­Azure stream analytics pics

**1. Data streams and event processing**

In the context of this project, data streams are event data generated by sensors or other sources that can be analyzed by another technology. Analyzing a data stream is typically done to measure the state change of a component or to capture information on an area of interest. The process of consuming data streams, analyzing them and deriving actionable insights out of them is called them Event Processing. It requires an event producer event processor and event consumer.

1. Create azure account

2. Create resource group

Graphical user interface, application

Description automatically generated

3. Create a source storage account and a destination storage account.

Graphical user interface, application

Description automatically generated

4. Under storage resource click on containers under the Data storage panel on the left

5. Add a new Container and give it a name ‘input’.

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated6. After creating container ‘input’, click on storage browser in the left panel and select blob containers. Navigate to the container that you just created ‘input’. We will now create a new folder in this container. Click on Add Directory and give it a name. We will name it in the current date format.

**YYYY-MM-DD**

7. Repeat steps 3 to 5 to create a destination storage account and name it ‘output’.

8. Now we will create a stream analytics job in azure portal that will transfer data from source storage account to destination storage account.

Graphical user interface, application

Description automatically generated9. For hosting environment ensure it is set to Cloud and set streaming units to 1. Click create to create the job.

10. Before proceeding to the next step, visit your source storage account. Select Access Keys under Security + Networking. Click ‘show’ for the key under ‘key1’ and copy this key. This will come handy in the further steps.

11. Once the stream analytics jobs has been deployed, go to the resource. Select Inputs under Job topology. Since it is a new stream analytics job, you should see no inputs. Let’s add a new stream input. Click on add stream input dropdown and select Blob storage/ADLS Gen2.

Graphical user interface, text, application, email

Description automatically generated12. Under Blob storage/ADLS Gen2, enter your desired input alias, the source storage account name that you’d created. Change the authentication mode to connection string. For the storage account key, copy and paste the key that you had copied in step 10. Click Save.

13. Your input should look like this.

Graphical user interface, application

Description automatically generated

14. to create an output account, select ‘Outputs’ under Job Topology on the left panel. Follow instructions 10-12 to arrive at the desired result.

15. Your outputs should look like this

Graphical user interface, text, application, email

Description automatically generated

16. Click on query under job topology. Verify your query by making sure that [output] and [input] matches name that you’ve assigned for your output storage and input storage respectively (steps 13 and 15. Go to the Overview tab and start the job.

Graphical user interface, text, application, email

Description automatically generated

17. Once the job has been successfully started, go to storage accounts > source storage account > containers > input. Here, you’ll see the folder that you’d created with the YYYY-MM-DD naming format. Select the folder and upload **input-01.json**.

18. As the stream analytics job is running, you may go to storage accounts > destination storage account > containers > output. Here you’ll find a new json file that has been generated. On checking the file, we can verify that the contents in both the input and output json files are similar.

