



MODERN DATA MANAGEMENT & BUSINESS INTELLIGENCE

ASSIGNMENT 3

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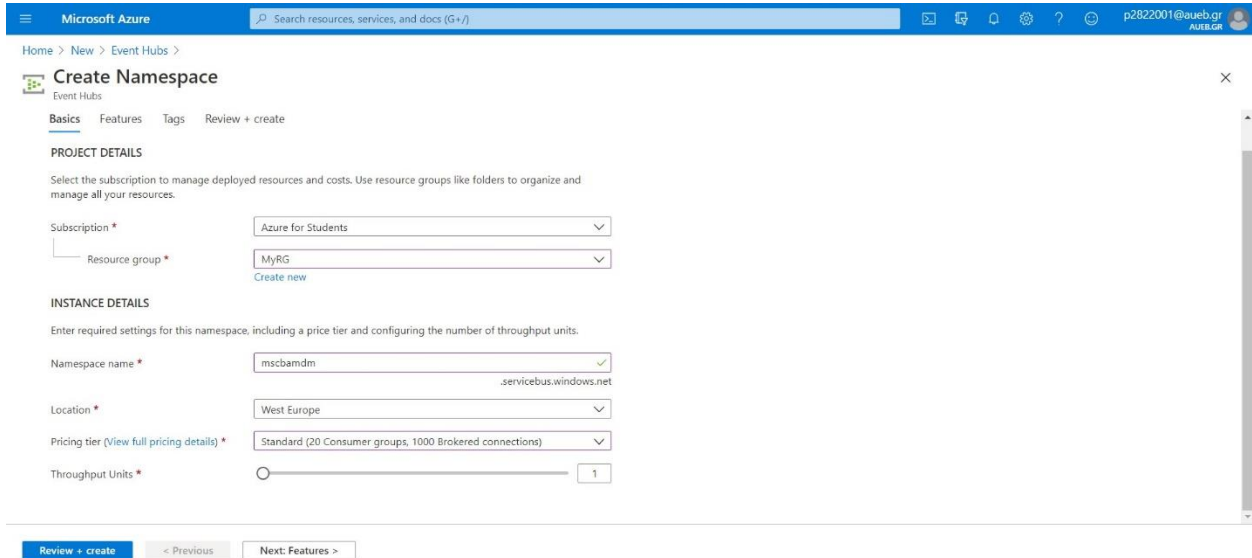
MSc in
Business Analytics

CONTENTS

- EVENT HUB SETUP PROCESS
- STORAGE ACCOUNT SETUP PROCESS
- STREAM ANALYTICS JOB CREATION
- QUERIES
- BLOB STORAGE OUTPUT

EVENT HUB SETUP PROCESS

Creation of Namespace



Microsoft Azure

Search resources, services, and docs (G+J)

Home > New > Event Hubs >

Create Namespace

Event Hubs

Basics Features Tags Review + create

PROJECT DETAILS

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * Azure for Students

Resource group * MyRG

[Create new](#)

INSTANCE DETAILS

Enter required settings for this namespace, including a price tier and configuring the number of throughput units.

Namespace name * mscbamdm ✓
.servicebus.windows.net

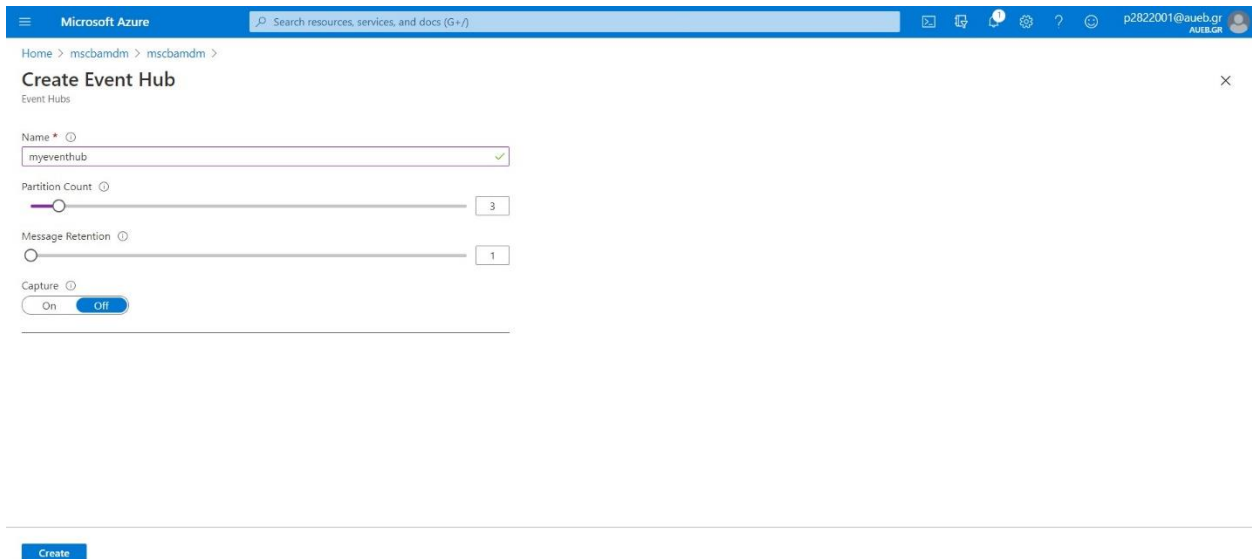
Location * West Europe

Pricing tier (View full pricing details) * Standard (20 Consumer groups, 1000 Brokered connections)

Throughput Units * 1

[Review + create](#) < Previous Next: Features >

Creation of Event Hub



Microsoft Azure

Search resources, services, and docs (G+J)

Home > mscbamdm > mscbamdm >

Create Event Hub

Event Hubs

Name * myeventhub ✓

Partition Count 3

Message Retention 1

Capture Off

[Create](#)

Setting Policies of Event Hub

Microsoft Azure

Home > mscbamdm > mscbamdm > myeventhub (mscbamdm/myeventhub)

myeventhub (mscbamdm/myeventhub) | Shared access policies

Event Hubs Instance

Search (Ctrl+/)

Overview

Access control (IAM)

Diagnose and solve problems

Settings

Shared access policies

Properties

Locks

Entities

Consumer groups

Features

Capture

Process data

Automation

Tasks (preview)

Export template

Search to filter items...

Policy	Claims
MySendPolicy	Send
MyRecPolicy	Listen

SAS Policy: MySendPolicy

Save Discard Delete

Manage

☒ Send

☐ Listen

Primary key

RG1n4HGQ0tj-yNjvUx8wsGQ46kb69HT2ajaq...

Secondary key

Q2EaYAnYQV6x7RXiD3E0FZtQ0IQcXUfYyevQ1f...

Connection string-primary key

Endpoint=sb://mscbamdm.servicebus.windows.n...

Connection string-secondary key

Endpoint=sb://mscbamdm.servicebus.windows.n...

Microsoft Azure

Home > mscbamdm > mscbamdm > myeventhub (mscbamdm/myeventhub)

myeventhub (mscbamdm/myeventhub) | Shared access policies

Event Hubs Instance

Search (Ctrl+/)

Overview

Access control (IAM)

Diagnose and solve problems

Settings

Shared access policies

Properties

Locks

Entities

Consumer groups

Features

Capture

Process data

Automation

Tasks (preview)

Export template

Search to filter items...

Policy	Claims
MySendPolicy	Send
MyRecPolicy	Listen

SAS Policy: MyRecPolicy

Save Discard Delete

Manage

☐ Send

☒ Listen

Primary key

jPDQbKvZF12AQAhimu85Q/V3XD1ztCRNx5OF...

Secondary key

ycXP8fdIVUx535TKrUn+e1m3DPMmh2+JWH4...

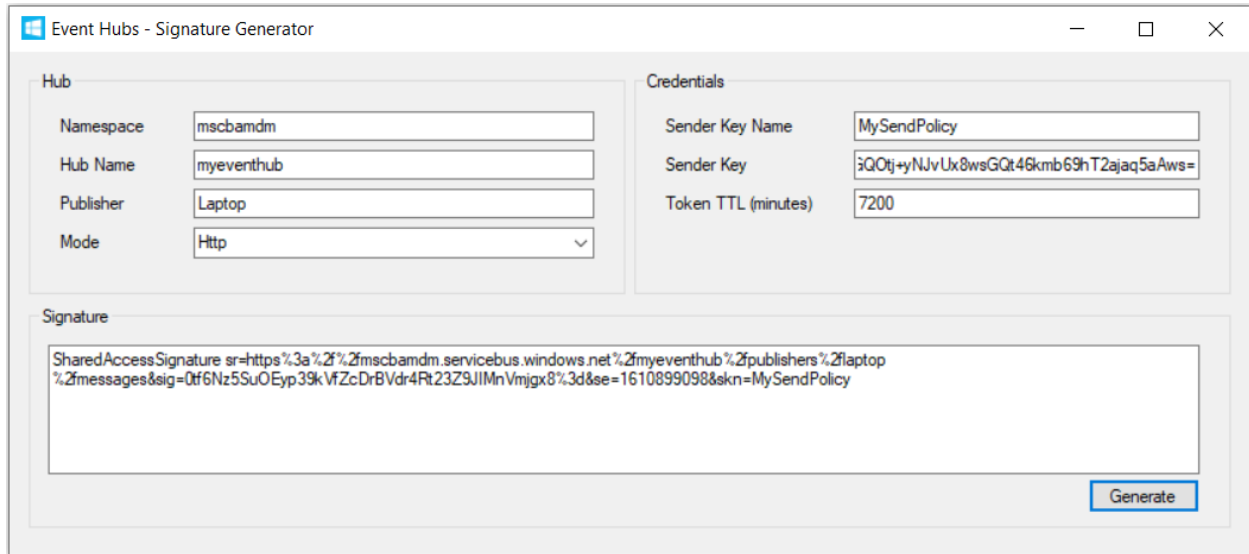
Connection string-primary key

Endpoint=sb://mscbamdm.servicebus.window...

