2022

CLOUD6212 POE ST10090370

KIDUS YARED MEKONNEN

TABLE OF CONTENT

PART A

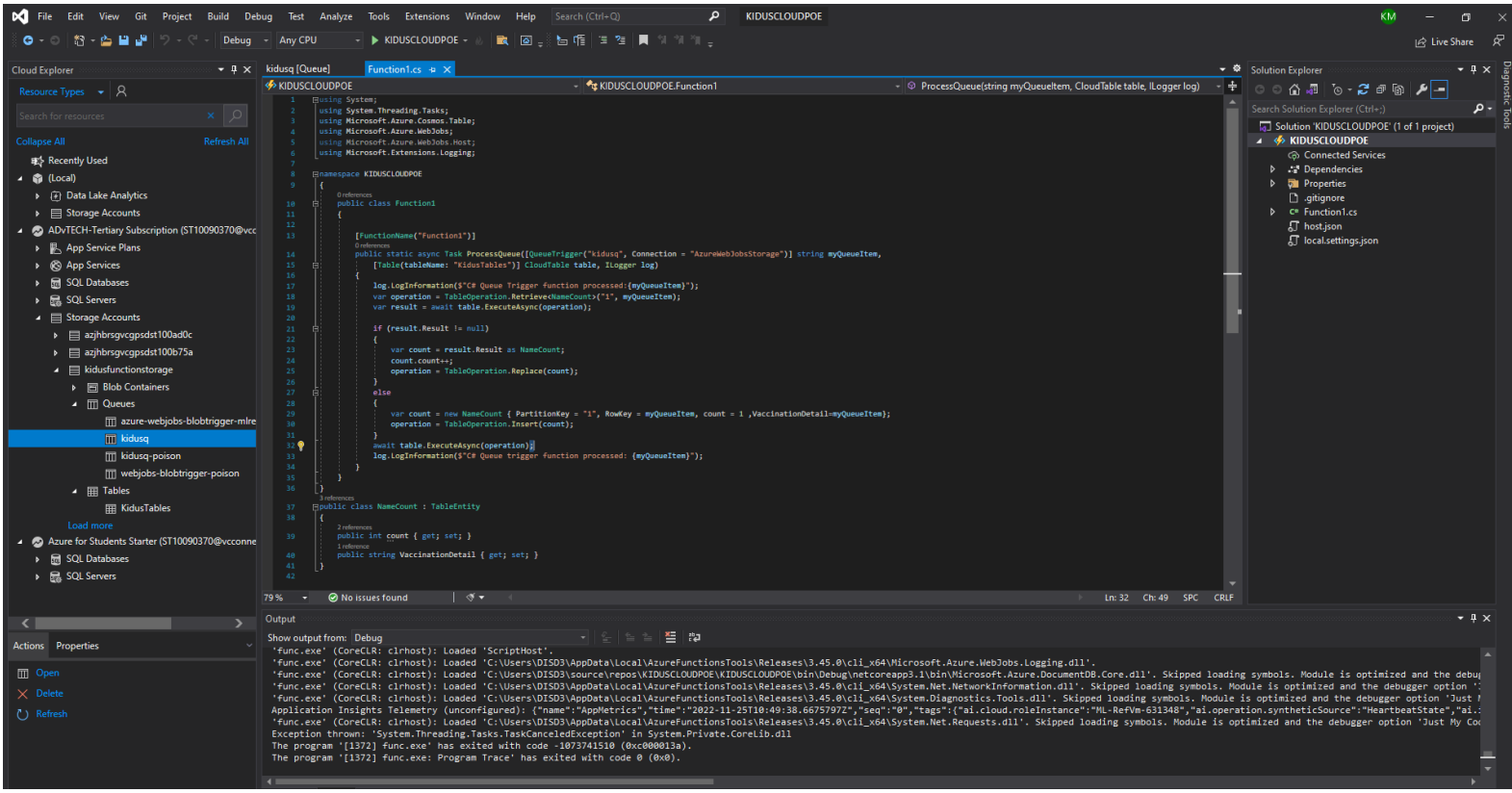
COMPONET	TECHNOLOGY	HOSTING MODEL
VM Scale Set: It provides the ability to configure and create a large number of similarly configured virtual machines in minutes.	Compute	IAAS- This allows you provision individual VMs along with the associated networking networking and storage components. Then you deploy whatever software and applications you want onto those VMs.
Azure App Service- This service provides various web application, Rest API, or mobile backend services. This service manages applications using Azure features such as scalability and security	Compute	PAAS- this gives a managed hosting environment, where you can deploy your application without needing to manage VMs or networking resources. Azure app Service and Azure Container apps are Paas services.
Blob Storage- It can be used to store unstructured data such as images, raw data, or semi-structured data such as XML or CSV files. Files are stored in directory-like structures called containers	Data Storage	IAAS- This allows you provision individual VMs along with the associated networking networking and storage components. Then you deploy whatever software and applications you want onto those VMs.
Azure Tables – It stores data in the form of tables. These tables are NoSQL tables	Data Storage	IAAS- This allows you provision individual VMs along with the associated networking networking and storage components. Then you deploy whatever software and applications you want onto those VMs.
Azure Active Directory- It stores data in the form of tables. These tables are NoSQL tables.	Compute	PAAS- this gives a managed hosting environment, where you can deploy your application without needing to manage VMs or networking resources. Azure app Service and Azure Container apps are Paas services.
Azure Key Vault: This is a hosted cloud management service used to encrypt and securely store keys, connection strings, passwords, or other secrets.	Compute	IAAS- This allows you provision individual VMs along with the associated networking networking and storage components. Then you deploy whatever software and