**2. Creating a IoT Hub and IoT device simulator**

1. Create iot hub by looking up iot hub.

Graphical user interface, application

Description automatically generated

2. go to devices under device management

3. Click on Add device and

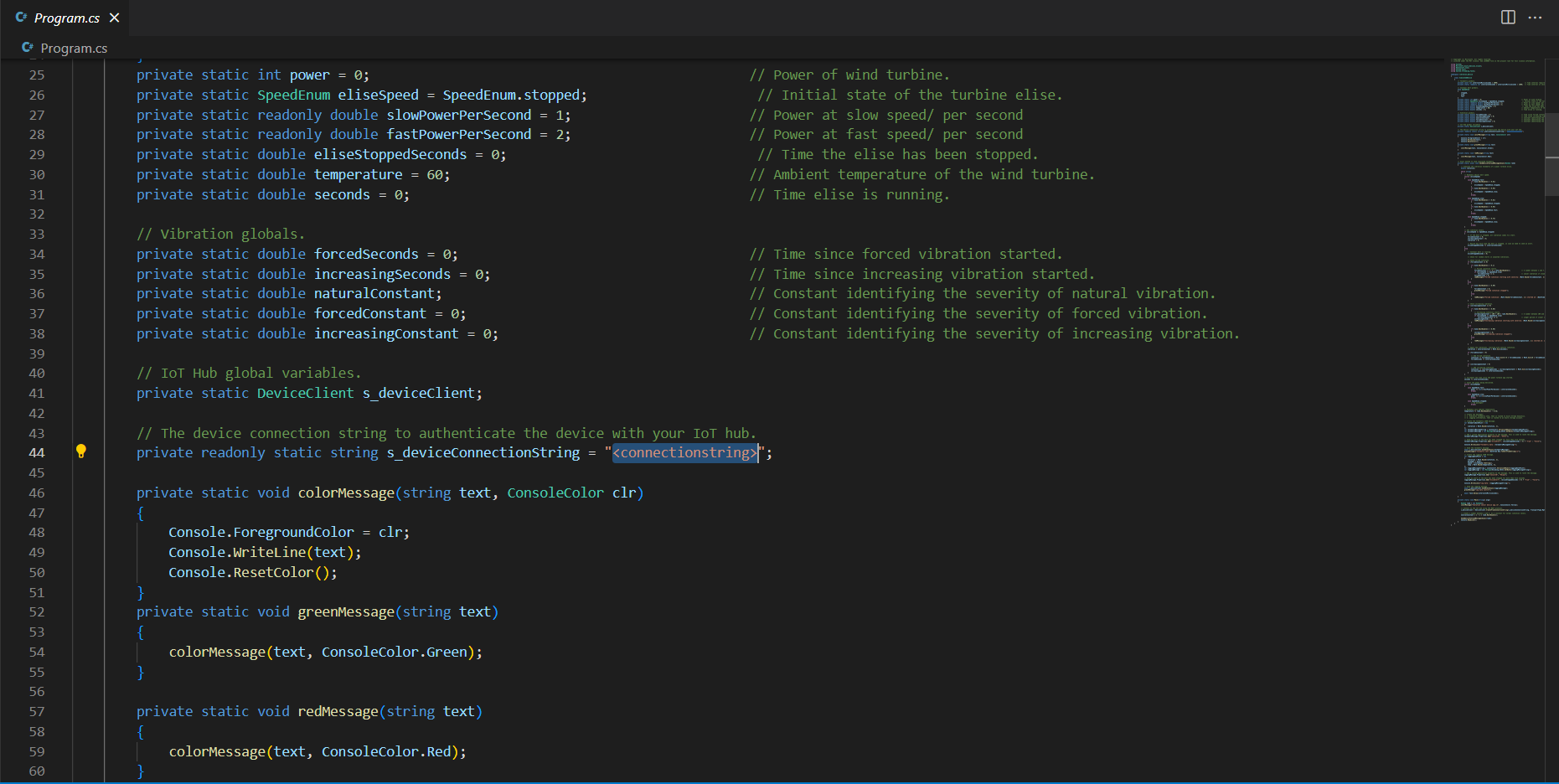
Graphical user interface, application, email