Connection string-secondary key

Endpoint=sb://mscbamdm.servicebus.window...

Setting Signature



The screenshot shows a web application titled "Event Hubs - Signature Generator". It is divided into three main sections: "Hub", "Credentials", and "Signature".

- Hub Section:** Contains four input fields: "Namespace" (mscbandm), "Hub Name" (myeventhub), "Publisher" (Laptop), and "Mode" (Http with a dropdown arrow).
- Credentials Section:** Contains three input fields: "Sender Key Name" (MySendPolicy), "Sender Key" (3Q0tj+yNJvUx8wsGQt46kmb69hT2ajaq5aAws=), and "Token TTL (minutes)" (7200).
- Signature Section:** A large text area displaying the generated SharedAccessSignature: `SharedAccessSignature sr=https%3a%2f%2fmscbandm.servicebus.windows.net%2fmyeventhub%2fpublishers%2flaptop%2fmessages&sig=0tf6Nz5SuOEyp39kVfZcDrBVdr4Rt23Z9JIMnVmJgx8%3d&se=1610899098&skn=MySendPolicy`. Below this text area is a blue "Generate" button.

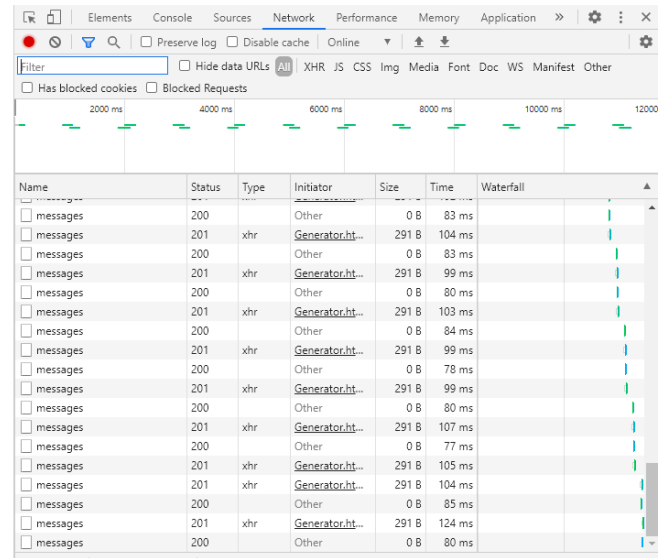
Edit configuration of Genarator.html

```
//Use the signature generator: https://github.com/sandrinodimattia/RedDog/releases
var sas = "SharedAccessSignature sr=https%3a%2f%2fmscbandm.servicebus.windows.net%2fmyeventhub%2fpublishers%2flaptop%2fmessages&sig=0tf6Nz5SuOEyp39kVfZcDrBVdr4Rt23Z9JIMnVmJgx8%3d&se=1610899098&skn=MySendPolicy";
var serviceNamespace = "mscbandm";
var hubName = "myeventhub";
var deviceName = "Laptop";
```

Send data with Generator.html

Send Data

Sent: { "ATMCode": 16, "CardNumber": 3583257214000023, "Type": 0, "Amount": 32 }



Name	Status	Type	Initiator	Size	Time	Waterfall
messages	200		Other	0 B	83 ms	
messages	201	xhr	Generator.ht...	291 B	104 ms	
messages	200		Other	0 B	83 ms	
messages	201	xhr	Generator.ht...	291 B	99 ms	
messages	200		Other	0 B	80 ms	
messages	201	xhr	Generator.ht...	291 B	103 ms	
messages	200		Other	0 B	84 ms	
messages	201	xhr	Generator.ht...	291 B	99 ms	
messages	200		Other	0 B	78 ms	
messages	201	xhr	Generator.ht...	291 B	99 ms	
messages	200		Other	0 B	80 ms	
messages	201	xhr	Generator.ht...	291 B	107 ms	
messages	200		Other	0 B	77 ms	
messages	201	xhr	Generator.ht...	291 B	105 ms	
messages	201	xhr	Generator.ht...	291 B	104 ms	
messages	200		Other	0 B	85 ms	
messages	201	xhr	Generator.ht...	291 B	124 ms	
messages	200		Other	0 B	80 ms	

STORAGE ACCOUNT SETUP PROCESS

Creation of Blob Storage Account

Microsoft Azure

Search resources, services, and docs (G+J)

Home > New > Storage account >

Create storage account

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * Azure for Students

Resource group * MyRG

Create new

Instance details

The default deployment model is Resource Manager, which supports the latest Azure features. You may choose to deploy using the classic deployment model instead. [Choose classic deployment model](#)

Storage account name * mscbastorageaccount

Location * (Europe) West Europe

Performance Standard Premium

Account kind BlobStorage

Replication Read-access geo-redundant storage (RA-GRS)

Accounts with the selected kind, replication and performance type only support

Review + create

< Previous

Next: Networking >

Creation of Container at Blob Storage Account

Microsoft Azure

Search resources, services, and docs (G+J)

Home > Microsoft.StorageAccount-20210112180542 > mscbastorageaccount

mscbastorageaccount | Containers

Storage account

Search (Ctrl+J)

+ Container Change access level Restore containers Refresh Delete

Search containers by prefix

Name	Last modified	Public access level
You don't have any containers yet. Click '+ Container' to get started.		

Overview

Activity log

Tags

Diagnose and solve problems

Access Control (IAM)

Data transfer

Events

Storage Explorer (preview)

Settings

Access keys

Geo-replication

CORS

Configuration

Encryption

Shared access signature

Networking

New container

Name * container

Public access level Private (no anonymous access)


Advanced

Create Discard

Upload reference data at Container

Microsoft Azure

Search resources, services, and docs (G+J)



p2822001@aub.gr

Home

>

Microsoft.StorageAccount-20210112180542

>

mscbastorageaccount

>

container

Container

Search (Ctrl+J)

<<

Upload

Change access level

Refresh

Delete

Change tier

Acquire lease

Break lease

View snapshots

Create snapshot

Overview

Access Control (IAM)

Settings

Access policy

Properties

Metadata

Authentication method: Access key (Switch to Azure AD User Account)

Location: container

Search blobs by prefix (case-sensitive)

Show deleted blobs

Name	Modified	Access tier	Blob type	Size	Lease state	
<input type="checkbox"/> Area.json	1/12/2021, 6:11:16 PM	Hot (Inferred)	Block blob	990 B	Available	...
<input type="checkbox"/> Atm.json	1/12/2021, 6:11:16 PM	Hot (Inferred)	Block blob	1.04 KiB	Available	...
<input type="checkbox"/> Customer.json	1/12/2021, 6:11:16 PM	Hot (Inferred)	Block blob	3.23 KiB	Available	...

STREAM ANALYTICS JOB CREATION

Creation of Stream Analytics Job

Microsoft Azure Search resources, services, and docs (G+/)

Home > New > Stream Analytics job >

New Stream Analytics job

This will create a new Stream Analytics job. You will be charged according to Azure Stream Analytics billing model. Learn more. →

Job name *
stream ✓

Subscription *
Azure for Students

Resource group *
MyRG
[Create new](#)

Location *
West Europe

Hosting environment ⓘ
☒ Cloud ☐ Edge

Streaming units (1 to 192) ⓘ
☐ ☒ 3

☐ Secure all private data assets needed by this job in my [Storage account](#)

[Create](#)

Add Inputs at Stream

Event Hub

New input

Input alias *
input ✓

☐ Provide Event Hub settings manually
☒ Select Event Hub from your subscriptions

Subscription
Azure for Students

Event Hub namespace * ⓘ
mscbamdms

Event Hub name * ⓘ
☐ Create new ☒ Use existing
myeventhub

Event Hub consumer group * ⓘ
☒ Create new ☐ Use existing
stream_input_consumer_group ✓

Authentication mode
Connection string

Event Hub policy name * ⓘ
☐ Create new ☒ Use existing
MyRecPolicy

[Save](#)

Blob storage/ADLS Gen2

New input

Input alias *

area

- ☐ Provide Blob storage/ADLS Gen2 settings manually
☒ Select Blob storage/ADLS Gen2 from your subscriptions

Subscription

Azure for Students

Storage account *

mscbastorageaccount

Container *

- ☐ Create new
☒ Use existing

container

Storage account key

Path pattern * ⓘ

Area.json

Date format

YYYY/MM/DD

Time format

HH

Save

Microsoft Azure			
Search resources, services, and docs (0+)			
Home > stream >			
Inputs			
+ Add stream input + Add reference input			
Name	Source type	Source	
area	Reference	Blob storage	🔗 🗑️
atm	Reference	Blob storage	🔗 🗑️
customer	Reference	Blob storage	🔗 🗑️
input	Stream	Event Hub	🔗 🗑️ ⬇️

Add Output at Stream

Blob storage/ADLS Gen2

×

New output

Output alias *

output

✓

○ Provide storage settings manually

● Select storage from your subscriptions

Subscription

Azure for Students

▼

Storage account * ⓘ

mscbastorageaccount

▼

Storage account key

Container *

○ Create new

● Use existing

container

▼

Path pattern ⓘ

Date format

YYYY/MM/DD

▼

Time format

HH

▼

Save

Microsoft Azure

🔍

Search resources, services, and docs (G+)

🏠

🔧

📄

👤

?

