Learner Lab" (with "Launch AWS Academy Learner Lab"), and "AWS Academy Learner Lab Compliance and Security" (with "Learn how to effectively use the Academy Learner Lab"). A "Complete All Items" button is located at the bottom of the "AWS Academy Learner Lab" section.

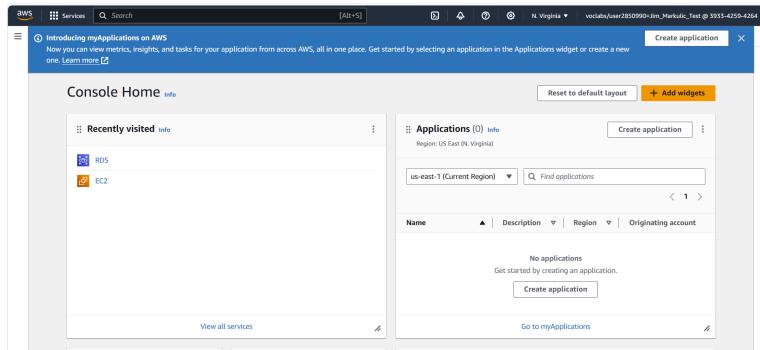
- 8) You will be brought to the AWS Sandbox labs and the following screen will appear. Click the Start Lab button. It will take a few minutes to start the lab.

A screenshot of the AWS Learner Lab interface for the "Foundational Services" module. The left sidebar shows navigation links. The main content area has a red circle highlighting the "Start Lab" button in the top right corner of the toolbar. The toolbar also includes "End Lab", "AWS Details", "Readme", and "Reset" buttons. The central panel displays the "Learner Lab - Foundational Level" environment overview and navigation.

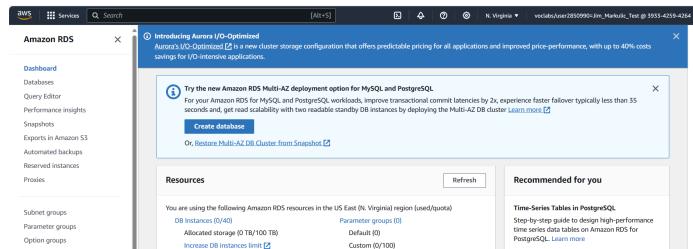
- 9) The spinning icons will appear until the lab is started as shown below. Please note it takes several minutes to start the lab facility.
- 10) Click the AWS link with the green circle to start the AWS Console



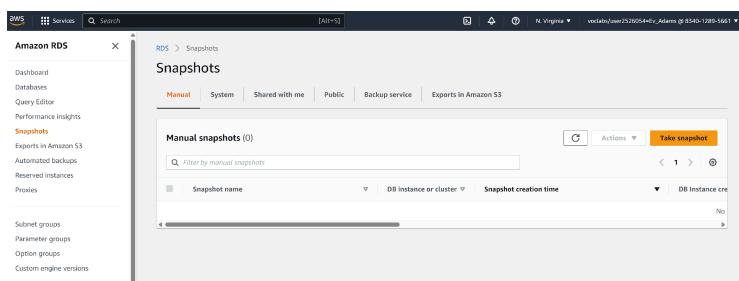
- 11) This will bring you to the AWS Console



- 12) Click RDS and this screen will appear.



- 13) Next, click Snapshots



- 14) Click the Public tab

The screenshot shows the AWS RDS Snapshots page. The left sidebar has 'Amazon RDS' selected under 'Schemas'. The main area is titled 'Snapshots' and shows a table of 'Public snapshots (272)'. The table has columns for 'Snapshot name', 'DB instance or cluster', and 'Snapshot creation time'. One row is highlighted:

