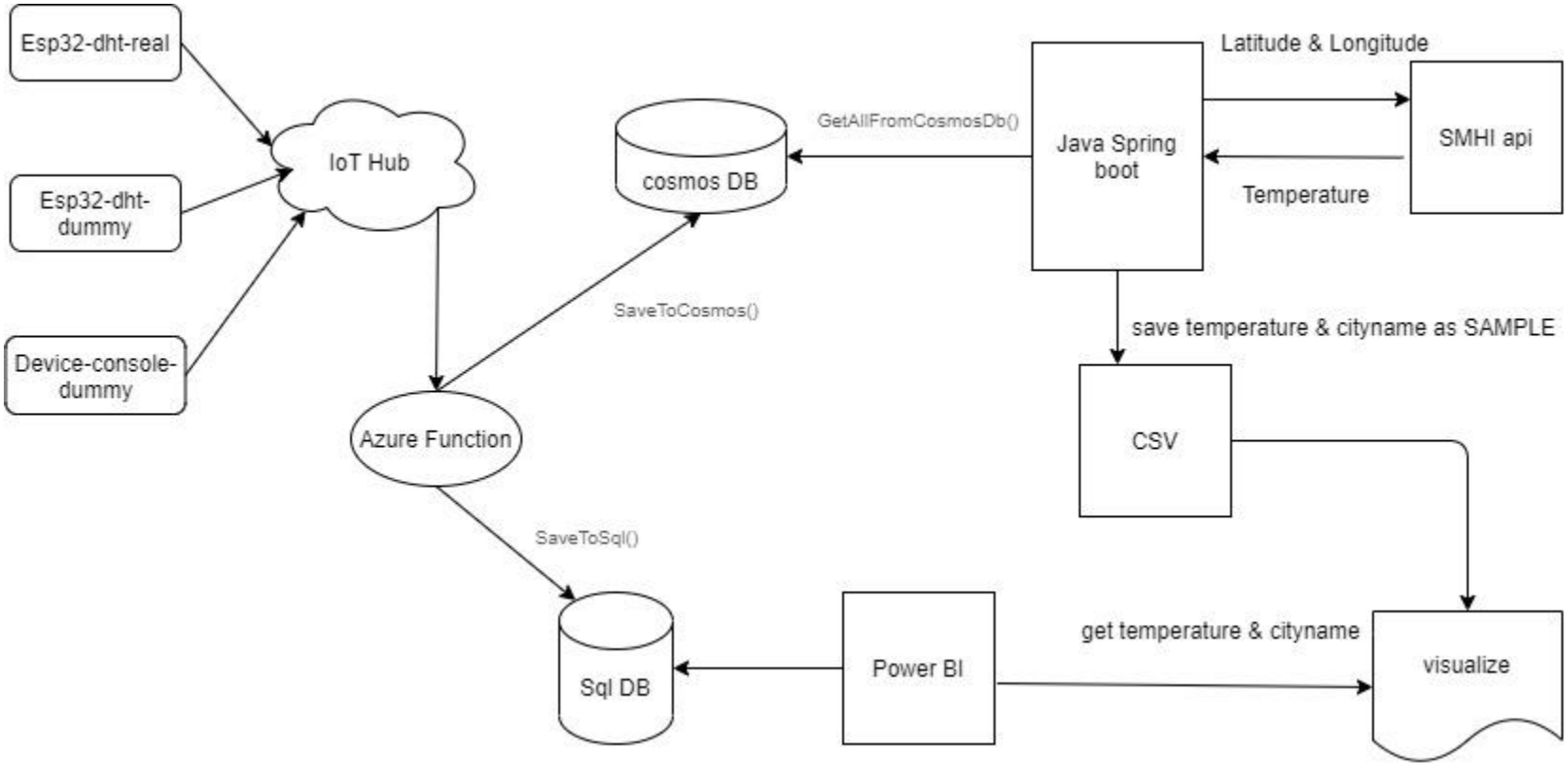
# Inlämnings uppgift 2 VG nivå

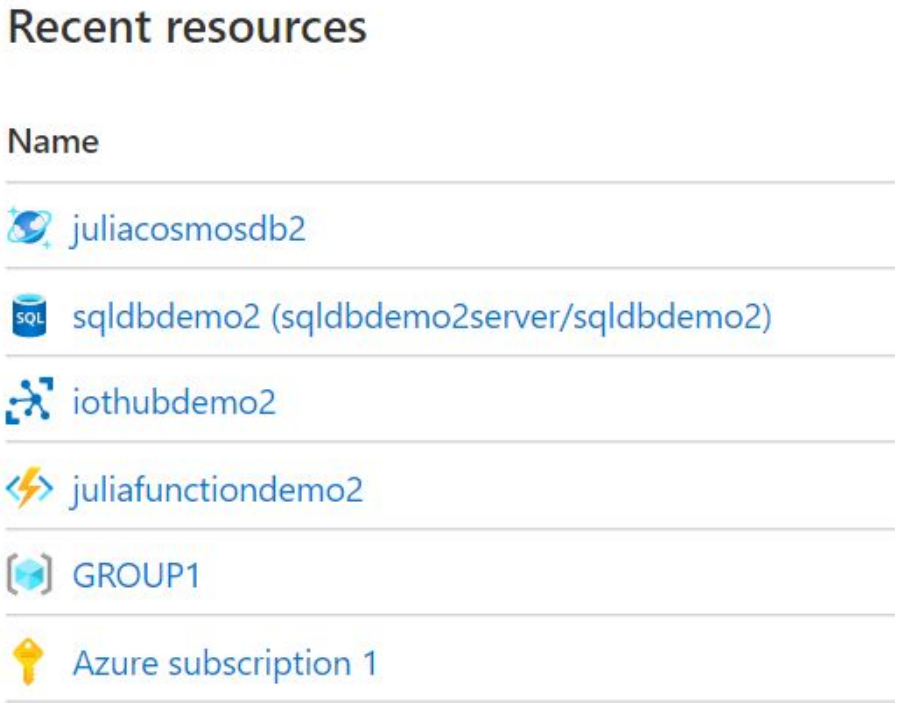
Julia Gu

# Mitt VG projekt tank



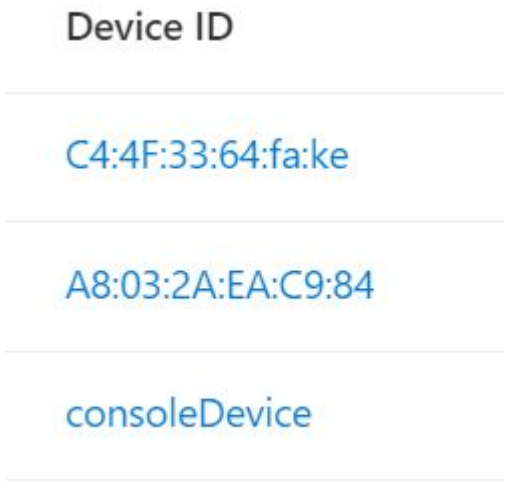
# Azure konto

- skapa Azure konto - pay as you go
- skapa IoT hub
- skapa sql DB
- skapa Azure function
- skapa Cosmos DB