⌵

p2822001@aub.gr
AUB-GR

Home > stream >

Outputs

×

+

Add

▼

Name	Sink	
output	Blob storage	<div>🔗</div> <div>🗑️</div>

Sample data from input

```
streamdemo-input.json x Generator.html x Customer.json x
[
  {
    "ATMCode":15,
    "CardNumber":201634601435467,
    "Type":1,
    "Amount":11,
    "EventProcessedUtcTime":"2021-01-10T17:01:03.0743048Z",
    "PartitionId":0,
    "EventEnqueuedUtcTime":"2021-01-10T16:57:29.0800000Z"
  },
  {
    "ATMCode":19,
    "CardNumber":5200253312538103,
    "Type":1,
    "Amount":11,
    "EventProcessedUtcTime":"2021-01-10T17:01:03.0743048Z",
    "PartitionId":0,
    "EventEnqueuedUtcTime":"2021-01-10T16:57:29.0960000Z"
  },
  {
    "ATMCode":13,
    "CardNumber":50383945269330136,
    "Type":0,
    "Amount":42,
    "EventProcessedUtcTime":"2021-01-10T17:01:03.0743048Z",
    "PartitionId":0,
    "EventEnqueuedUtcTime":"2021-01-10T16:57:29.0960000Z"
  },
  {
    "ATMCode":12,
    "CardNumber":5893112367133403000,
    "Type":1,
    "Amount":15,
    "EventProcessedUtcTime":"2021-01-10T17:01:03.0743048Z",
    "PartitionId":0,
    "EventEnqueuedUtcTime":"2021-01-10T16:57:29.0960000Z"
  },
  {
    "ATMCode":21,
    "CardNumber":5610827137784218,
    "Type":0,
    "Amount":43,
    "EventProcessedUtcTime":"2021-01-10T17:01:03.0743048Z",
    "PartitionId":0,
    "EventEnqueuedUtcTime":"2021-01-10T16:57:29.1270000Z"
  }
],
```

Upload test data at Stream

The screenshot shows the Microsoft Azure Stream Analytics Query editor. On the left, there's a sidebar with navigation options like Overview, Activity log, Access control (IAM), Tags, and Settings. The main area displays a query in SQL:

```
1 SELECT *
2 INTO [YourOutputAlias]
3 FROM [YourInputAlias]
```

 A dialog box titled 'Upload sample data' is open on the right. It contains a text input field with 'Customer.json' and a button to upload the file. Below the input field, there's a message: 'You can upload a file with sample input to test your query against. Stream Analytics supports processing input in JSON, CSV and Avro formats with UTF-8 encoding natively.' At the bottom of the dialog is an 'OK' button.

Test query

The screenshot shows the Microsoft Azure Stream Analytics Query editor with the 'Test results' tab selected. The query is:

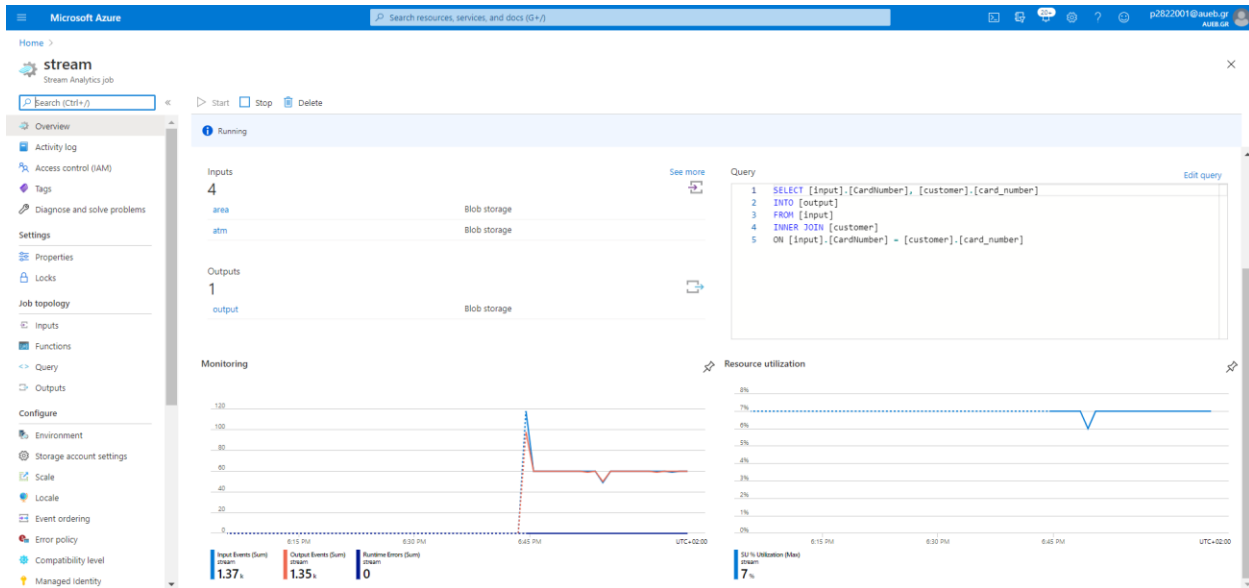
```
1 SELECT [input].[CardNumber], [customer].[card_number]
2 INTO [output]
3 FROM [input]
4 INNER JOIN [customer]
5 ON [input].[CardNumber] = [customer].[card_number]
```

 The 'Test results' section shows a table with two columns: 'CardNumber' and 'card_number'. It displays 50 rows from the 'output' table. The data is as follows:

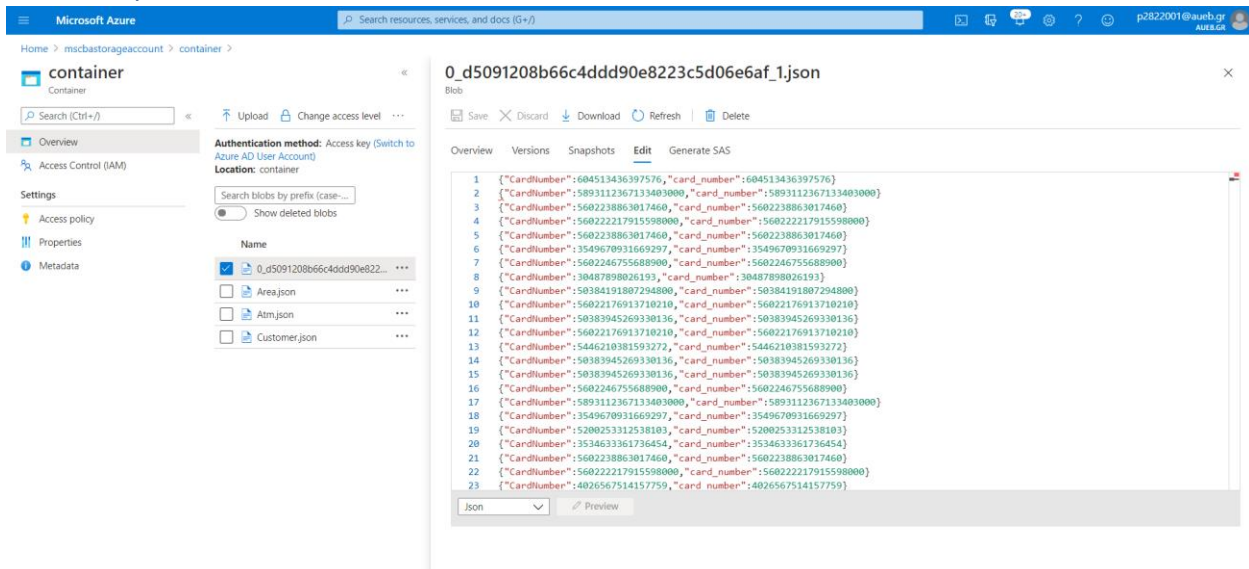
CardNumber	card_number
5602246755688900	5602246755688900
5610827137784218	5610827137784218
560222217915598000	560222217915598000
3535766537597043	3535766537597043
56022176913710210	56022176913710210
30487898026193	30487898026193

 At the bottom, there's a 'Success' status and a 'Download results' link.