Snapshot name	DB instance or cluster	Snapshot creation time
amawsrdsus-east-1:877997288012:snapshot:is631-fall-database-snapshot-2023-07-26	snapshot-test	July 26, 2023, 21:46 (UTC-04:00)
amawsrdsus-east-1:827772569615:snapshot:secret...	secretuncomtable	August 09, 2023, 12:58 (UTC-04:00)
amawsrdsus-east-1:73559215327:snapshot:secret...	secretuncomtable	August 09, 2023, 12:57 (UTC-04:00)
amawsrdsus-east-1:588046982252:snapshot:secret...	secretuncomtable	August 09, 2023, 12:57 (UTC-04:00)

- 15) Type in IS631 in the search filter and one snapshot should appear in the list as shown below. Note the names may be different but only one (1) snapshot will appear in the list.

The screenshot shows the AWS RDS Snapshots page with a search filter applied. The search bar contains 'is631'. The results table shows one row:

Snapshot name	DB instance or cluster	Snapshot creation time
amawsrdsus-east-1:877997288012:snapshot:is631-fall-database-snapshot-2023-07-26		July 26, 2023, 21:46 (UTC-04:00)

- 16) Once you click on the Snapshot name, the following screen will appear. Click on the Actions dropdown and select Restore Snapshot

The screenshot shows the AWS RDS Details page for the snapshot 'arn:aws:rds:us-east-1:877997288012:snapshot:is631-fall-database-snapshot-2023-07-26'. The 'Actions' dropdown is open. The 'Details' section shows the following information:

- ARN: arn:aws:rds:us-east-1:877997288012:snapshot:is631-fall-database-snapshot-2023-07-26
- Instance/Cluster Name: N/A
- Master username: admin
- DB snapshot name: N/A
- Snapshot Creation Time: July 26, 2023, 21:46 (UTC-04:00)
- Original Snapshot Creation Time: July 26, 2023, 21:46 (UTC-04:00)
- Instance/Cluster Creation: July 25, 2023, 14:21 (UTC-04:00)
- VPC: N/A
- Status: N/A

- 17) When the Restore Snapshot script starts, fill in the parameters as follows

The screenshot shows the 'Restore snapshot' wizard. The current step is 'DB instance settings'. The configuration options are:

- DB engine: SQL Server Express Edition
- License model: license-included

Settings

DB snapshot ID
The identifier for the DB snapshot.
arn:aws:rds:sus-east-1:45258984424:snapshot:is631-all-databases-summer-2023

DB instance identifier **Info**
Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.
NJIT-UCID-is631-database

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric characters or hyphens. First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

Change NJIT-UCID to your UCID so the instance name should look like
Sh2321-is631-database

Instance configuration
The DB instance configuration options below are limited to those supported by the engine that you selected above.

DB instance class **Info**
 Burstable classes (includes t classes)

db.t3.small
2 vCPUs 2 GiB RAM Network: 2,085 Mbps

Include previous generation classes

Make sure you change the DB instance Class from db.t3.micro to db.t3.small. Your queries will not run in the micro class instance

Storage

Storage type **Info**
General Purpose SSD (gp2)
Baseline performance determined by volume size

Allocated storage **Info**
20 GiB
The minimum value is 20 GiB and the maximum value is 16,384 GiB

Provisioning less than 100 GiB of General Purpose (SSD) storage for high throughput workloads could result in higher latencies upon exhaustion of the initial General Purpose (SSD) IO credit balance. Learn more

Connectivity **Info**

Virtual private cloud (VPC) **Info**
Choose the VPC. The VPC defines the virtual networking environment for this DB instance.
Default VPC (vpc-05731a4365544a431)
6 Subnets, 6 Availability Zones

Only VPCs with a corresponding DB subnet group are listed.

After a database is created, you can't change its VPC.

DB subnet group **Info**
Choose the DB subnet group. The DB subnet group defines which subnets and IP ranges the DB instance can use in the VPC that you selected.
default

Public access **Info**
 Yes
RDS assigns a public IP address to the database. Amazon EC2 instances and other resources outside of the VPC can connect to your database. Resources inside the VPC can also connect to the database. Choose one or more VPC security groups that specify which resources can connect to the database.