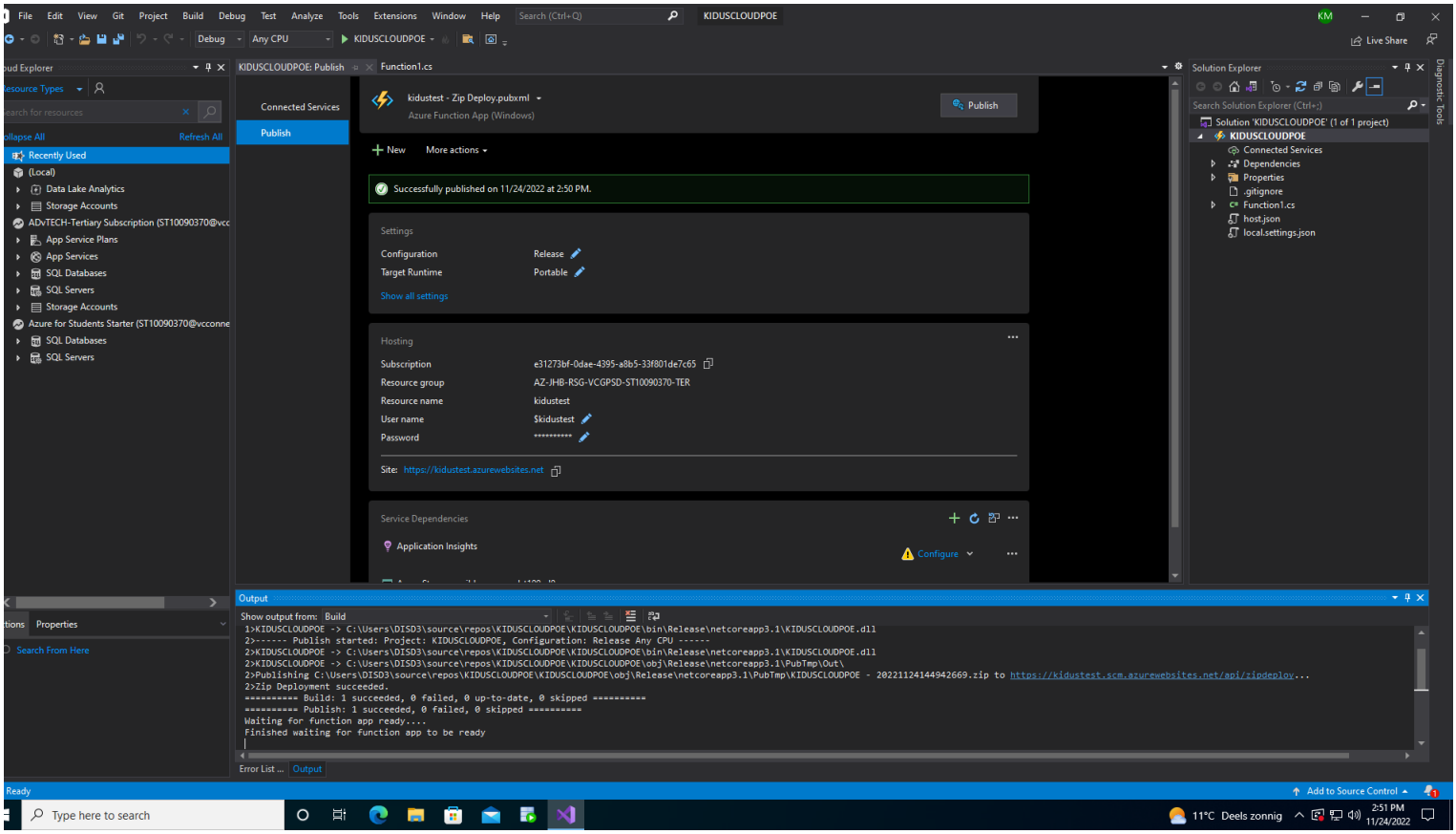
		applications you want onto those VMs.
Metrics – These are numbers used to analyze your application and can represent the performance of your application at any point in time based on its current state.	Compute	PAAS- this gives a managed hosting environment, where you can deploy your application without needing to manage VMs or networking resources. Azure app Service and Azure Container apps are Paas services.
Logs- These are basically records that contain the events that have occurred and the data that was generated during the events	Compute	PAAS- this gives a managed hosting environment, where you can deploy your application without needing to manage VMs or networking resources. Azure app Service and Azure Container apps are Paas services.