Start stream



Blob output of stream

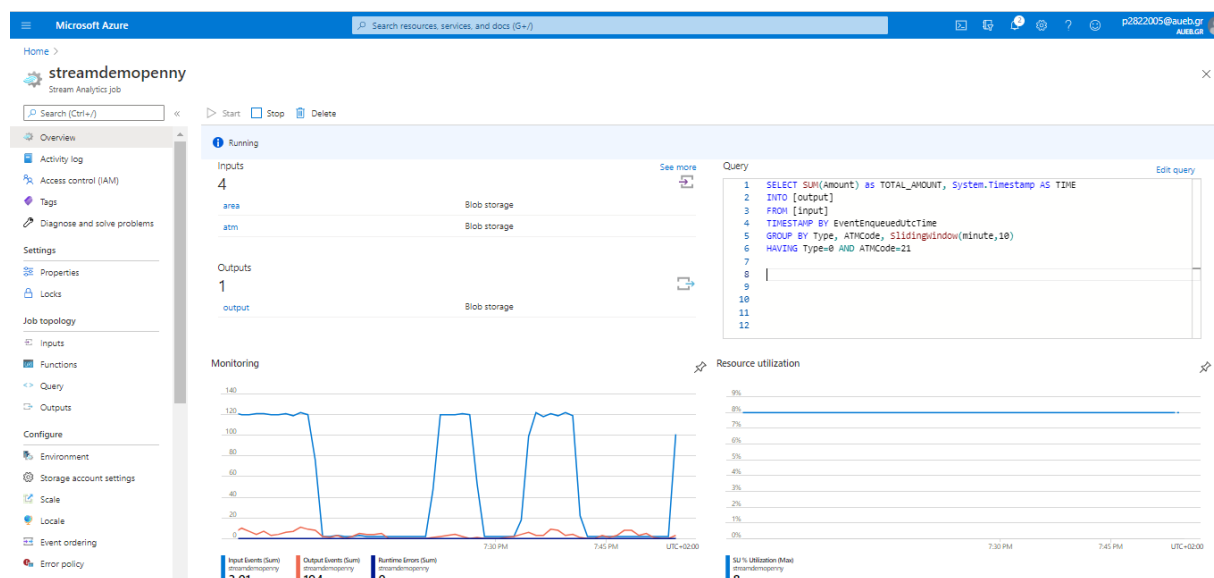


QUERIES

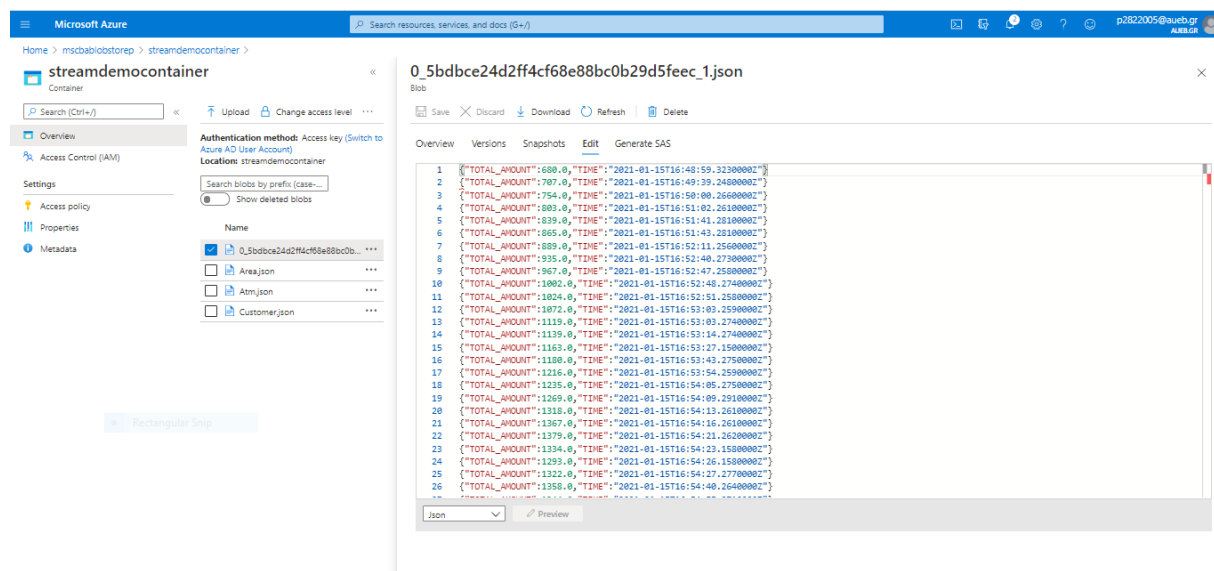
1. SHOW THE TOTAL “AMOUNT” OF “TYPE = 0” TRANSACTIONS AT “ATM CODE = 21” OF THE LAST 10 MINUTES. REPEAT AS NEW EVENTS KEEP FLOWING IN (USE A SLIDING WINDOW).

```
SELECT SUM(Amount) as TOTAL_AMOUNT, System.Timestamp AS TIME
INTO [output]
FROM [input]
TIMESTAMP BY EventEnqueuedUtcTime
GROUP BY Type, ATMCode, SlidingWindow(minute,10)
HAVING Type=0 AND ATMCode=21
```