# Arduino sketch / Visual Studio 2019 -- C++/C#

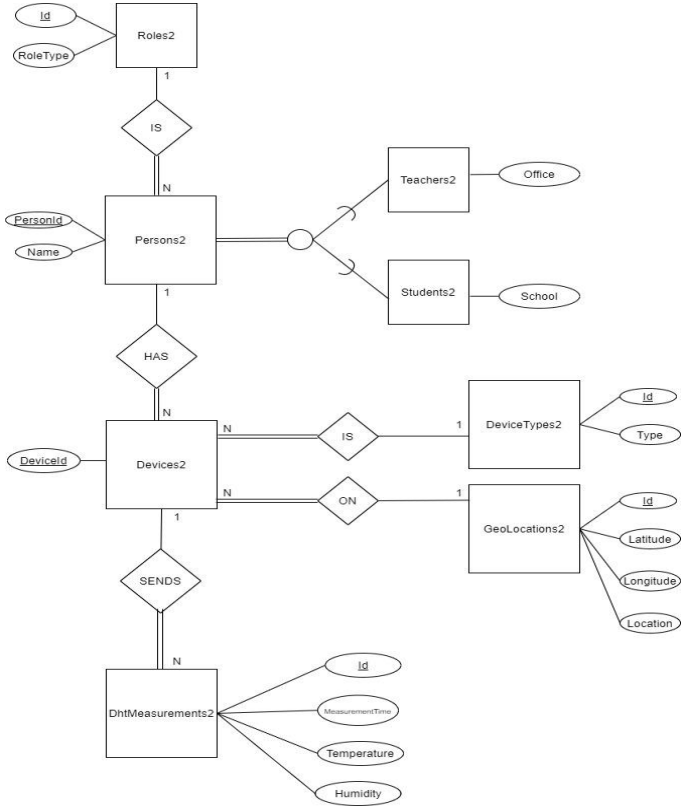
- använda en device esp32 som skicka riktig dht data till IoT Hub
- använda en annan device esp32 som skicka dummy dht data till IoT Hub
- skriva kod direkt i visual studio att skicka dummy dht data till IoT Hub
- git ignore securities.h
- kör sketch så att IoT Hub kan få DHT meddelande från tre device