No
RDS doesn't assign a public IP address to the database. Only Amazon EC2 instances and other resources inside the VPC can connect to your database. Choose one or more VPC security groups that specify which resources can connect to the database.

VPC security group (firewall) **Info**
Choose one or more VPC security groups to allow access to your database. Make sure that the security group rules allow the appropriate incoming traffic.

Choose existing
Choose existing VPC security groups

Create new
Create new VPC security group

Existing VPC security groups
Choose one or more options
default

Availability Zone **Info**
No preference

Certificate authority - optional **Info**
Using a server certificate provides an extra layer of security by validating that the connection is being made to an Amazon database. It does so by checking the server certificate that is automatically installed on all databases that you provision.
rds-ca-2019 (default)

If you don't select a certificate authority, RDS chooses one for you.

Microsoft SQL Server Windows Authentication

Choose a directory in which you want to allow authorized domain users to authenticate with this SQL Server instance using Windows Authentication.

Enable Microsoft SQL Server Windows authentication
By choosing a directory and continuing with database instance creation you authorize Amazon RDS to create the IAM role necessary for using Windows Authentication.

Encryption

Enable Encryption
Choose to encrypt the copy of the source DB snapshot. Master key IDs and aliases appear in the list after they have been created using KMS. You cannot remove encryption from an encrypted DB snapshot.

18) Expand Additional Configuration and enter the following.

▼ Additional configuration

Database options

DB parameter group [Info](#)

Option group [Info](#)

Time zone

Collation [Info](#)

Backup

Copy tags to snapshots

Log exports

Select the log types to publish to Amazon CloudWatch Logs

Error log

IAM role

The following service-linked role is used for publishing logs to CloudWatch Logs.

RDS service-linked role

Maintenance

Auto minor version upgrade [Info](#)
 Enable auto minor version upgrade
Enabling auto minor version upgrade will automatically upgrade to new minor versions as they are released. The automatic upgrades occur during the maintenance window for the database.

Deletion protection

Enable deletion protection
Protects the database from being deleted accidentally. While this option is enabled, you can't delete the database.

19) After you have verified the entries and changed the NJIT-UCID in the NJIT-UCID-is631-database to your UCID

DB instance identifier [Info](#)

Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric characters or hyphens. First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

DB instance identifier [Info](#)

Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.

ea239-is631-database

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric characters or hyphens. First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

- 20) Click the Restore DB Instance button. This will start the restore and go back to the main database menu

This screenshot shows the 'Databases' section of the AWS RDS console. A modal window titled 'Consider creating a Blue/Green Deployment to minimize downtime during upgrades' is open. At the bottom right of the main content area, there is a prominent orange 'Create database' button.

- 21) While the restore is running (it will typically take 10 to 15 minutes), click on the database name and this will show the details of the database as follows. Click on the Default VPC Security Group in the bottom right-hand corner of the screen as shown below.

This screenshot shows the detailed view for the database 'ea239-is631-database'. The 'Connectivity & security' tab is active. In the 'Security' section, it shows the 'VPC security groups' field containing 'default (sg-0efff2f10eb3f761)' with a status of 'Active'.

- 22) After the following screen appears, click on the Inbound Rules tab.

This screenshot shows the 'Security Groups (1/1)' page in the AWS EC2 console. The 'Inbound rules' tab is selected for the security group 'sg-0efff2f10eb3f761 - default'. The table lists one rule: 'Allow traffic from 0.0.0.0/0' with port 3306 and protocol TCP.

- 23) Next click the Edit Inbound Rules button in the bottom right hand corner (you may have to scroll down a little to see it).