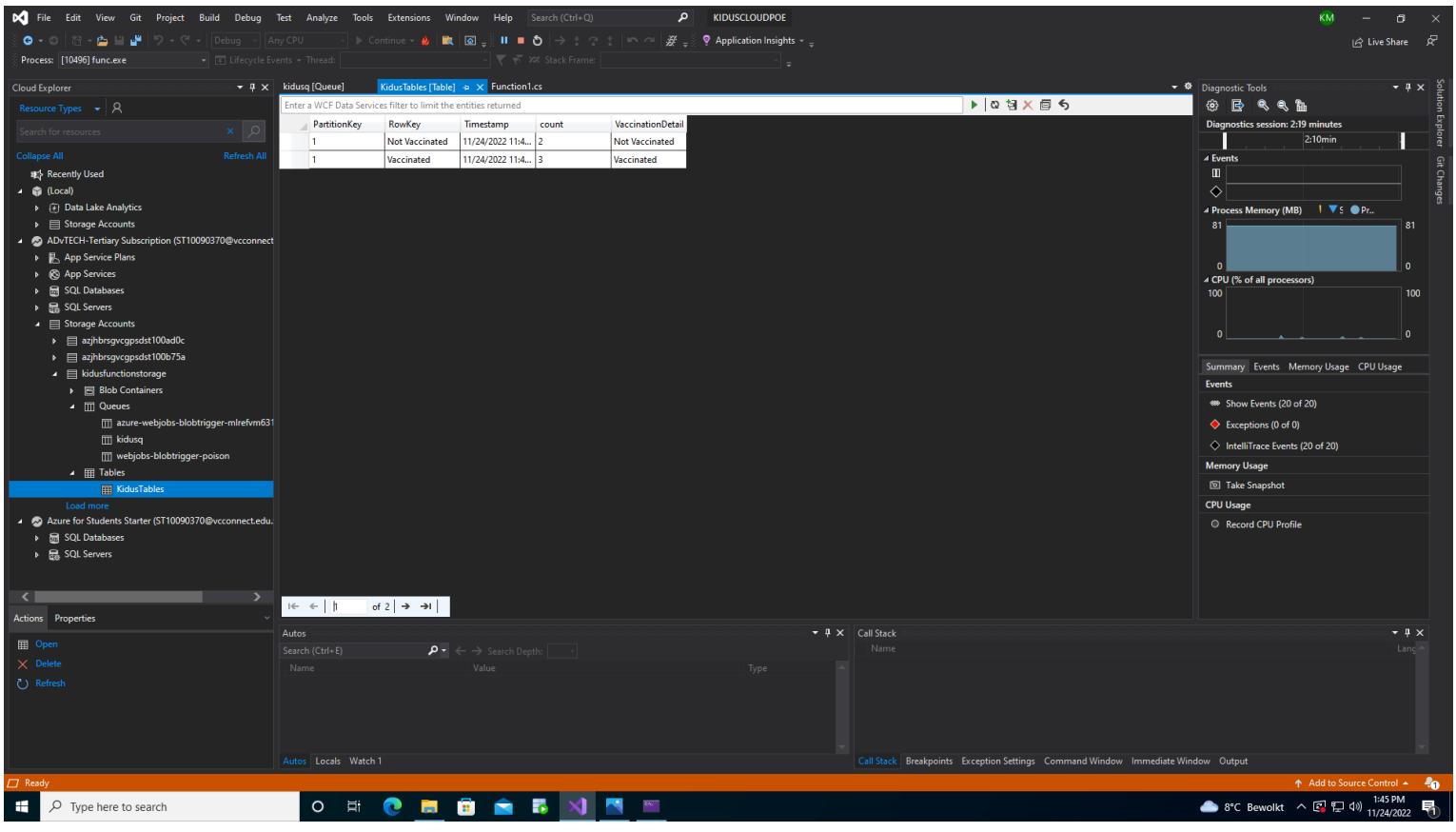
PARTB

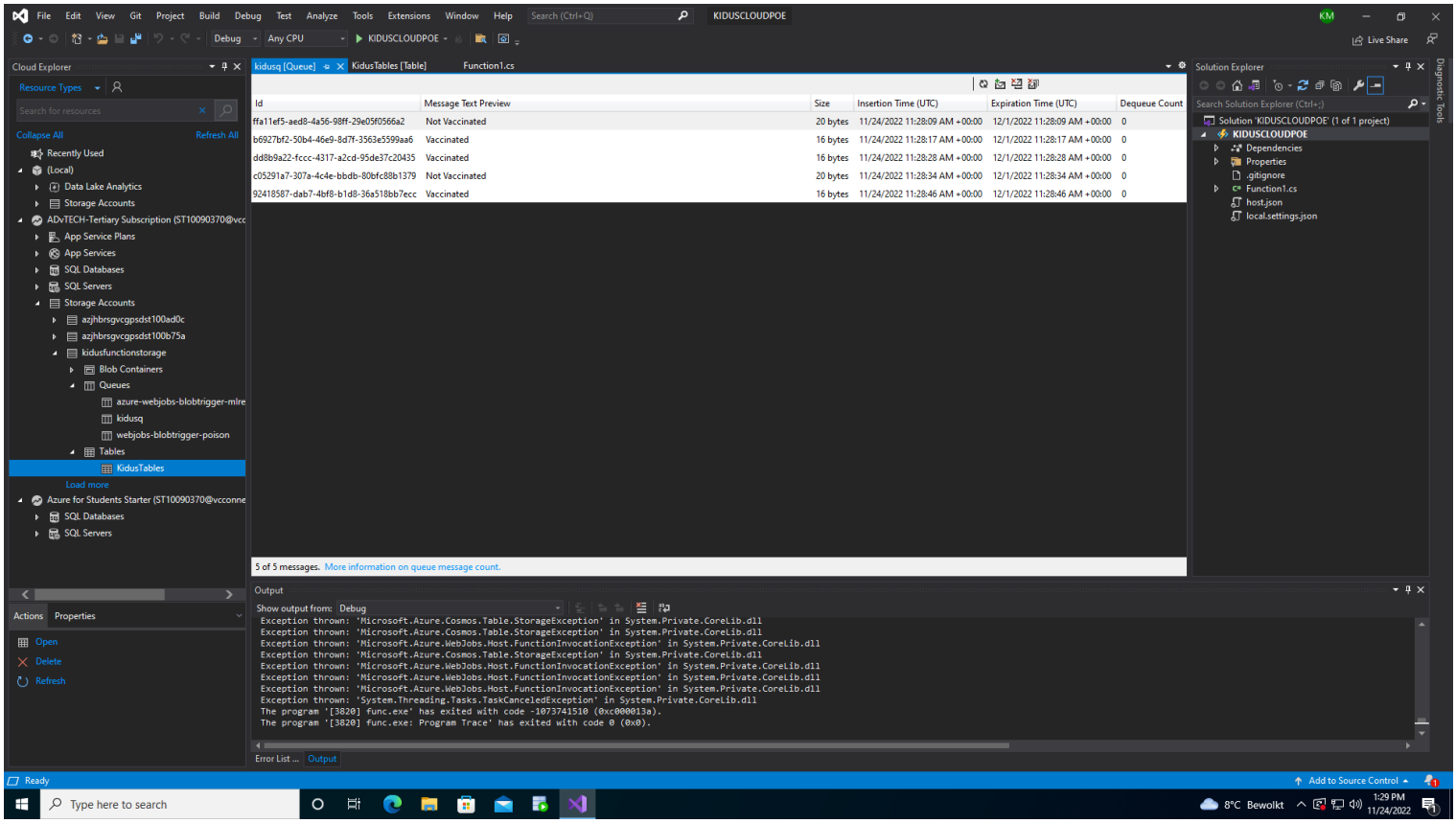
At the beginning of POE, we used queues. Its purpose was to enqueue messages and forward them within the application. A process can interact with the queue, retrieve messages, and perform any desired operations. Now I have a NoSQL component called Azure Tables that stores data in the form of tables. Submitted queues are now stored in an Azure table. These tables are very easy to create and can be accessed in code using the provided URL. Store data in key-value format in the backend. Benefits of using this NoSQL feature of this include a flexible data model that allows you to easily change your database as your needs change. NoSQL is faster when it comes to queries compared to SQL. Another advantage is the fact that it's easier for developers to use and it is much cheaper. (MongoDB, n.d.).