Description automatically generated

4. Create device and select it. Copy the Primary connection string and keep it handy.

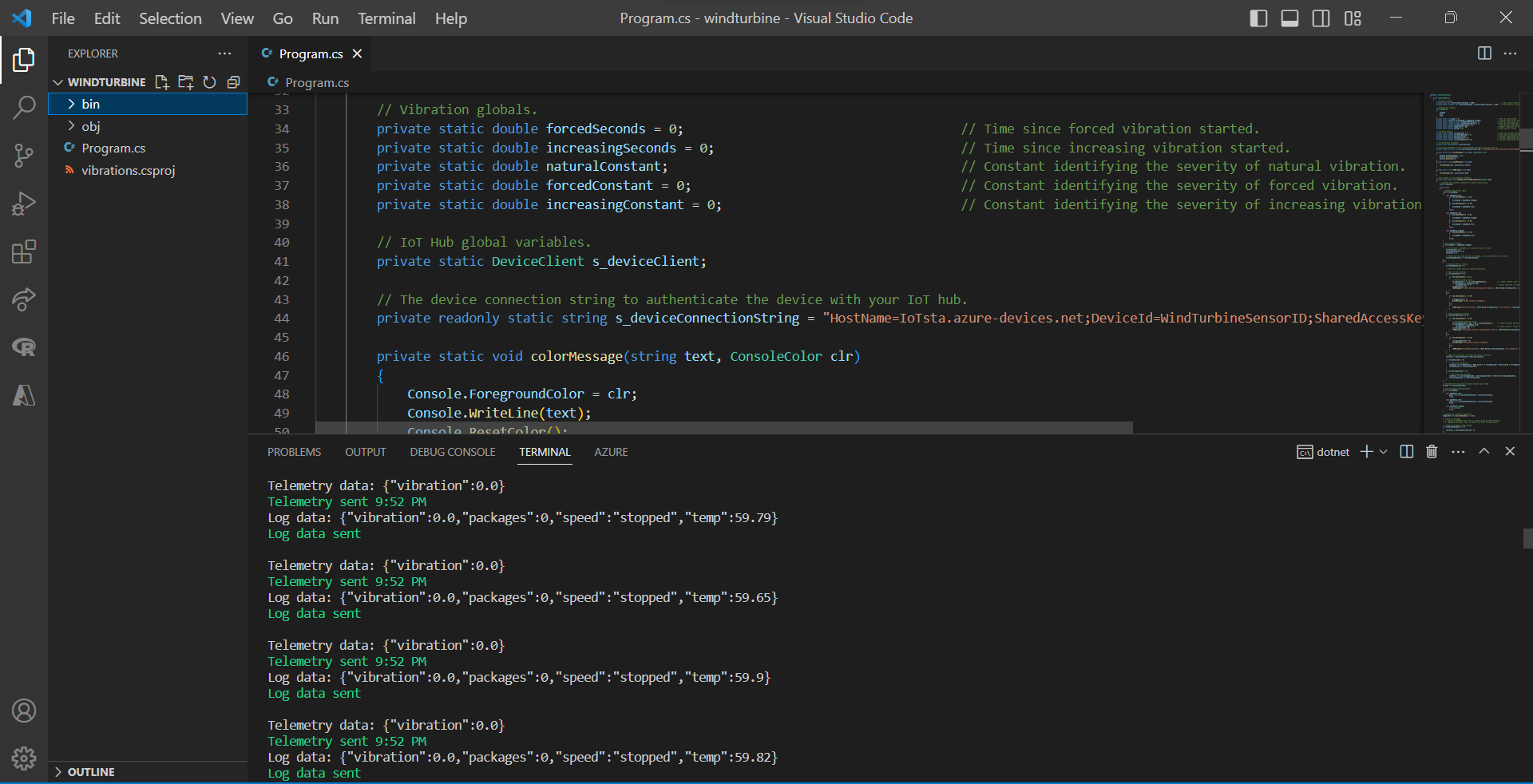
HostName=IoTsaj.azure-devices.net;DeviceId=WindTurbineSesorID;SharedAccessKey=8KyTpDS/FblMCHCciqfgt+mataIBHXZPkCau/iUVFhg=

5. Now we’ll prepare an IoT device simulator using VSCode



6. Make sure to copy the primary key in line 44 and execute dotnet run in the terminal

7. you must have .Net installed in your system <https://dotnet.microsoft.com/en-us/download/dotnet?cid=getdotnetcorecli> for this step



8. Once you have .Net installed in the system, execute dotnet run. You should see that the Iot device simulator is running.

**3. Routing Messages using IoT Hub**

1. visit azure portal and navigate to your IoT Hub device. Under Hub Settings select Message routing.

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application

Description automatically generated

**4. Create Azure Stream Analytics Job for Logging route**

1. create stream analytics job for logging route

Graphical user interface, application, Teams

Description automatically generated

2.

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, application

Description automatically generated

**5. Sending data into Power BI from Stream analytics job**

1. We’ll create event hubs

Graphical user interface, text, application

Description automatically generated

2. after creating visit the reousrce, here you;ll create an envet hub. Click on add event hub and give it a name, create your event hub.

3. Navigate to your iot hub, go to message routing, create a new routing by clicking on add

Graphical user interface, text, application, email

Description automatically generated

4. Create and enter telemetry text file code.

5. got to stream analytics job > inputs> add stream input> event hub

Graphical user interface, application, Word

Description automatically generated

6. After saving, testing. Got to output>add>power bi>authorize

Graphical user interface, application

Description automatically generated

Chart, timeline, bar chart

Description automatically generated