Input



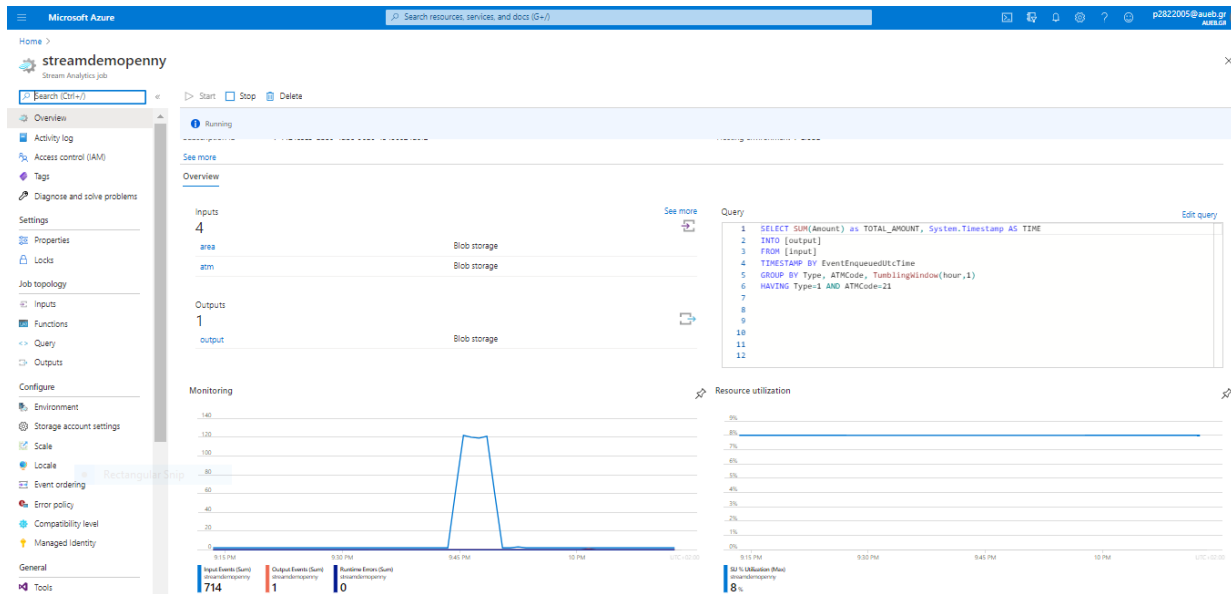
Output



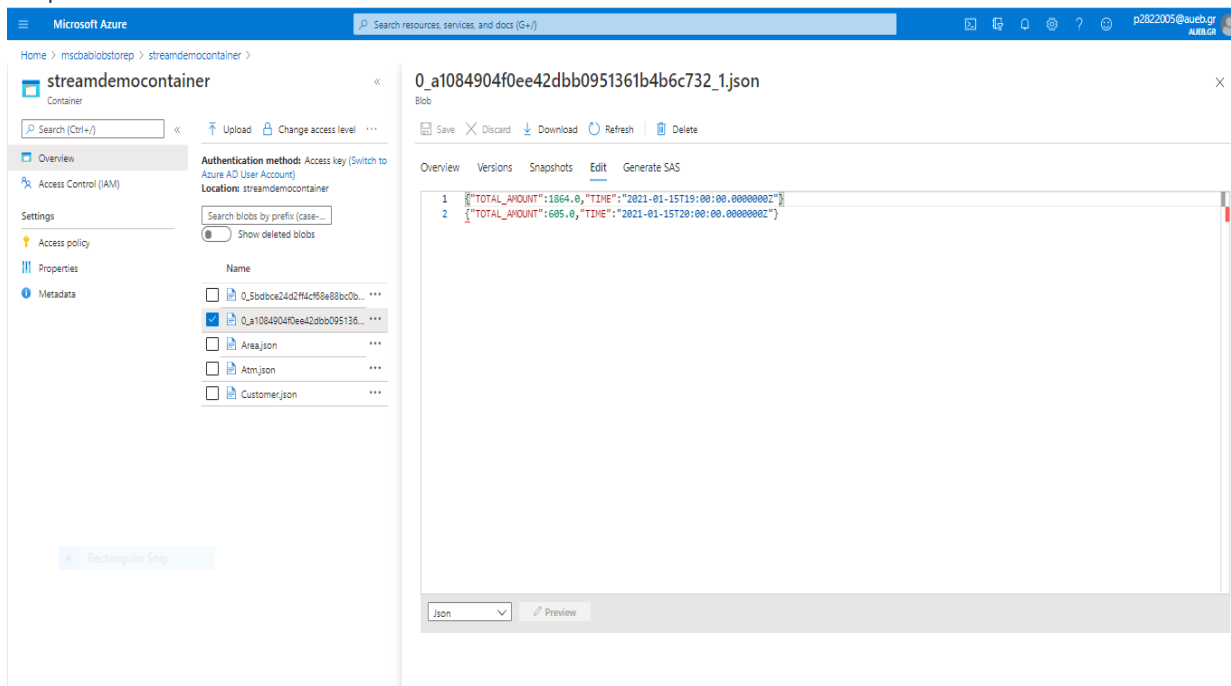
2. SHOW THE TOTAL “AMOUNT” OF “TYPE = 1” TRANSACTIONS AT “ATM CODE = 21” OF THE LAST HOUR. REPEAT ONCE EVERY HOUR (USE A TUMBLING WINDOW).

```
SELECT SUM(Amount) as TOTAL_AMOUNT, System.Timestamp AS TIME
INTO [output]
FROM [input]
TIMESTAMP BY EventEnqueuedUtcTime
GROUP BY Type, ATMCode, TumblingWindow(hour,1)
HAVING Type=1 AND ATMCode=21
```

Input



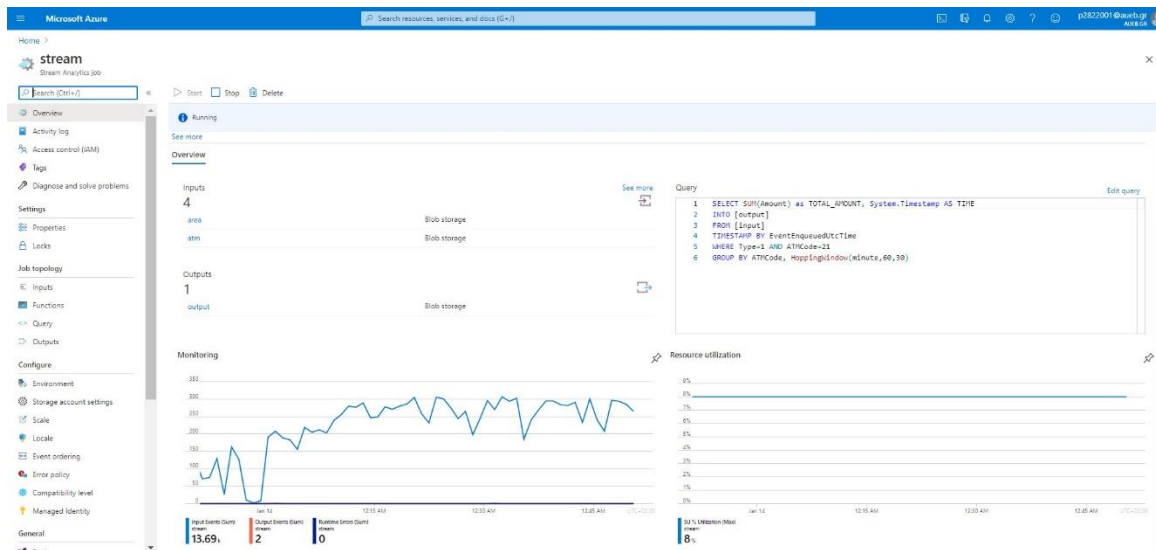
Output



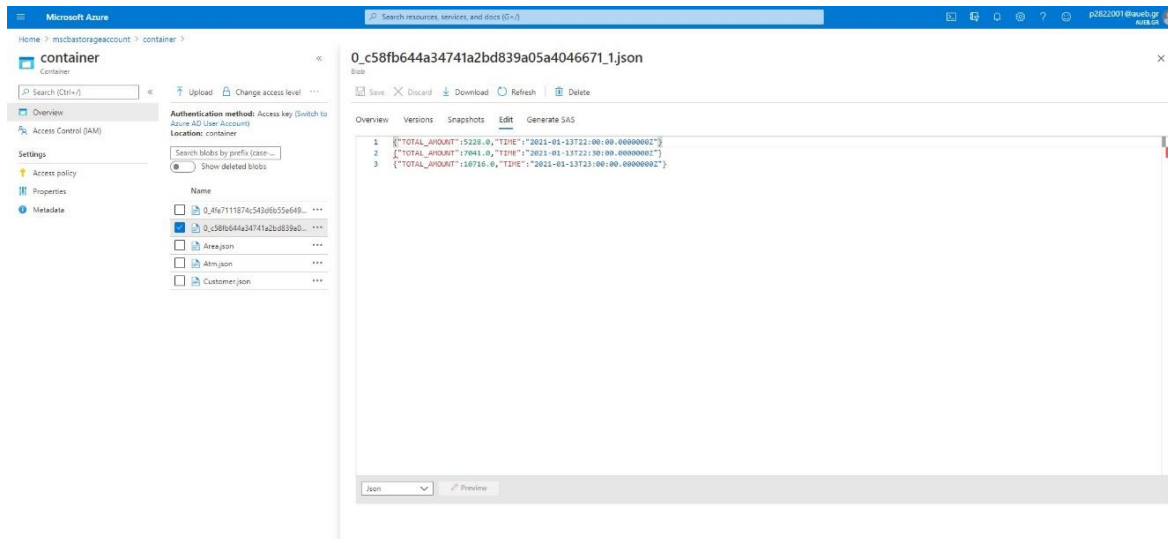
3. SHOW THE TOTAL “AMOUNT” OF “TYPE = 1” TRANSACTIONS AT “ATM CODE = 21” OF THE LAST HOUR. REPEAT ONCE EVERY 30 MINUTES (USE A HOPPING WINDOW).

```
SELECT SUM(Amount) as TOTAL_AMOUNT, System.Timestamp AS TIME
INTO [output]
FROM [input]
TIMESTAMP BY EventEnqueuedUtcTime
WHERE Type=1 AND ATMCode=21
GROUP BY ATMCode, HoppingWindow(minute, 60, 30)
```