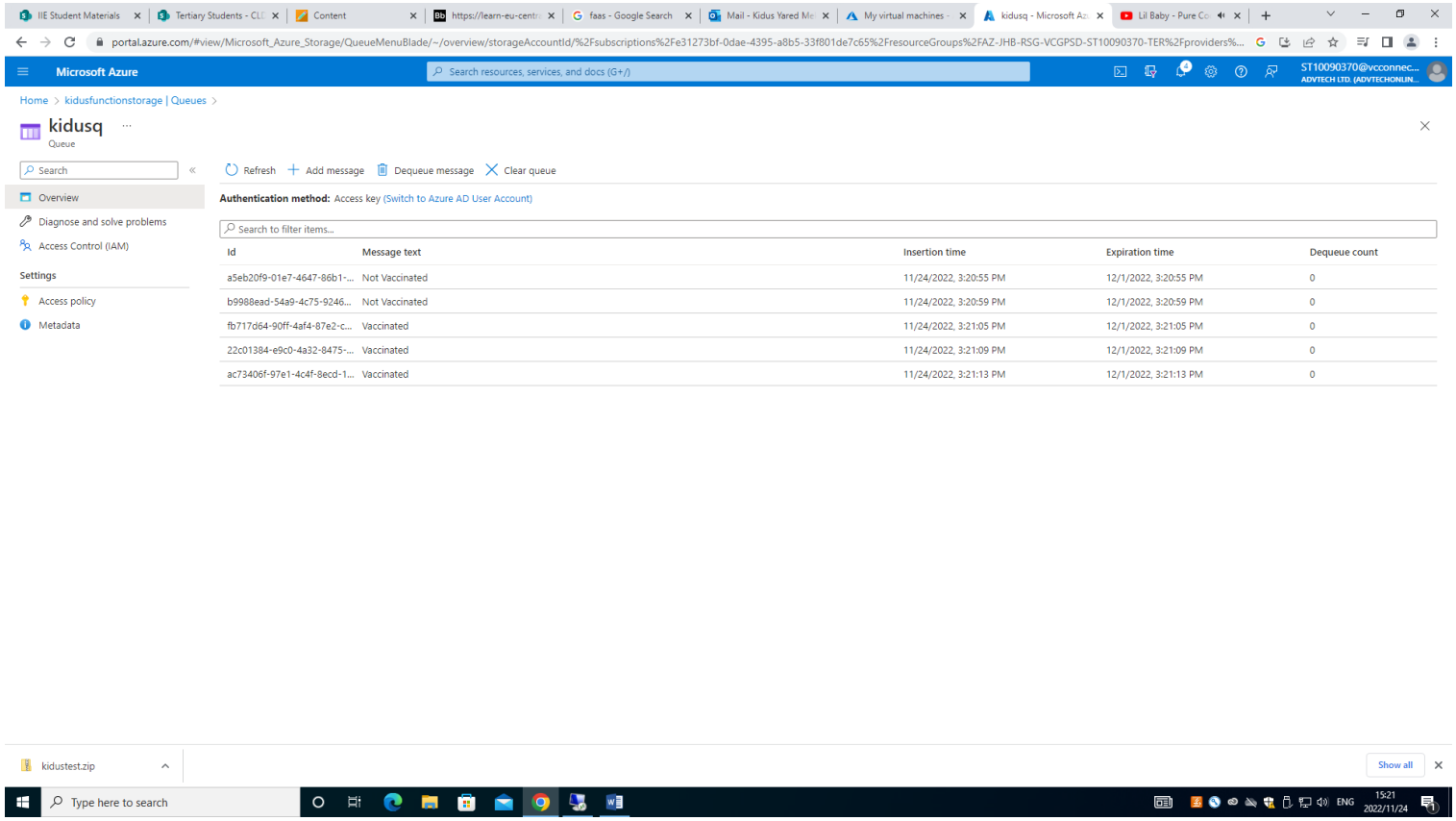
PART C

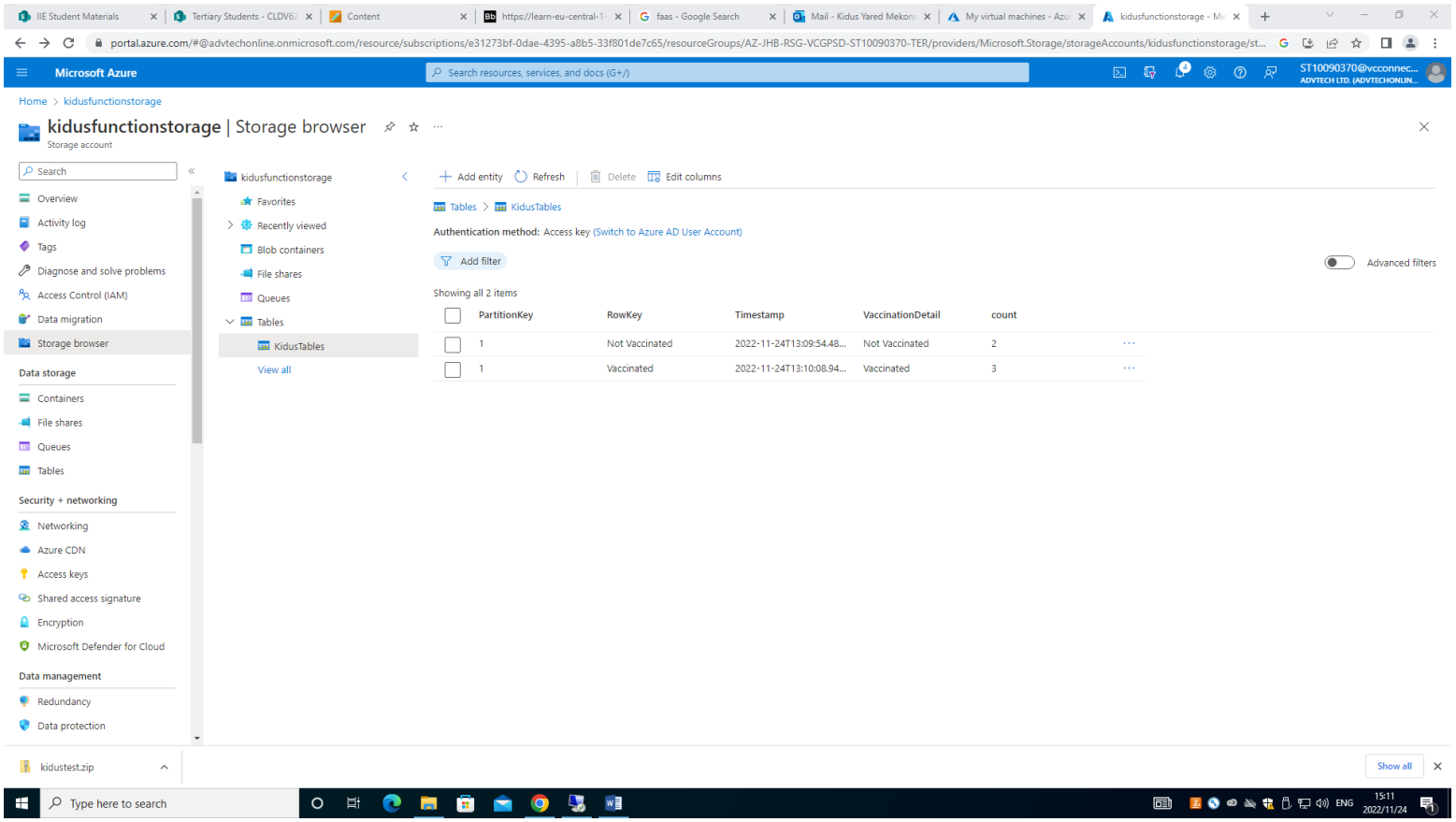

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
KIDUSCLOUDPOE
Debug
Any CPU
KIDUSCLOUDPOE
Live Share
Cloud Explorer
Resource Types
Search for resources
Collapse All
Refresh All
Recently Used
(Local)
Data Lake Analytics
Storage Accounts
ADvTECH-Tertiary Subscription (ST10090370@vcc
App Service Plans
App Services
SQL Databases
SQL Servers
Storage Accounts
azjhbrsgvcgpsdst100ad0c
azjhbrsgvcgpsdst100b75a
kidusfunctionstorage
Blob Containers
Queues
azure-webjobs-blobtrigger-mlre
kidusq
kidusq-poison
webjobs-blobtrigger-poison
Tables
KidusTables
Load more
Azure for Students Starter (ST10090370@vcconne
SQL Databases
SQL Servers
Actions
Properties
Open
Delete
Refresh
kidusq [Queue]
Function1.cs
KIDUSCLOUDPOE
KIDUSCLOUDPOE.Function1
ProcessQueue(string myQueueItem, CloudTable table, ILogger log)
using System;
using System.Threading.Tasks;
using Microsoft.Azure.Cosmos.Table;
using Microsoft.Azure.WebJobs;
using Microsoft.Azure.WebJobs.Host;
using Microsoft.Extensions.Logging;
namespace KIDUSCLOUDPOE
{
0 references
public class Function1
{
[FunctionName("Function1")]
0 references
public static async Task ProcessQueue([QueueTrigger("kidusq", Connection = "AzureWebJobsStorage")] string myQueueItem,
[Table(tableName: "KidusTables")] CloudTable table, ILogger log)
{
log.LogInformation($"C# Queue Trigger function processed:{myQueueItem}");
var operation = TableOperation.Retrieve<NameCount>("1", myQueueItem);
var result = await table.ExecuteAsync(operation);
if (result.Result != null)
{
var count = result.Result as NameCount;
count.count++;
operation = TableOperation.Replace(count);
}
else
{
var count = new NameCount { PartitionKey = "1", RowKey = myQueueItem, count = 1 ,VaccinationDetail=myQueueItem};
operation = TableOperation.Insert(count);
}
await table.ExecuteAsync(operation);
log.LogInformation($"C# Queue trigger function processed: {myQueueItem}");
}
}