The screenshot shows the AWS EC2 Security Groups page. A search bar at the top has the text "sg-0e9eff2f10eb3f761". Below it is a table with columns: Name, Security group ID, Security group name, VPC ID, Description, and Owner. One row is selected, showing "sg-0e9eff2f10eb3f761" in the Name column and "default" in the Security group name column. The Owner is listed as "834012895661". At the bottom of the table, there are tabs for Details, Inbound rules, Outbound rules, and Tags. The Inbound rules tab is selected, displaying "Inbound rules (1/1)".

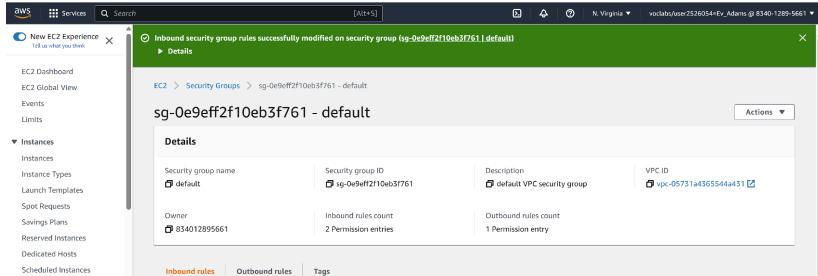
24) The following screen will appear and click the Add Rule Button

The screenshot shows the "Edit inbound rules" page for the "sg-0e9eff2f10eb3f761 - default" security group. It displays a table of existing inbound rules. One rule is selected, showing "sg-0e9eff2f10eb3f761" in the "Source" dropdown. At the bottom of the table, there is a button labeled "Add rule".

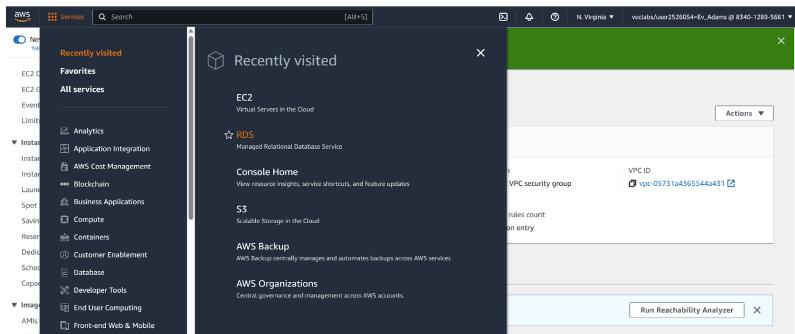
25) In the Custom TCP Dropdown select MSSQL and In the Custom dropdown select Anywhere-IPv4 as shown below. This creates the firewall rule allowing you to access your database through the internet.

The screenshot shows the "Edit inbound rules" page for the "sg-0e9eff2f10eb3f761 - default" security group. A new rule is being added. The "Type" dropdown is set to "All traffic". The "Protocol" dropdown is set to "TCP". The "Port range" dropdown is set to "1433". The "Source" dropdown is set to "Anywhere-IPv4" with the value "0.0.0.0/0". The "Description" field is empty. At the bottom of the table, there is a "Save rules" button.

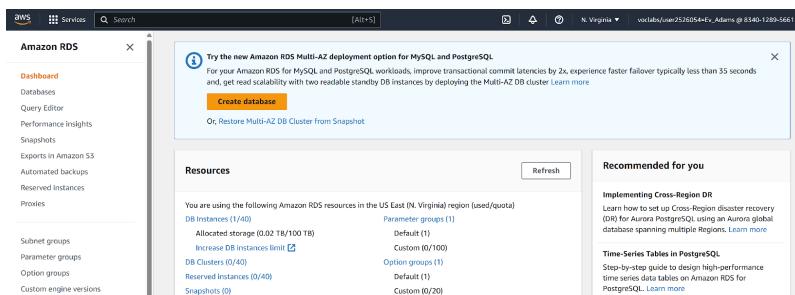
26) Click the Save rule button and you will go back to the main Security Group page