Input

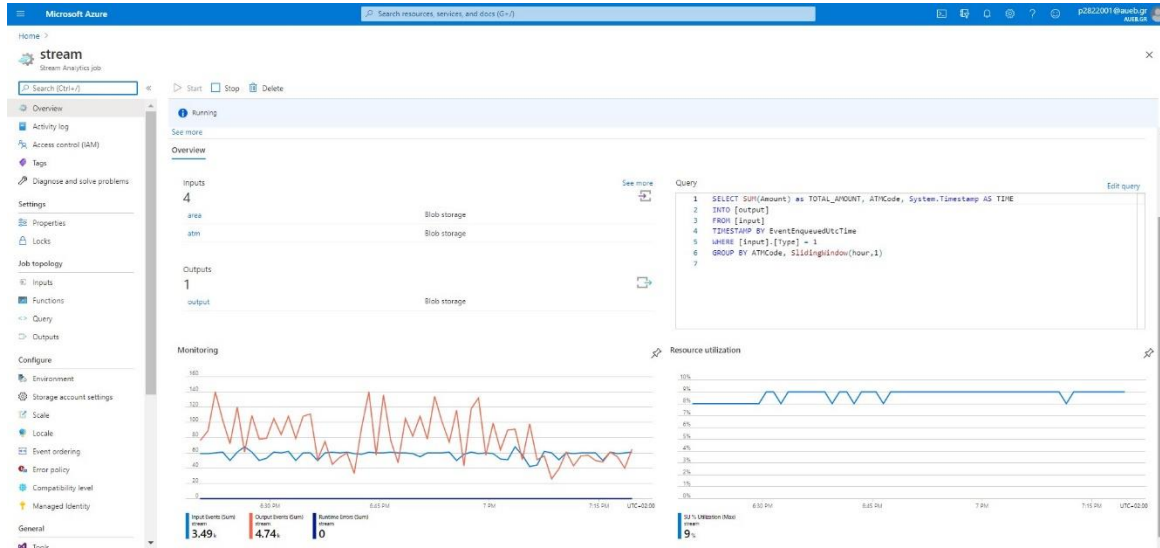


Output

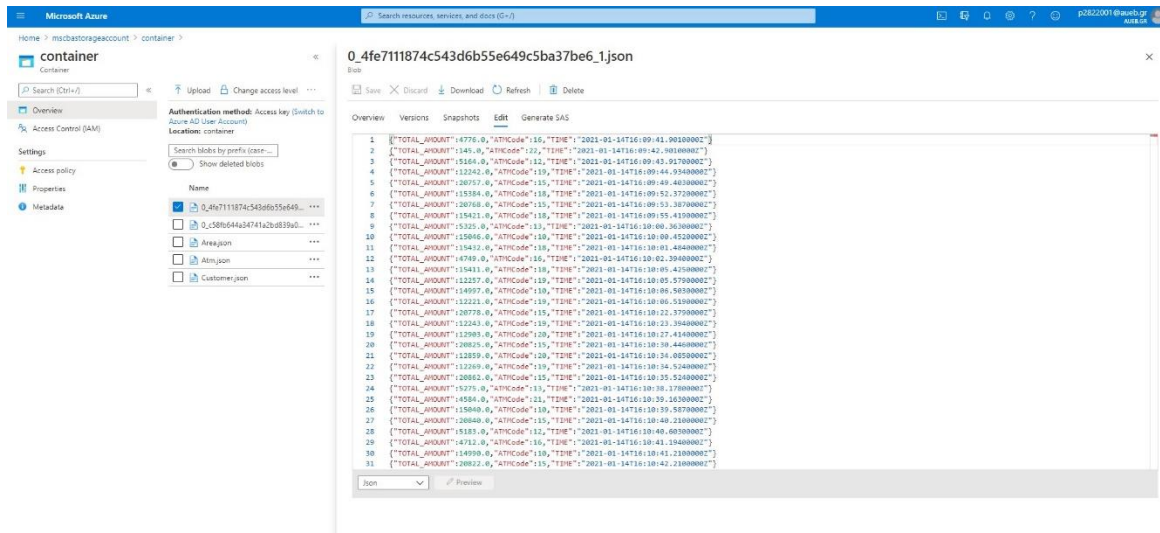


4. SHOW THE TOTAL “AMOUNT” OF “TYPE = 1” TRANSACTIONS PER “ATM CODE” OF THE LAST ONE HOUR (USE A SLIDING WINDOW).

```
SELECT SUM(Amount) as TOTAL_AMOUNT, ATMCode, System.Timestamp AS TIME
INTO [output]
FROM [input]
TIMESTAMP BY EventEnqueuedUtcTime
WHERE Type = 1
GROUP BY ATMCode, SlidingWindow(minute,60)
Input
```



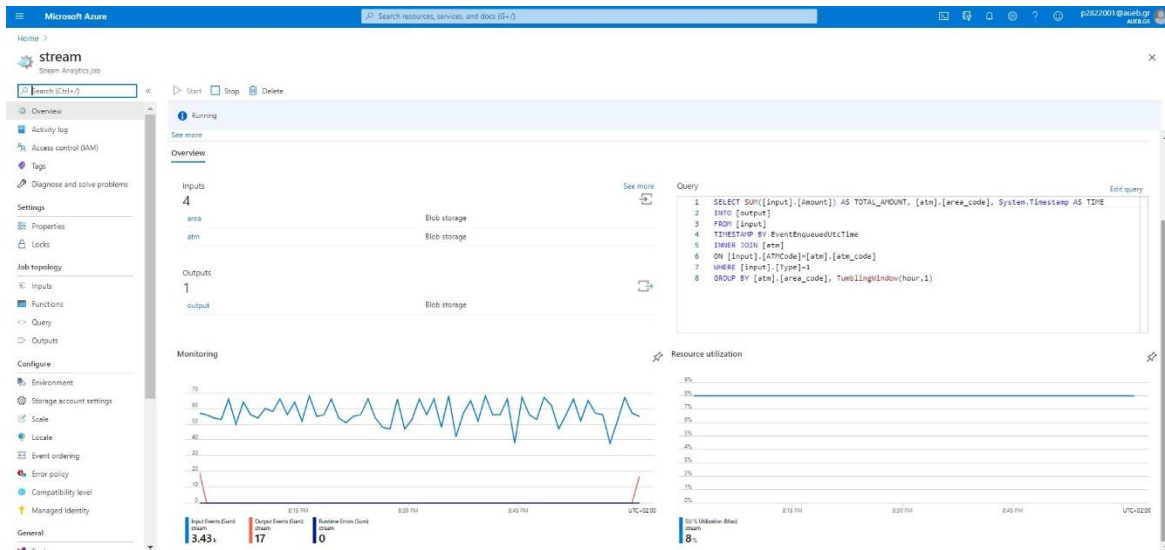
Output



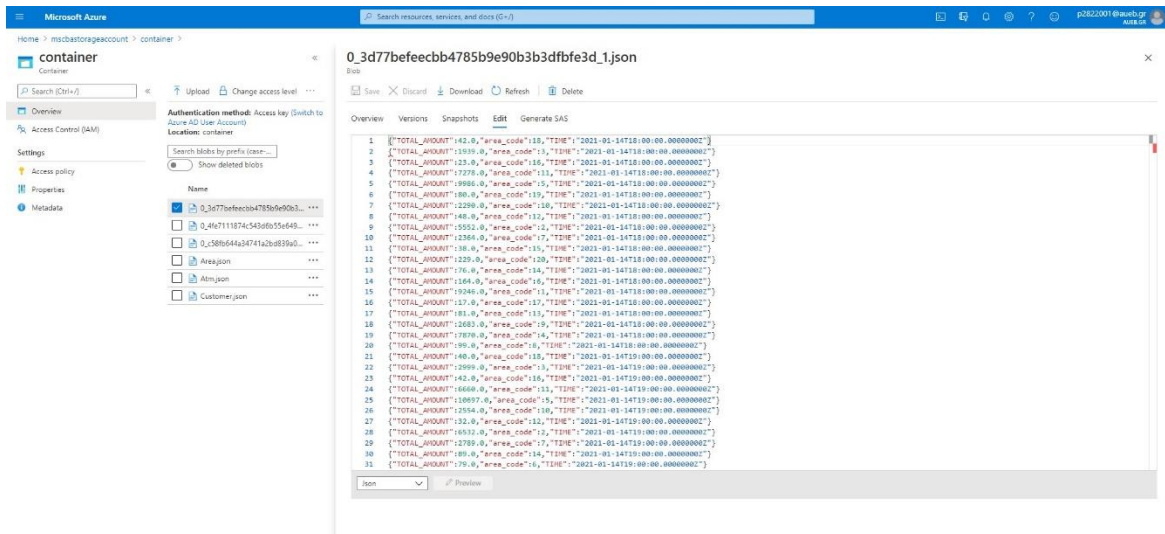
5. SHOW THE TOTAL “AMOUNT” OF “TYPE = 1” TRANSACTIONS PER “AREA CODE” OF THE LAST HOUR.
REPEAT ONCE EVERY HOUR (USE A TUMBLING WINDOW).

```
SELECT SUM([input].[Amount]) AS TOTAL_AMOUNT, [atm].[area_code], System.Timestamp
AS TIME
INTO [output]
FROM [input]
TIMESTAMP BY EventEnqueuedUtcTime
INNER JOIN [atm]
ON [input].[ATMCode]=[atm].[atm_code]
WHERE [input].[Type]=1
GROUP BY [atm].[area_code], TumblingWindow(hour,1)
```