3 references
public class NameCount : TableEntity
{
2 references
public int count { get; set; }
1 reference
public string VaccinationDetail { get; set; }
}
79 %
No issues found
Ln: 32
Ch: 49
SPC
CRLF
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'KIDUSCLOUDPOE' (1 of 1 project)
KIDUSCLOUDPOE
Connected Services
Dependencies
Properties
.gitignore
Function1.cs
host.json
local.settings.json
Output
Show output from: Debug
'func.exe' (CoreCLR: clrhost): Loaded 'ScriptHost'.
'func.exe' (CoreCLR: clrhost): Loaded 'C:\Users\DISD3\AppData\Local\AzureFunctionsTools\Releases\3.45.0\cli_x64\Microsoft.Azure.WebJobs.Logging.dll'.
'func.exe' (CoreCLR: clrhost): Loaded 'C:\Users\DISD3\source\repos\KIDUSCLOUDPOE\KIDUSCLOUDPOE\bin\Debug\netcoreapp3.1\bin\Microsoft.Azure.DocumentDB.Core.dll'. Skipped loading symbols. Module is optimized and the debu
'func.exe' (CoreCLR: clrhost): Loaded 'C:\Users\DISD3\AppData\Local\AzureFunctionsTools\Releases\3.45.0\cli_x64\System.Net.NetworkInformation.dll'. Skipped loading symbols. Module is optimized and the debugger option '
'func.exe' (CoreCLR: clrhost): Loaded 'C:\Users\DISD3\AppData\Local\AzureFunctionsTools\Releases\3.45.0\cli_x64\System.Diagnostics.Tools.dll'. Skipped loading symbols. Module is optimized and the debugger option 'Just
Application Insights Telemetry (unconfigured): {"name":"AppMetrics","time":"2022-11-25T10:49:38.6675797Z","seq":"0","tags":{"ai.cloud.roleInstance":"ML-RefVm-631348","ai.operation.syntheticSource":"HeartbeatState","ai.
'func.exe' (CoreCLR: clrhost): Loaded 'C:\Users\DISD3\AppData\Local\AzureFunctionsTools\Releases\3.45.0\cli_x64\System.Net.Requests.dll'. Skipped loading symbols. Module is optimized and the debugger option 'Just My Co
Exception thrown: 'System.Threading.Tasks.TaskCanceledException' in System.Private.CoreLib.dll
The program '[1372] func.exe' has exited with code -1073741510 (0xc000013a).
The program '[1372] func.exe: Program Trace' has exited with code 0 (0x0).


