

Case Studies

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1. Challenge

A distinguished healthcare provider, faced challenges in sustaining their on-premises SQL data warehouse. The associated costs and the substantial support hours required for maintaining physical database servers across multiple environments prompted the need for a more efficient solution.

2. Scope of work

I spearheaded the migration of the client's on-premises data warehouse to the cloud. My responsibilities encompassed providing technology recommendations, implementing the cloud data warehouse, migrating and converting SSIS packages, transitioning SQL agent jobs to the cloud, and repointing Power BI reports to optimize data modeling.

Modern Datawarehouse

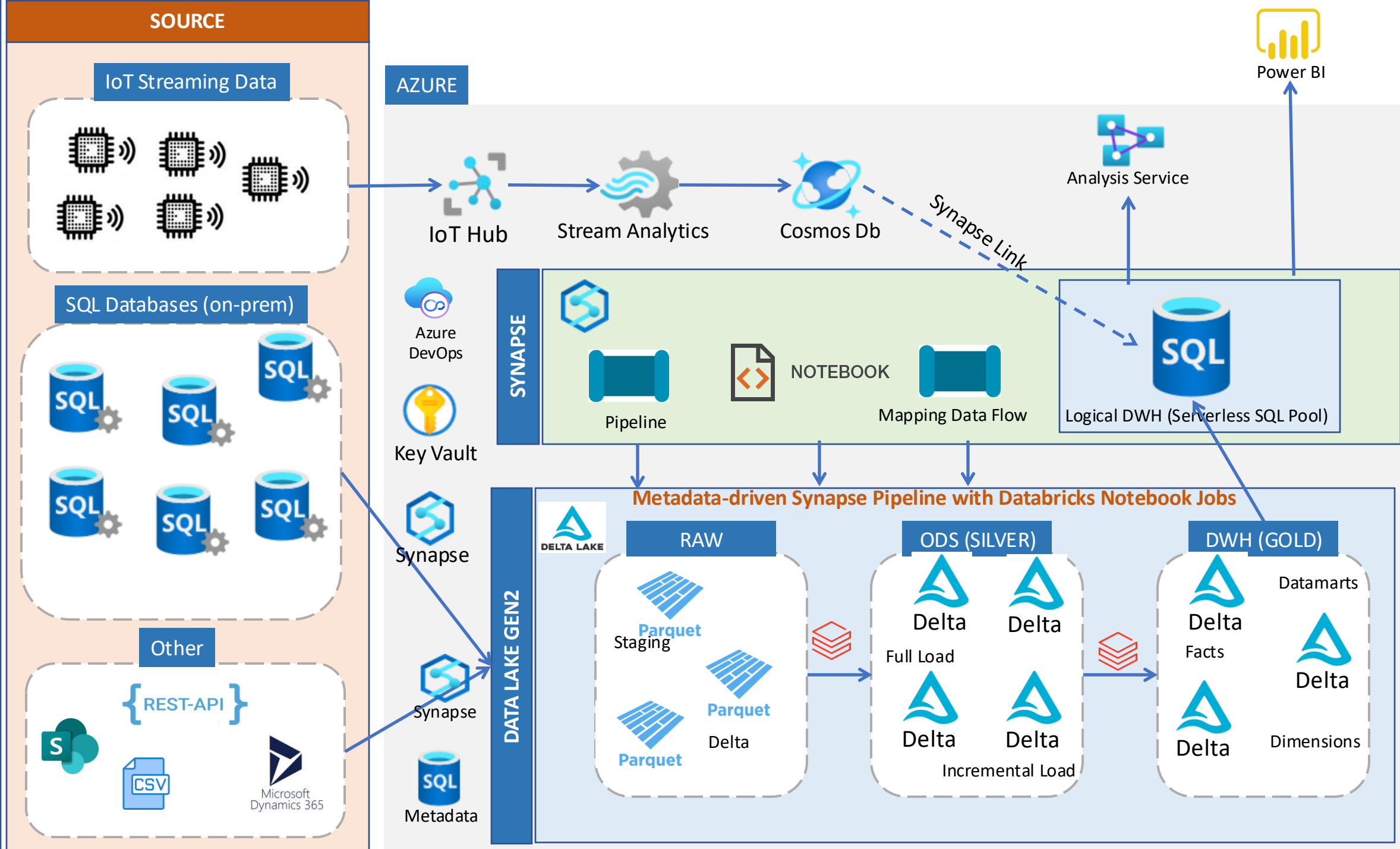
3. Technology stack

- Microsoft Azure Cloud
- Microsoft SQL Server
- Azure Data Factory
- Synapse Analytics Workspace
- Synapse Serverless SQL pool
- Data Lake Gen2
- Databricks
- Private Endpoints

4. Outcome

- Fully productionized medallion architecture Azure Cloud data warehouse
- Decommissioned on-prem data warehouse
- Lightweight data centre
- Freed support hours and
- Massive cost savings

Project : Modern Datawarehouse



1. Challenge

One of the largest local government of Australia, was looking to explore and expand their capability in Smart Technologies (i.e. IoT, RPA and Augmented reality). They do not have proper process or technical architecture to support demanding IoT use cases to support different of their organizational units.