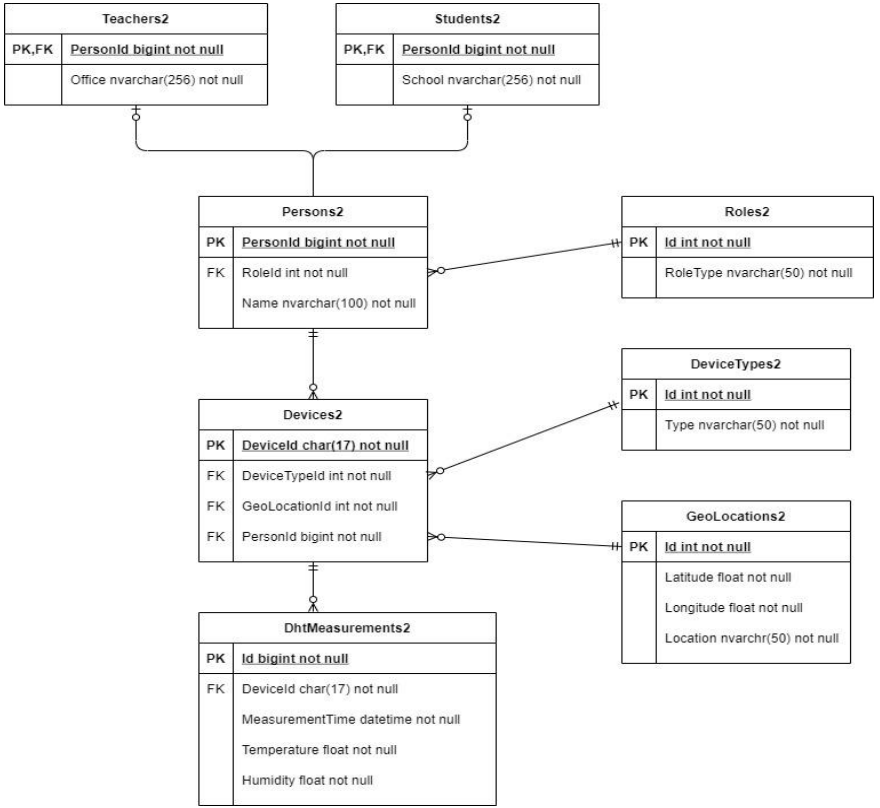


# Microsoft Sql Server Management -- SQL

- skriva SQL på Microsoft Sql Server Management så att skapa relation databas
- kör och testa