Input



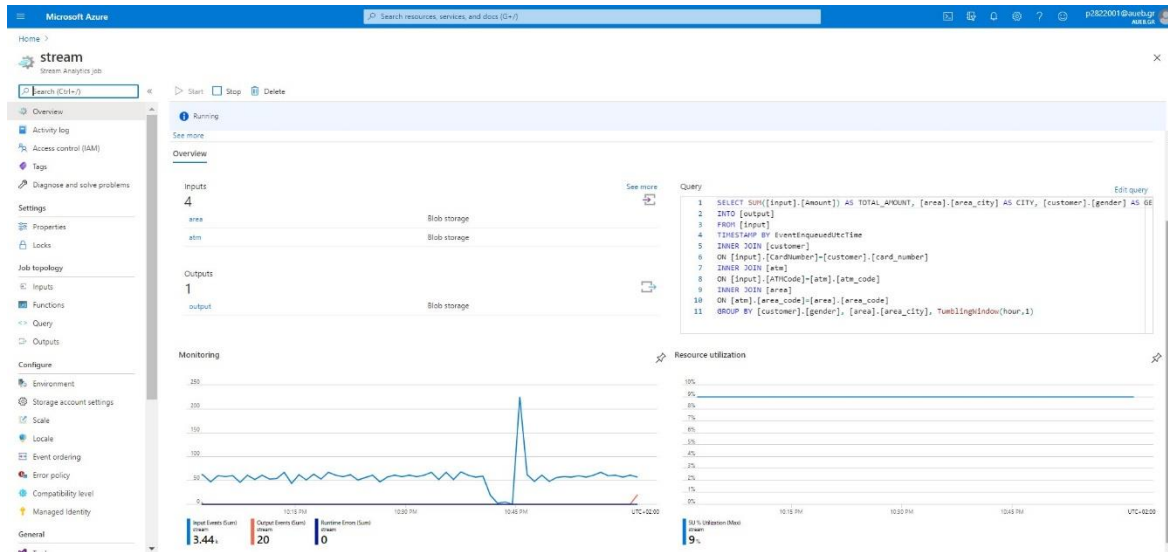
Output



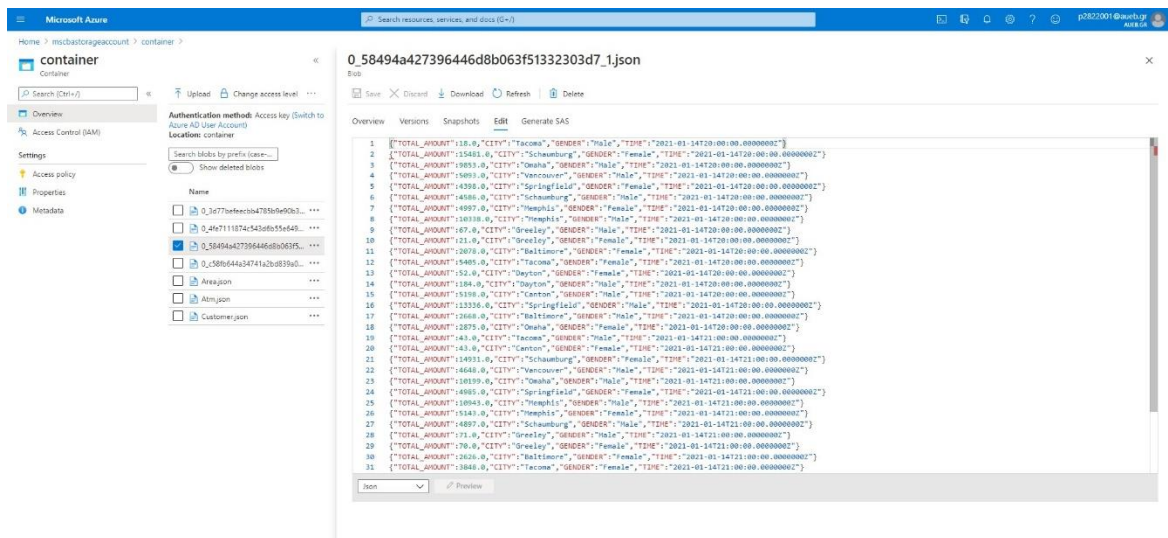
6. SHOW THE TOTAL “AMOUNT” PER ATM’S “CITY” AND CUSTOMER’S “GENDER” OF THE LAST HOUR. REPEAT ONCE EVERY HOUR (USE A TUMBLING WINDOW).

```
SELECT SUM([input].[Amount]) AS TOTAL_AMOUNT, [area].[area_city] AS CITY,
[customer].[gender] AS GENDER, System.Timestamp AS TIME
INTO [output]
FROM [input]
TIMESTAMP BY EventEnqueuedUtcTime
INNER JOIN [customer]
ON [input].[CardNumber]=[customer].[card_number]
INNER JOIN [atm]
ON [input].[ATMCode]=[atm].[atm_code]
INNER JOIN [area]
ON [atm].[area_code]=[area].[area_code]
GROUP BY [customer].[gender], [area].[area_city], TumblingWindow(hour,1)
```

Input



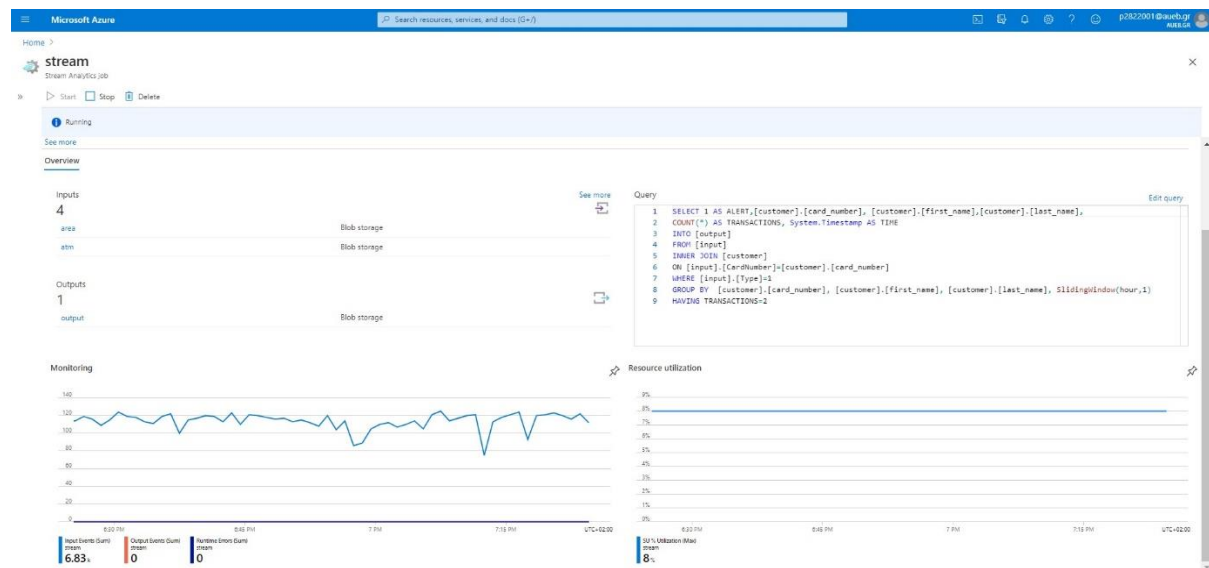
Output



7. ALERT (DO A SIMPLE SELECT "1") IF A CUSTOMER HAS PERFORMED TWO TRANSACTIONS OF "TYPE = 1" IN A WINDOW OF AN HOUR (USE A SLIDING WINDOW).

```
SELECT 1 AS ALERT,[customer].[card_number],
[customer].[first_name],[customer].[last_name], COUNT(*) AS TRANSACTIONS,
System.Timestamp AS TIME
INTO [output]
FROM [input]
INNER JOIN [customer]
ON [input].[CardNumber]=[customer].[card_number]
WHERE [input].[Type]=1
GROUP BY [customer].[card_number], [customer].[first_name],
[customer].[last_name],SlidingWindow(hour,1)
HAVING TRANSACTIONS=2
```

Input



Output

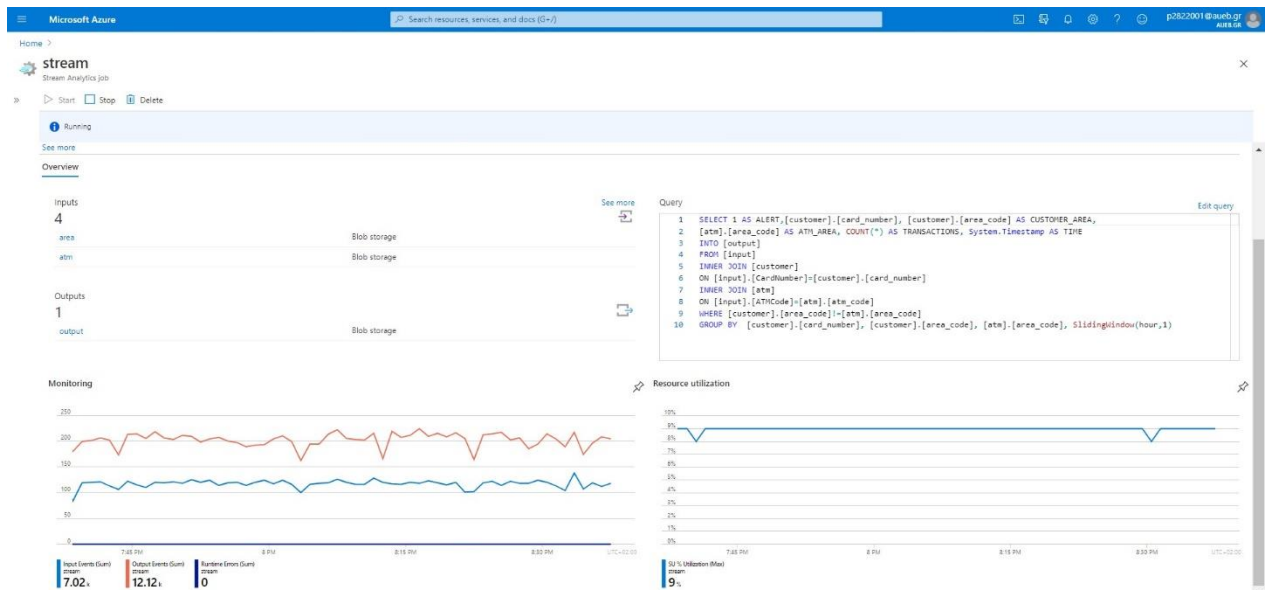
The screenshot shows the Microsoft Azure portal with a container named '0_524995d0a7db4aeb26e043a6930994.1.json'. The container contains a file named '0_524995d0a7db4aeb26e043a6930994.1.json'. The file content is a JSON array of alert records, each containing customer information and transaction details.