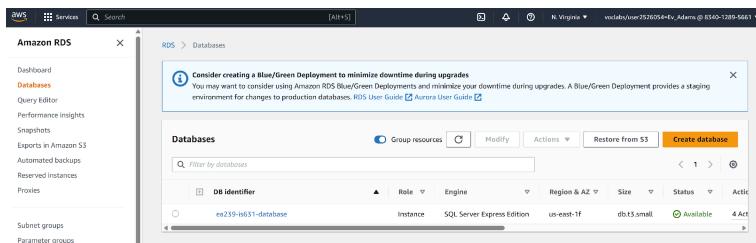
27) Now click the Services button at the top left and select RDS when the following appears.



28) After the RDS menu appears as shown below, click the DB Instances link to see the status of your database



29) Once it says Available under status, your database is ready to use.



30) To get the server name for your database instance click on the link with your database's name

The screenshot shows the AWS RDS console with the database 'ea239-is631-database'. In the 'Connectivity & security' section, the 'Endpoint & port' row shows the endpoint as 'ea239-is631-database.olv9bpapqgt.us-east-1.rds.amazonaws.com'. The 'Networking' section shows the VPC as 'vpc-05731a456544a431'.

31) Highlight and copy the endpoint name as shown below.

The screenshot shows the AWS RDS console with the database 'ea239-is631-database'. In the 'Connectivity & security' section, the 'Endpoint & port' row shows the endpoint as 'ea239-is631-database.olv9bpapqgt.us-east-1.rds.amazonaws.com'. The 'Networking' section shows the VPC as 'vpc-05731a456544a431'. The endpoint URL is highlighted in yellow.

32) Download and install Azure Data Studio [from this link](#)

33) Start up Azure Data Studio and select the New Connection button

The screenshot shows the Azure Data Studio interface with the title bar 'Azure Data Studio'. In the top right corner, there is a 'New Connection' button.

34) When the Connection Details screen appears, paste your endpoint name into the Server box. The User Name is Admin and the Password is IS631Password. Note the password is case sensitive. Click the remember password checkbox and also change the Encrypt to Optional. Then click the connect button

Connection Details

Connection type Microsoft SQL Server

Parameters Connection String

Server * ea239-is631-database.cio9bpapqgts.us-east-1.rds.amazonaws.com

Authentication type SQL Login

User name * Admin

Password ······

Remember password

Database <Default>

Encrypt ⓘ Optional (False)

Trust server certificate ⓘ False

Server group <Default>

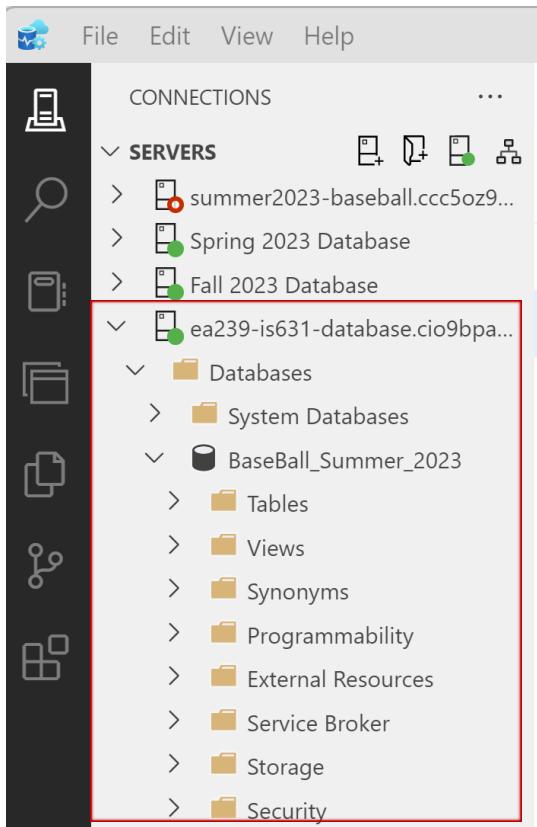
Name (optional)

Advanced...