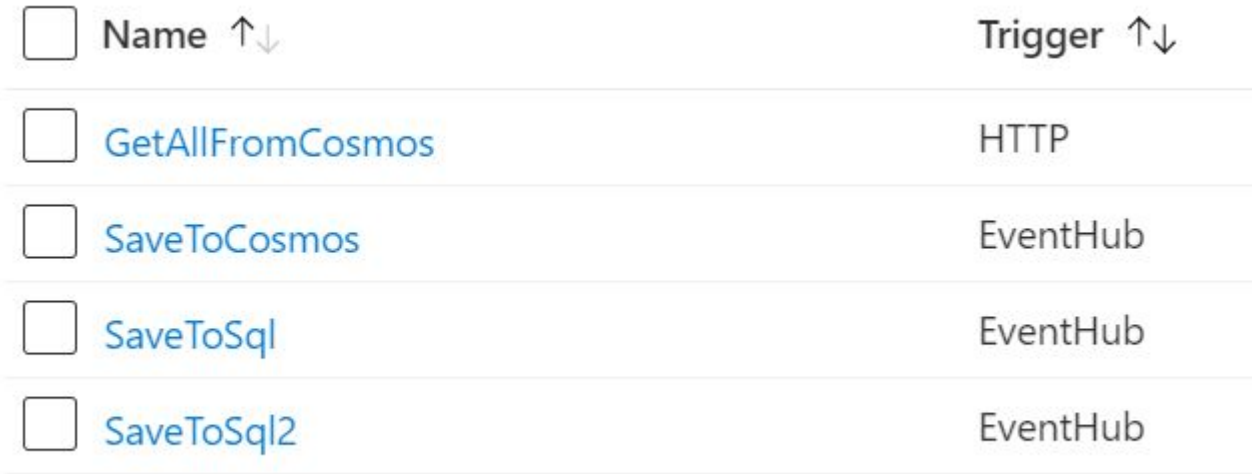
# ER_DIAGRAM & ER_MODEL

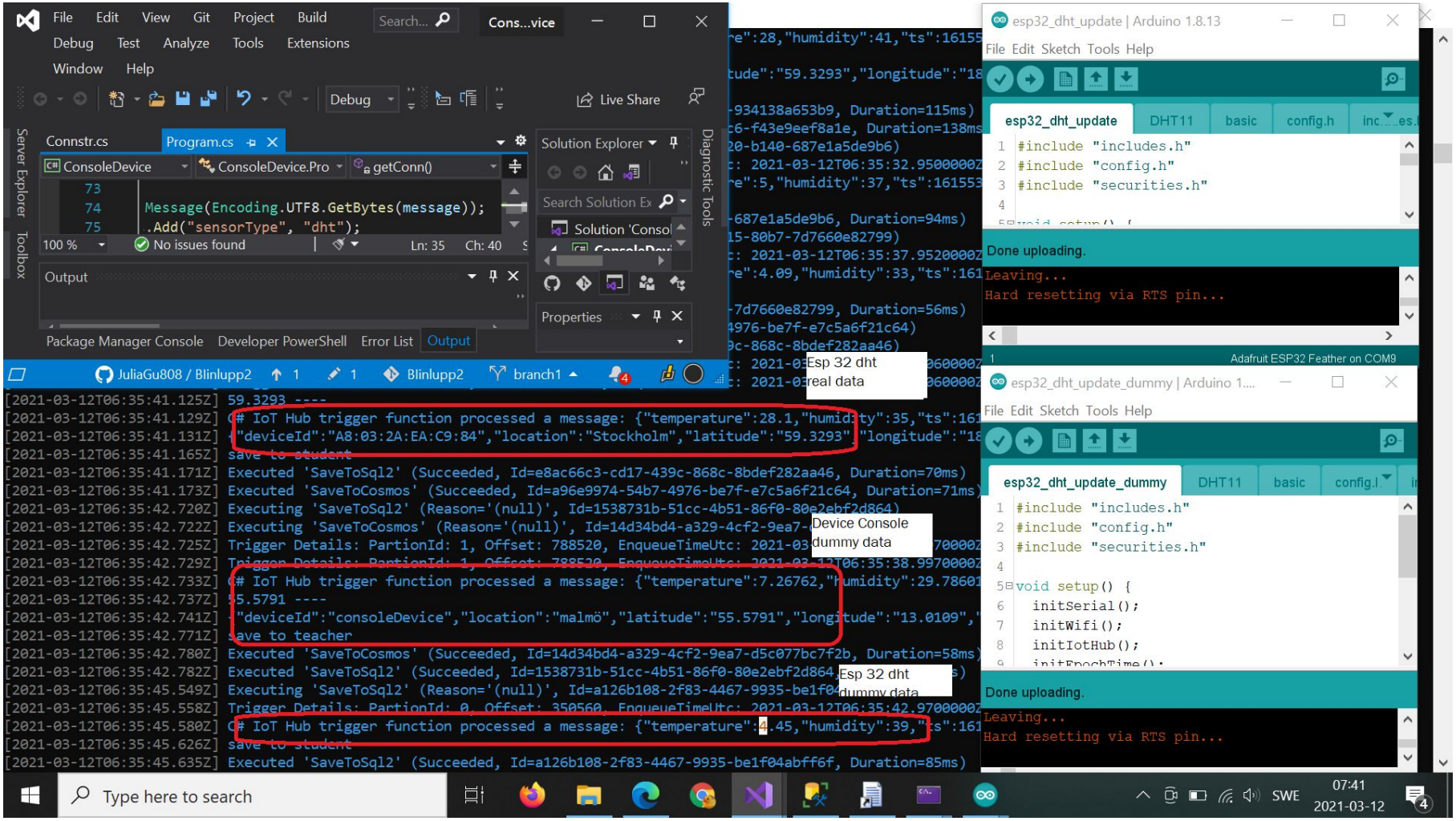


# Visual Studio 2019 --  C#

- skapa Azure function -> lokal kör success -> publicera till Azure -> Azure auto