Alert ID	Card Number	First Name	Last Name	Transaction ID	Time
1	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:22.6020000Z
2	462867914537759	Felity	Perry	TRANSACTIONS12	2021-01-15T16:14:25.4620000Z
3	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:29.7750000Z
4	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:46.9140000Z
5	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
6	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
7	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
8	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
9	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
10	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
11	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
12	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
13	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
14	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
15	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
16	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
17	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
18	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
19	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
20	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
21	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
22	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
23	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
24	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
25	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
26	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
27	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
28	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
29	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
30	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
31	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z
32	3848789882393	Kathy	Jordan	TRANSACTIONS12	2021-01-15T16:14:57.0420000Z

8. ALERT (DO A SIMPLE SELECT "1") IF THE "AREA CODE" OF THE ATM OF THE TRANSACTION IS NOT THE SAME AS THE "AREA CODE" OF THE "CARD NUMBER" (CUSTOMER'S AREA CODE) - (USE A SLIDING WINDOW)

```
SELECT 1 AS ALERT, [customer].[card_number], [customer].[area_code] AS
CUSTOMER_AREA, [atm].[area_code] AS ATM_AREA, COUNT(*) AS TRANSACTIONS,
System.Timestamp AS TIME
INTO [output]
FROM [input]
INNER JOIN [customer]
ON [input].[CardNumber]=[customer].[card_number]
INNER JOIN [atm]
ON [input].[ATMCode]=[atm].[atm_code]
WHERE [customer].[area_code] != [atm].[area_code]
GROUP BY [customer].[card_number], [customer].[area_code], [atm].[area_code],
SlidingWindow(hour,1)
```

Input



Output

Microsoft Azure

Home > mscbastorageaccount > container >

container

Container

Search (Ctrl+F)

Upload Change access level

Overview

Access Control (IAM)

Settings

Access policy

Properties

Metadata

Authentication method: Access key (Switch to Azure AD User Account)

Location: container

Search blobs by prefix (case-insensitive)

Show deleted blobs

Name

- ☒ 0_2f250244886f4907934496ef3f76e03a_1.json
- ☐ 0_3d77bfeecb4785b9d9b3...
- ☐ 0_4fe711874c543a8b55e648...
- ☐ 0_524995d0a7db44e4db26a04...
- ☐ 0_58484a4273964468b0635...
- ☐ 0_5f8b64434741a2b0839a...
- ☐ Area.json
- ☐ Atm.json
- ☐ Customer.json

0_2f250244886f4907934496ef3f76e03a_1.json

Blob

Save Discard Download Refresh Delete

Overview Versions Snapshots Edit Generate SAS

```
1 [{"ALERT":1,"card_number":1509321226732480800,"CUSTOMER_AREA":10,"ATH_AREA":9,"TRANSACTIONS":344,"TIME":"2021-01-15T17:34:31.5540000Z"}]
2 [{"ALERT":1,"card_number":3549670931669297,"CUSTOMER_AREA":4,"ATH_AREA":3,"TRANSACTIONS":345,"TIME":"2021-01-15T17:34:31.5540000Z"}]
3 [{"ALERT":1,"card_number":12026340081435467,"CUSTOMER_AREA":9,"ATH_AREA":9,"TRANSACTIONS":321,"TIME":"2021-01-15T17:34:32.1170000Z"}]
4 [{"ALERT":1,"card_number":5602246795688900,"CUSTOMER_AREA":11,"ATH_AREA":2,"TRANSACTIONS":155,"TIME":"2021-01-15T17:34:32.1490000Z"}]
5 [{"ALERT":1,"card_number":3549670931669297,"CUSTOMER_AREA":4,"ATH_AREA":3,"TRANSACTIONS":346,"TIME":"2021-01-15T17:34:32.5300000Z"}]
6 [{"ALERT":1,"card_number":3549670931669297,"CUSTOMER_AREA":4,"ATH_AREA":3,"TRANSACTIONS":347,"TIME":"2021-01-15T17:34:32.5690000Z"}]
7 [{"ALERT":1,"card_number":3542024097623740,"CUSTOMER_AREA":9,"ATH_AREA":9,"TRANSACTIONS":347,"TIME":"2021-01-15T17:34:32.9770000Z"}]
8 [{"ALERT":1,"card_number":5602238863817460,"CUSTOMER_AREA":2,"ATH_AREA":4,"TRANSACTIONS":346,"TIME":"2021-01-15T17:34:32.9920000Z"}]
9 [{"ALERT":1,"card_number":12026340081435467,"CUSTOMER_AREA":9,"ATH_AREA":9,"TRANSACTIONS":322,"TIME":"2021-01-15T17:34:33.0700000Z"}]
10 [{"ALERT":1,"card_number":353576653797004,"CUSTOMER_AREA":11,"ATH_AREA":2,"TRANSACTIONS":145,"TIME":"2021-01-15T17:34:33.6010000Z"}]
11 [{"ALERT":1,"card_number":604513436397576,"CUSTOMER_AREA":2,"ATH_AREA":4,"TRANSACTIONS":338,"TIME":"2021-01-15T17:34:33.9920000Z"}]
12 [{"ALERT":1,"card_number":3542024097623740,"CUSTOMER_AREA":9,"ATH_AREA":9,"TRANSACTIONS":346,"TIME":"2021-01-15T17:34:34.0090000Z"}]
13 [{"ALERT":1,"card_number":54402218701593272,"CUSTOMER_AREA":8,"ATH_AREA":11,"TRANSACTIONS":350,"TIME":"2021-01-15T17:34:34.5700000Z"}]
14 [{"ALERT":1,"card_number":4026567534157759,"CUSTOMER_AREA":8,"ATH_AREA":11,"TRANSACTIONS":387,"TIME":"2021-01-15T17:34:34.5860000Z"}]
15 [{"ALERT":1,"card_number":5200253312538103,"CUSTOMER_AREA":11,"ATH_AREA":2,"TRANSACTIONS":137,"TIME":"2021-01-15T17:34:35.0080000Z"}]
16 [{"ALERT":1,"card_number":3501257234000023,"CUSTOMER_AREA":13,"ATH_AREA":9,"TRANSACTIONS":342,"TIME":"2021-01-15T17:34:35.5700000Z"}]
17 [{"ALERT":1,"card_number":3549670931669297,"CUSTOMER_AREA":4,"ATH_AREA":3,"TRANSACTIONS":340,"TIME":"2021-01-15T17:34:35.6010000Z"}]
18 [{"ALERT":1,"card_number":3534633361736454,"CUSTOMER_AREA":9,"ATH_AREA":9,"TRANSACTIONS":316,"TIME":"2021-01-15T17:34:36.0390000Z"}]
19 [{"ALERT":1,"card_number":5200253312538103,"CUSTOMER_AREA":11,"ATH_AREA":2,"TRANSACTIONS":130,"TIME":"2021-01-15T17:34:36.5700000Z"}]
20 [{"ALERT":1,"card_number":54402218701593272,"CUSTOMER_AREA":8,"ATH_AREA":11,"TRANSACTIONS":351,"TIME":"2021-01-15T17:34:36.6010000Z"}]
21 [{"ALERT":1,"card_number":3549670931669297,"CUSTOMER_AREA":4,"ATH_AREA":3,"TRANSACTIONS":347,"TIME":"2021-01-15T17:34:37.0240000Z"}]
22 [{"ALERT":1,"card_number":54402218701593272,"CUSTOMER_AREA":8,"ATH_AREA":11,"TRANSACTIONS":351,"TIME":"2021-01-15T17:34:37.5860000Z"}]
23 [{"ALERT":1,"card_number":56022217915598080,"CUSTOMER_AREA":8,"ATH_AREA":10,"TRANSACTIONS":151,"TIME":"2021-01-15T17:34:37.6010000Z"}]
24 [{"ALERT":1,"card_number":5200253312538103,"CUSTOMER_AREA":11,"ATH_AREA":2,"TRANSACTIONS":137,"TIME":"2021-01-15T17:34:38.0240000Z"}]
25 [{"ALERT":1,"card_number":56022217915598080,"CUSTOMER_AREA":8,"ATH_AREA":10,"TRANSACTIONS":134,"TIME":"2021-01-15T17:34:38.0400000Z"}]
26 [{"ALERT":1,"card_number":3534633361736454,"CUSTOMER_AREA":9,"ATH_AREA":9,"TRANSACTIONS":317,"TIME":"2021-01-15T17:34:38.6010000Z"}]
27 [{"ALERT":1,"card_number":3549670931669297,"CUSTOMER_AREA":4,"ATH_AREA":3,"TRANSACTIONS":348,"TIME":"2021-01-15T17:34:38.6170000Z"}]
28 [{"ALERT":1,"card_number":4026567534157759,"CUSTOMER_AREA":8,"ATH_AREA":11,"TRANSACTIONS":386,"TIME":"2021-01-15T17:34:39.0400000Z"}]
29 [{"ALERT":1,"card_number":30487898026193,"CUSTOMER_AREA":7,"ATH_AREA":5,"TRANSACTIONS":136,"TIME":"2021-01-15T17:34:39.0500000Z"}]
30 [{"ALERT":1,"card_number":5200253312538103,"CUSTOMER_AREA":11,"ATH_AREA":2,"TRANSACTIONS":130,"TIME":"2021-01-15T17:34:39.6480000Z"}]
31 [{"ALERT":1,"card_number":5200253312538103,"CUSTOMER_AREA":11,"ATH_AREA":2,"TRANSACTIONS":130,"TIME":"2021-01-15T17:34:39.6480000Z"}]
```

Icon Preview