8. Access the data pushed from sensor to cloud and apply any data analytics or visualization services.

Aim : Accessing data pushed from a sensor to the cloud and applying data analytics or visualization services

Requirements: Amazon AWS Thing / IOT Core, DynamicDB

Procedure:

Accessing data pushed from a sensor to the cloud and applying data analytics or visualization services typically involves several steps using a popular cloud platform like AWS :

1. **Create an IoT Thing in AWS IoT Core:** Register the sensor device in AWS IoT Core as an IoT Thing. This will allow the sensor to connect to the cloud and send data.
2. **Connect the sensor to the cloud**: Use the AWS IoT Device SDK to connect the sensor to the cloud and configure it to send data to AWS IoT Core.
3. **Collect and store data**: Configure AWS IoT Core to collect the sensor data and store it in a data storage service such as Amazon S3 or Amazon DynamoDB.
4. **Access and analyse the data**: Use services like Amazon QuickSight or Amazon Athena to access the stored data and perform data analytics or visualization. These services allow you to create visualizations, dashboards and reports for the sensor data.
5. **Automate data analysis**: Use services like Amazon Kinesis Data Analytics, AWS Lambda, and Amazon CloudWatch to automate data analysis and set up alerts or notifications based on specific conditions.
6. **Visualize the data**: Use services like Amazon QuickSight, or other data visualization tools such as Tableau or Power BI to create visualizations of the sensor data.
7. **Secure communication**: To secure the data communication between sensor and cloud, you can use various security features such as X.509 certificates, AWS IoT Device Defender and AWS IoT Device Management.

Conclusion:

Hence, Accessed the data pushed from sensor to cloud and applied data analytics and visualization service using AWS – IOT Core.