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Program.cs
ConsoleDevice
ConsoleDevice.Pro
getConn()
73
74 Message(Encoding.UTF8.GetBytes(message));
75 .Add("sensorType", "dht");
100 %
No issues found
Ln: 35 Ch: 40
Output
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Developer PowerShell
Error List
Output
JuliaGu808 / Blinlupp2
Blinlupp2
branch1
Esp 32 dht
real data
[2021-03-12T06:35:41.125Z] 59.3293 ----
[2021-03-12T06:35:41.129Z] # IoT Hub trigger function processed a message: {"temperature":28.1,"humidity":35,"ts":16
[2021-03-12T06:35:41.131Z] "deviceId":"A8:03:2A:EA:C9:84","location":"Stockholm","latitude":"59.3293","longitude":"18
[2021-03-12T06:35:41.165Z] save to student
[2021-03-12T06:35:41.171Z] Executed 'SaveToSql2' (Succeeded, Id=e8ac66c3-cd17-439c-868c-8bdef282aa46, Duration=70ms)
[2021-03-12T06:35:41.173Z] Executed 'SaveToCosmos' (Succeeded, Id=a96e9974-54b7-4976-be7f-e7c5a6f21c64, Duration=71ms)
[2021-03-12T06:35:42.720Z] Executing 'SaveToSql2' (Reason='(null)', Id=1538731b-51cc-4b51-86f0-80e2ebf2d864)
[2021-03-12T06:35:42.722Z] Executing 'SaveToCosmos' (Reason='(null)', Id=14d34bd4-a329-4cf2-9ea7-
[2021-03-12T06:35:42.725Z] Trigger Details: PartitionId: 1, Offset: 788520, EnqueueTimeUtc: 2021-03
Device Console
dummy data
[2021-03-12T06:35:42.729Z] Trigger Details: PartitionId: 1, Offset: 788520, EnqueueTimeUtc: 2021-03-12T06:35:38.9970000Z
[2021-03-12T06:35:42.733Z] # IoT Hub trigger function processed a message: {"temperature":7.26762,"humidity":29.7860
[2021-03-12T06:35:42.737Z] 55.5791 ----
[2021-03-12T06:35:42.741Z] "deviceId":"consoleDevice","location":"malmö","latitude":"55.5791","longitude":"13.0109",
[2021-03-12T06:35:42.771Z] save to teacher
[2021-03-12T06:35:42.780Z] Executed 'SaveToCosmos' (Succeeded, Id=14d34bd4-a329-4cf2-9ea7-d5c077bc7f2b, Duration=58ms)
[2021-03-12T06:35:42.782Z] Executed 'SaveToSql2' (Succeeded, Id=1538731b-51cc-4b51-86f0-80e2ebf2d864
Esp 32 dht
dummy data
[2021-03-12T06:35:45.549Z] Executing 'SaveToSql2' (Reason='(null)', Id=a126b108-2f83-4467-9935-be1f04
[2021-03-12T06:35:45.558Z] Trigger Details: PartitionId: 0, Offset: 350560, EnqueueTimeUtc: 2021-03-12T06:35:42.9700000Z
[2021-03-12T06:35:45.580Z] # IoT Hub trigger function processed a message: {"temperature":4.45,"humidity":39,"ts":161
[2021-03-12T06:35:45.626Z] save to student
[2021-03-12T06:35:45.635Z] Executed 'SaveToSql2' (Succeeded, Id=a126b108-2f83-4467-9935-be1f04abff6f, Duration=85ms)
esp32_dht_update | Arduino 1.8.13
File Edit Sketch Tools Help
esp32_dht_update
DHT11
basic
config.h
#include "includes.h"
#include "config.h"
#include "securities.h"
Done uploading.
Leaving...
Hard resetting via RTS pin...
Adafruit ESP32 Feather on COM9
esp32_dht_update_dummy | Arduino 1....
File Edit Sketch Tools Help
esp32_dht_update_dummy
DHT11
basic
config.h
#include "includes.h"
#include "config.h"
#include "securities.h"
void setup() {
initSerial();
initWifi();
initIotHub();
Done uploading.
Leaving...
Hard resetting via RTS pin...
Type here to search
SWE
07:41
2021-03-12