KIDUSCLOUDPOE: Publish
Function1.cs
Connected Services
Publish
kidustest - Zip Deploy.pubxml
Azure Function App (Windows)
Publish
New
More actions
Successfully published on 11/24/2022 at 2:50 PM.
Settings
Configuration Release
Target Runtime Portable
Show all settings
Hosting
Subscription e31273bf-0dae-4395-a8b5-33f801de7c65
Resource group AZ-JHB-RSG-VCGPSD-ST10090370-TER
Resource name kidustest
User name $kidustest
Password **********
Site: https://kidustest.azurewebsites.net
Service Dependencies
Application Insights
Configure
Output
Show output from: Build
1>KIDUSCLOUDPOE -> C:\Users\DISD3\source\repos\KIDUSCLOUDPOE\KIDUSCLOUDPOE\bin\Release\netcoreapp3.1\KIDUSCLOUDPOE.dll
2>------ Publish started: Project: KIDUSCLOUDPOE, Configuration: Release Any CPU ------
2>KIDUSCLOUDPOE -> C:\Users\DISD3\source\repos\KIDUSCLOUDPOE\KIDUSCLOUDPOE\bin\Release\netcoreapp3.1\KIDUSCLOUDPOE.dll
2>KIDUSCLOUDPOE -> C:\Users\DISD3\source\repos\KIDUSCLOUDPOE\KIDUSCLOUDPOE\obj\Release\netcoreapp3.1\PubTmp\Out\
2>Publishing C:\Users\DISD3\source\repos\KIDUSCLOUDPOE\KIDUSCLOUDPOE\obj\Release\netcoreapp3.1\PubTmp\KIDUSCLOUDPOE - 20221124144942669.zip to https://kidustest.scm.azurewebsites.net/api/zipdeploy...
2>Zip Deployment succeeded.
========== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped ==========
========== Publish: 1 succeeded, 0 failed, 0 skipped ==========
Waiting for function app ready....
Finished waiting for function app to be ready
Solution Explorer
Solution 'KIDUSCLOUDPOE' (1 of 1 project)
KIDUSCLOUDPOE
Connected Services
Dependencies
Properties
.gitignore
Function1.cs
host.json
local.settings.json
Ready
Add to Source Control
Type here to search
11°C Deels zonnig
2:51 PM
11/24/2022