Connect Cancel

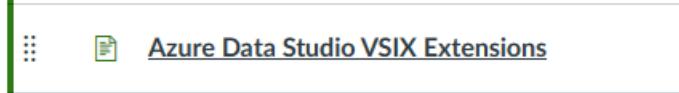


- 35) ADS will connect to your database server and if you expand the Database, you will see the Baseball and other databases created and populated.

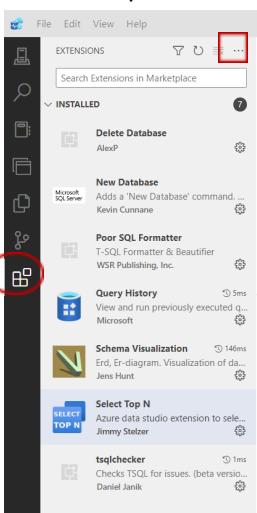


36) Install Azure Data Studio VSIX Extensions

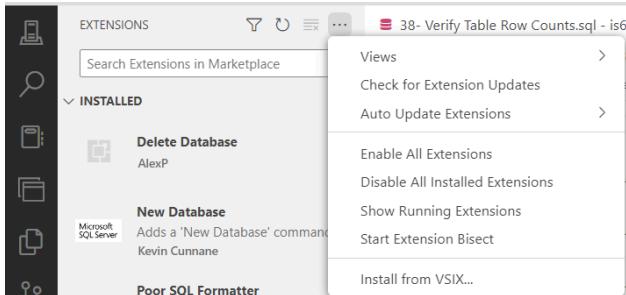
- Download the VSIX files located in the following section of Module One (1).



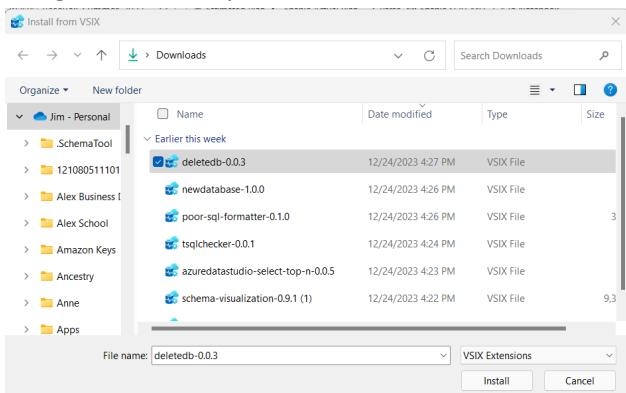
- Click the squares in ADS as circled below



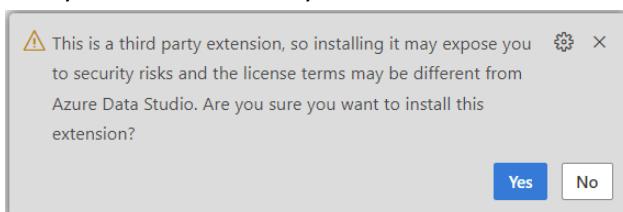
- Next, click the three dots inside the square above
- Select install VSIX from the dropdown as shown below



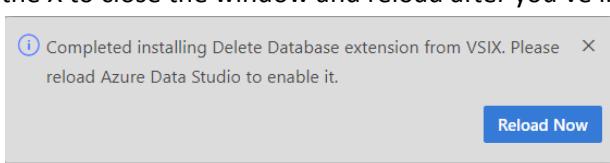
- e) Navigate to where you downloaded the VSIX files, select them one at a time and click install.



- f) Click yes to the Third Party Notice



- g) The following will appear after each VSIX is installed. You can either reload after each one or click the X to close the window and reload after you've installed the last one.



- 37) You are now ready to complete the remaining course assignments.