# Intellij -- Java Spring boot

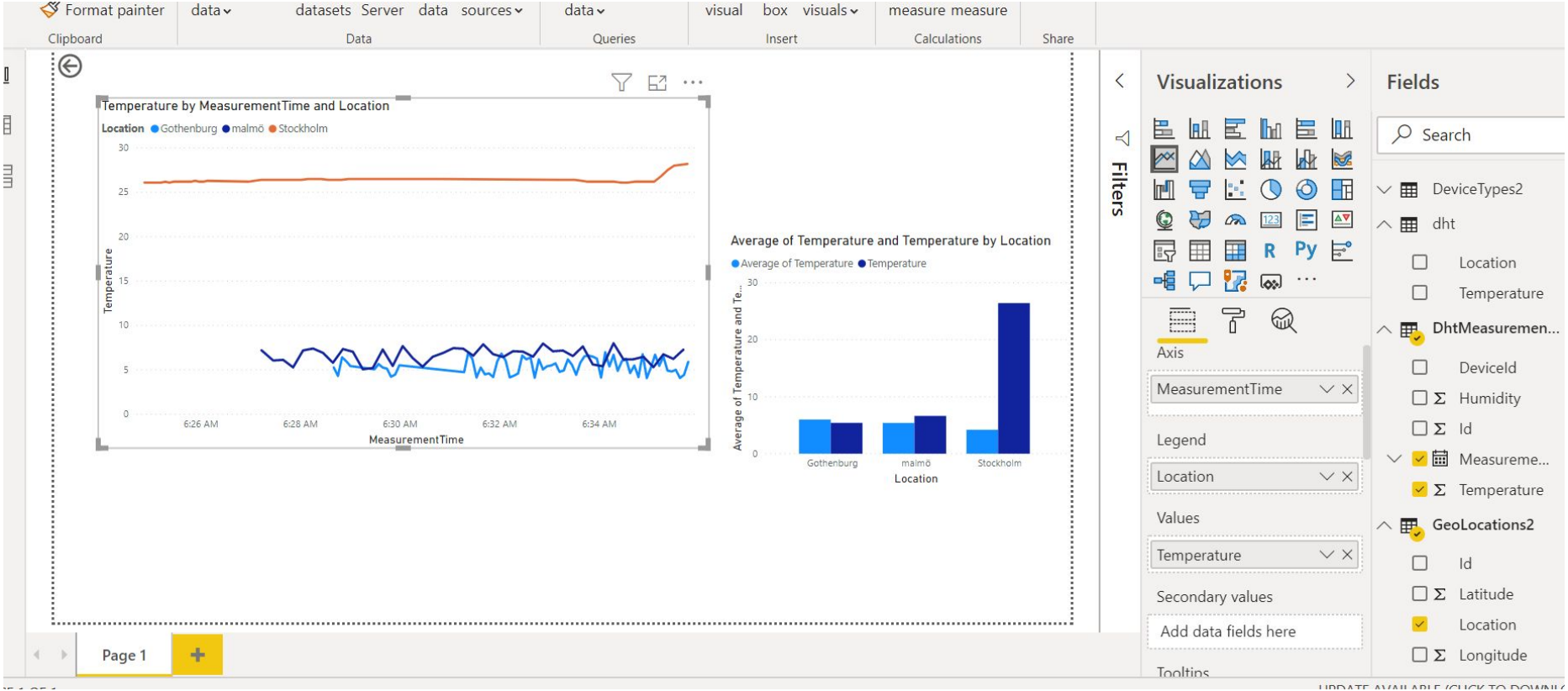
- Skriva metod att använda RESTful och anropa GetAllFromCosmos() api
- Rensa data med hjälp av JsonObject.
- Skicka result datas latitude och longitude till openApi SMHI att få riktig temperature värde
- Spara stad och varsin temperature lokal CSV filen

# Power BI -- os

- Visa Azure Sql databas diagram. Visa varsin stads temperature på samman tid linje.

- Importera CSV filen som en sample för att kolla olika stads temperatures matning

- Två dummy data är nästan rätt, men riktig data är fel därför att dht device används innehus, HAHA …. !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Temperature by MeasurementTime and Location
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6:32 AM
6:34 AM
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Page 1

# Sammanfattning

- Det är roligt att man kan bygga många saker ihop
- Databas kan förbättra i fram tiden, ex. som log in funktion
- Azure funktion är jätteviktigt att lära
- Power BI är en jättebra verktyg att visualisering
- Jag behöver förbättra min Java kod. Jag har inte använda det så länge. HA ~~ HA ~~ :)