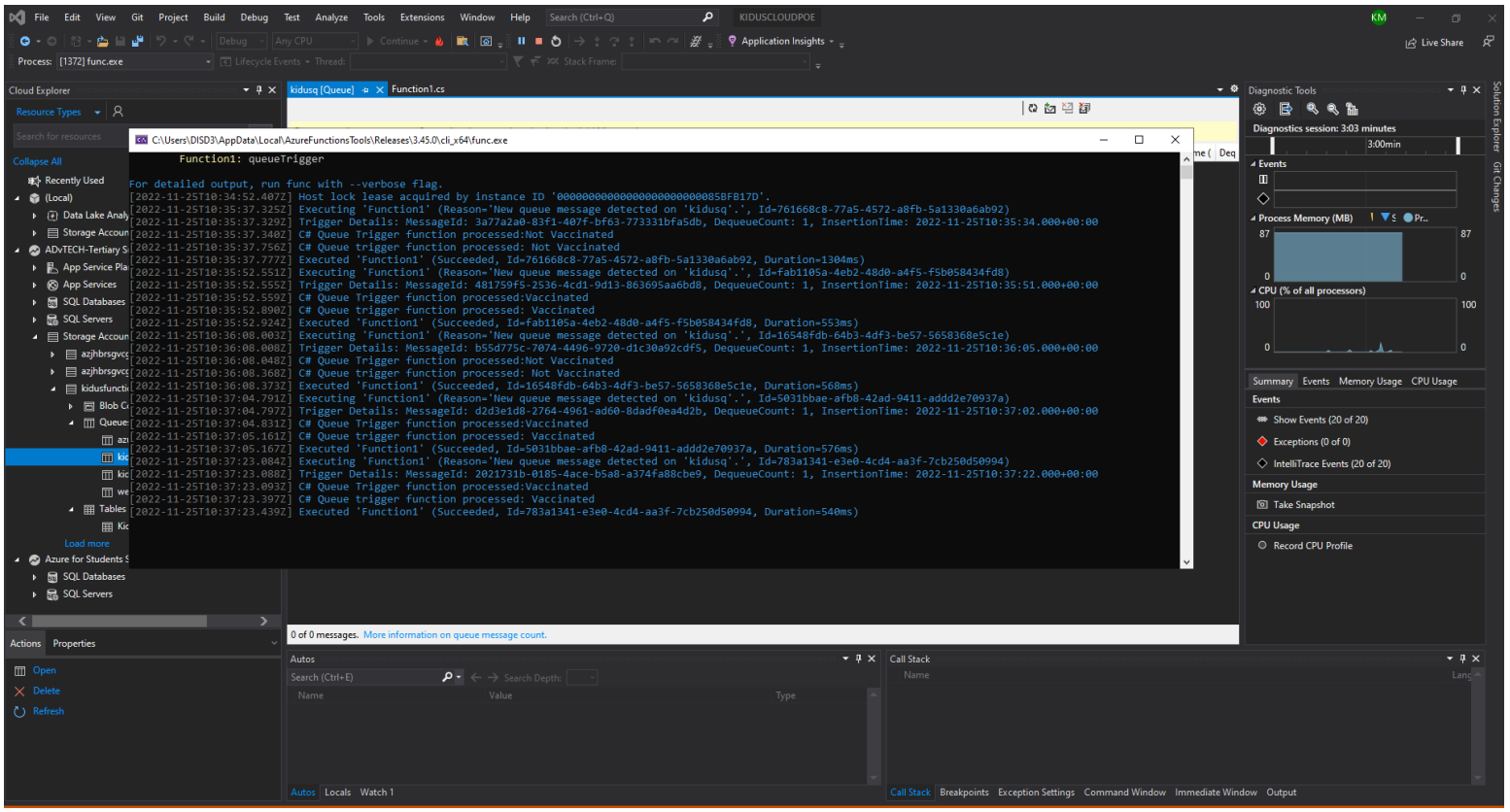

kidusq [Queue]
KidusTables [Table]
Function1.cs
Enter a WCF Data Services filter to limit the entities returned
PartitionKey RowKey Timestamp count VaccinationDetail
1 Not Vaccinated 11/24/2022 11:4... 2 Not Vaccinated
1 Vaccinated 11/24/2022 11:4... 3 Vaccinated
Diagnostic Tools
Diagnostics session: 2:19 minutes
Events
Process Memory (MB)
CPU (% of all processors)
Summary Events Memory Usage CPU Usage
Show Events (20 of 20)
Exceptions (0 of 0)
IntelliTrace Events (20 of 20)
Take Snapshot
Record CPU Profile
Cloud Explorer
Resource Types
Recently Used
(Local)
Data Lake Analytics
Storage Accounts
ADvTECH-Tertiary Subscription (ST10090370@vcconnect
App Service Plans
App Services
SQL Databases
SQL Servers
Storage Accounts
azjhbrsgvcgpsdst100ad0c
azjhbrsgvcgpsdst100b75a
kidusfunctionstorage
Blob Containers
Queues
azure-webjobs-blobtrigger-mlrefvm631
kidusq
webjobs-blobtrigger-poison
Tables
KidusTables
Load more
Azure for Students Starter (ST10090370@vcconnect.edu
SQL Databases
SQL Servers
Actions Properties
Open
Delete
Refresh
Autos
Call Stack
Autos Locals Watch 1
Call Stack Breakpoints Exception Settings Command Window Immediate Window Output
Ready
Add to Source Control
Type here to search
8°C Bewolkt
1:45 PM
11/24/2022


KIDUSCLOUDPOE
kidusq [Queue]
KidusTables [Table]
Function1.cs
Id
Message Text Preview
Size
Insertion Time (UTC)
Expiration Time (UTC)
Dequeue Count
ffa11ef5-aed8-4a56-98ff-29e05f0566a2 Not Vaccinated 20 bytes 11/24/2022 11:28:09 AM +00:00 12/1/2022 11:28:09 AM +00:00 0
b6927bf2-50b4-46e9-8d7f-3563e5599aa6 Vaccinated 16 bytes 11/24/2022 11:28:17 AM +00:00 12/1/2022 11:28:17 AM +00:00 0
dd8b9a22-fccc-4317-a2cd-95de37c20435 Vaccinated 16 bytes 11/24/2022 11:28:28 AM +00:00 12/1/2022 11:28:28 AM +00:00 0
c05291a7-307a-4c4e-bbdb-80bfc88b1379 Not Vaccinated 20 bytes 11/24/2022 11:28:34 AM +00:00 12/1/2022 11:28:34 AM +00:00 0
92418587-dab7-4bf8-b1d8-36a518bb7ecc Vaccinated 16 bytes 11/24/2022 11:28:46 AM +00:00 12/1/2022 11:28:46 AM +00:00 0
5 of 5 messages. More information on queue message count.
Output
Exception thrown: 'Microsoft.Azure.Cosmos.Table.StorageException' in System.Private.CoreLib.dll
Exception thrown: 'Microsoft.Azure.WebJobs.Host.FunctionInvocationException' in System.Private.CoreLib.dll
Exception thrown: 'System.Threading.Tasks.TaskCanceledException' in System.Private.CoreLib.dll
The program '[3820] func.exe' has exited with code -1073741510 (0xc000013a).
The program '[3820] func.exe: Program Trace' has exited with code 0 (0x0).


Microsoft Azure
Home > kidusfunctionstorage | Queues >
kidusq
Queue
Refresh
Add message
Dequeue message
Clear queue
Authentication method: Access key (Switch to Azure AD User Account)
Search to filter items...
Id
Message text
Insertion time
Expiration time
Dequeue count
a5eb20f9-01e7-4647-86b1-... Not Vaccinated 11/24/2022, 3:20:55 PM 12/1/2022, 3:20:55 PM 0
b9988ead-54a9-4c75-9246... Not Vaccinated 11/24/2022, 3:20:59 PM 12/1/2022, 3:20:59 PM 0
fb717d64-90ff-4af4-87e2-c... Vaccinated 11/24/2022, 3:21:05 PM 12/1/2022, 3:21:05 PM 0
22c01384-e9c0-4a32-8475-... Vaccinated 11/24/2022, 3:21:09 PM 12/1/2022, 3:21:09 PM 0
ac73406f-97e1-4c4f-8ecd-1... Vaccinated 11/24/2022, 3:21:13 PM 12/1/2022, 3:21:13 PM 0


Microsoft Azure
Search resources, services, and docs (G+/)
Home > kidusfunctionstorage
kidusfunctionstorage | Storage browser
Storage account
Search
Overview
Activity log
Tags
Diagnose and solve problems
Access Control (IAM)
Data migration
Storage browser
Data storage
Containers
File shares
Queues
Tables
Security + networking
Networking
Azure CDN
Access keys
Shared access signature
Encryption
Microsoft Defender for Cloud
Data management
Redundancy
Data protection
kidusfunctionstorage
Favorites
Recently viewed
Blob containers
File shares
Queues
Tables
KidusTables
View all
Add entity
Refresh
Delete
Edit columns
Tables > KidusTables
Authentication method: Access key (Switch to Azure AD User Account)
Add filter
Advanced filters
Showing all 2 items
PartitionKey
RowKey
Timestamp
VaccinationDetail
count
1
Not Vaccinated
2022-11-24T13:09:54.48...
Not Vaccinated
2
1
Vaccinated
2022-11-24T13:10:08.94...
Vaccinated
3
kidustest.zip
Show all
Type here to search
ENG
15:11
2022/11/24

PART D


C:\Users\DISD3\AppData\Local\AzureFunctionsTools\Releases\3.45.0\cli_x64\func.exe
Function1: queueTrigger
For detailed output, run func with --verbose flag.
[2022-11-25T10:34:52.407Z] Host lock lease acquired by instance ID '000000000000000000000000858FB17D'.
[2022-11-25T10:35:37.325Z] Executing 'Function1' (Reason='New queue message detected on 'kidusq'.', Id=761668c8-77a5-4572-a8fb-5a1330a6ab92)
[2022-11-25T10:35:37.329Z] Trigger Details: MessageId: 3a77a2a0-83f1-407f-bf63-773331bfa5db, DequeueCount: 1, InsertionTime: 2022-11-25T10:35:34.000+00:00
[2022-11-25T10:35:37.340Z] C# Queue Trigger function processed:Not Vaccinated
[2022-11-25T10:35:37.756Z] C# Queue trigger function processed: Not Vaccinated
[2022-11-25T10:35:37.777Z] Executed 'Function1' (Succeeded, Id=761668c8-77a5-4572-a8fb-5a1330a6ab92, Duration=1304ms)
[2022-11-25T10:35:52.551Z] Executing 'Function1' (Reason='New queue message detected on 'kidusq'.', Id=fab1105a-4eb2-48d0-a4f5-f5b058434fd8)
[2022-11-25T10:35:52.555Z] Trigger Details: MessageId: 481759f5-2536-4cd1-9d13-863695aa6bd8, DequeueCount: 1, InsertionTime: 2022-11-25T10:35:51.000+00:00
[2022-11-25T10:35:52.559Z] C# Queue Trigger function processed:Vaccinated
[2022-11-25T10:35:52.890Z] C# Queue trigger function processed: Vaccinated
[2022-11-25T10:35:52.924Z] Executed 'Function1' (Succeeded, Id=fab1105a-4eb2-48d0-a4f5-f5b058434fd8, Duration=553ms)
[2022-11-25T10:36:08.003Z] Executing 'Function1' (Reason='New queue message detected on 'kidusq'.', Id=16548fdb-64b3-4df3-be57-5658368e5c1e)
[2022-11-25T10:36:08.008Z] Trigger Details: MessageId: b55d775c-7074-4496-9720-d1c30a92cdf5, DequeueCount: 1, InsertionTime: 2022-11-25T10:36:05.000+00:00
[2022-11-25T10:36:08.048Z] C# Queue Trigger function processed:Not Vaccinated
[2022-11-25T10:36:08.368Z] C# Queue trigger function processed: Not Vaccinated
[2022-11-25T10:36:08.373Z] Executed 'Function1' (Succeeded, Id=16548fdb-64b3-4df3-be57-5658368e5c1e, Duration=568ms)
[2022-11-25T10:37:04.791Z] Executing 'Function1' (Reason='New queue message detected on 'kidusq'.', Id=5031bbae-afb8-42ad-9411-addd2e70937a)
[2022-11-25T10:37:04.797Z] Trigger Details: MessageId: d2d3e1d8-2764-4961-ad60-8dadf0ea4d2b, DequeueCount: 1, InsertionTime: 2022-11-25T10:37:02.000+00:00
[2022-11-25T10:37:04.831Z] C# Queue Trigger function processed:Vaccinated
[2022-11-25T10:37:05.161Z] C# Queue trigger function processed: Vaccinated
[2022-11-25T10:37:05.167Z] Executed 'Function1' (Succeeded, Id=5031bbae-afb8-42ad-9411-addd2e70937a, Duration=576ms)
[2022-11-25T10:37:23.084Z] Executing 'Function1' (Reason='New queue message detected on 'kidusq'.', Id=783a1341-e3e0-4cd4-aa3f-7cb250d50994)
[2022-11-25T10:37:23.088Z] Trigger Details: MessageId: 2021731b-0185-4ace-b5a8-a374fa88cbe9, DequeueCount: 1, InsertionTime: 2022-11-25T10:37:22.000+00:00
[2022-11-25T10:37:23.093Z] C# Queue Trigger function processed:Vaccinated
[2022-11-25T10:37:23.397Z] C# Queue trigger function processed: Vaccinated
[2022-11-25T10:37:23.439Z] Executed 'Function1' (Succeeded, Id=783a1341-e3e0-4cd4-aa3f-7cb250d50994, Duration=540ms)
Cloud Explorer
Diagnostic Tools
Diagnostics session: 3:03 minutes
Process Memory (MB)
CPU (% of all processors)
Events
Memory Usage
CPU Usage
0 of 0 messages. More information on queue message count.
Autos
Call Stack
Breakpoints
Exception Settings
Command Window
Immediate Window
Output

REFERENCES

MongoDB. (n.d.). *NoSQL Vs SQL Databases*. [online] Available at: https://www.mongodb.com/nosql-explained/nosql-vs-sql#:~:text=Most%20SQL%20databases%20require%20you [Accessed 25 Nov. 2022].

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www.youtube.com. (n.d.). *Azure Queue Storage Tutorial*. [online] Available at: https://www.youtube.com/watch?v=JQ6KhjU5Zsg&t=435s [Accessed 25 Nov. 2022].