2. Scope of work

Assuming the role of a Technical Domain Experts for IoT capabilities, I undertook the establishment of a robust Azure cloud ingestion architecture at a production level. This encompassed the provision of comprehensive support for metadata, data models, and the creation of replicable IoT Proof of Concept (PoC) use case templates. The objective was to facilitate the streamlined implementation of multiple IoT use cases by adhering to consistent and effective patterns.

IoT Solution Architecture

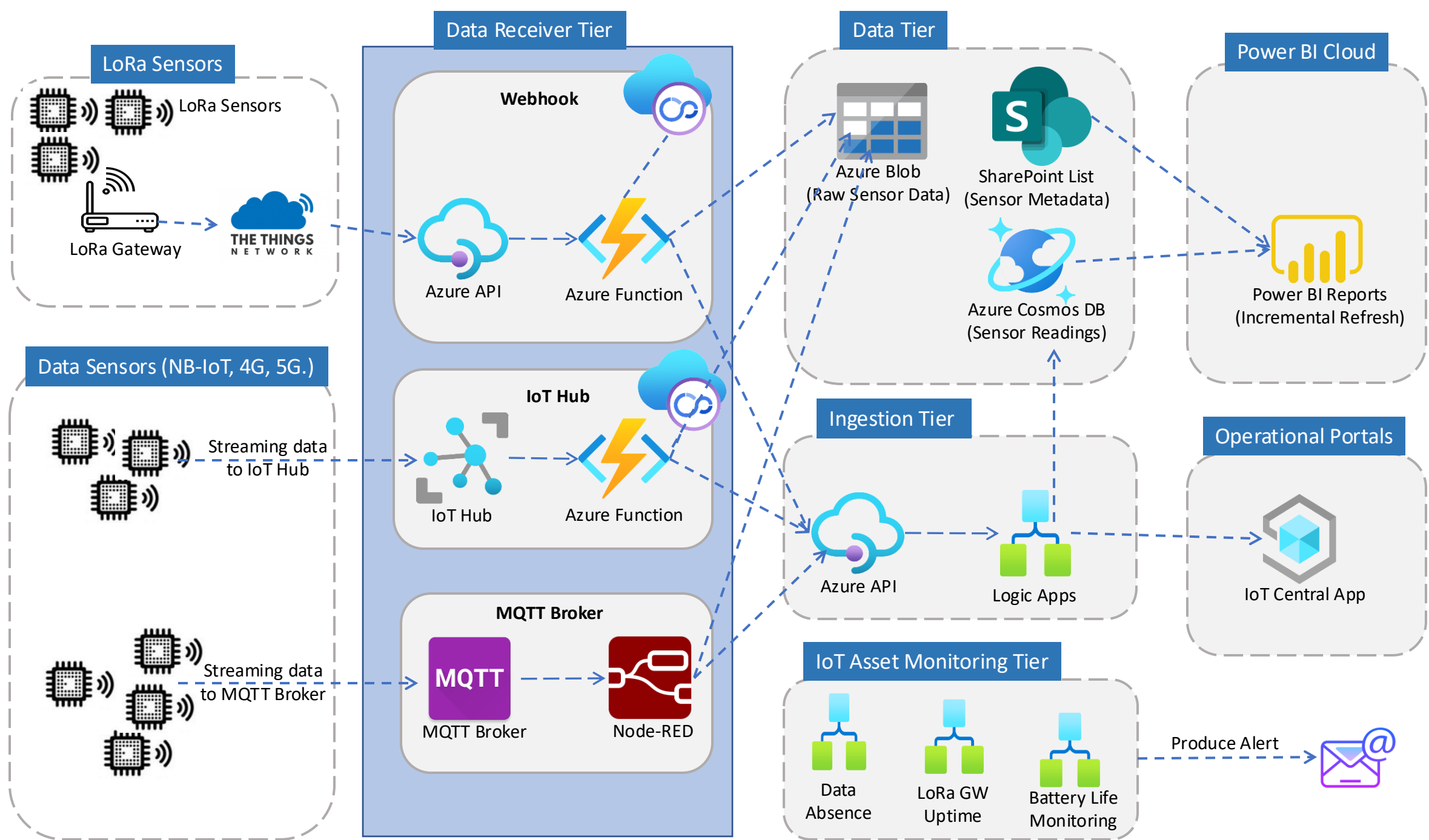
3. Technology stack

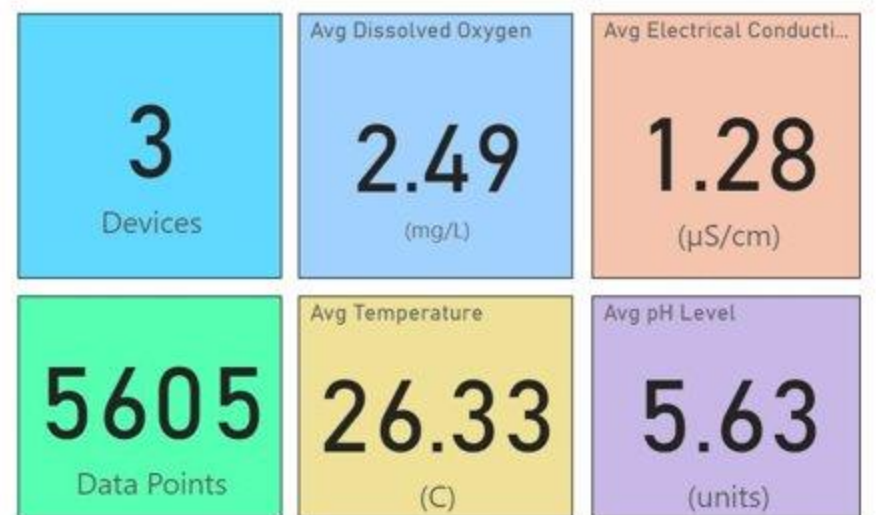
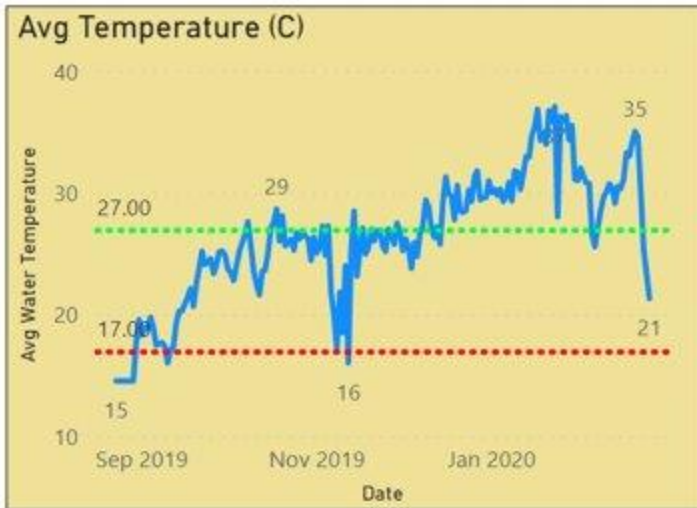
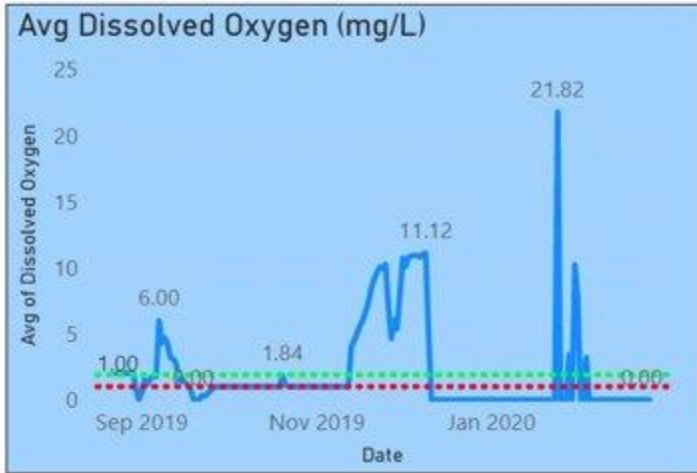
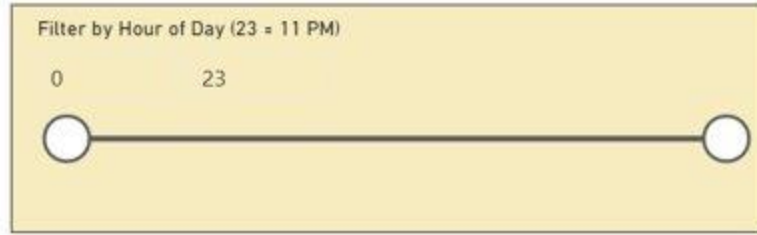
- Microsoft Azure Cloud
- Azure Logic Apps
- Azure Cosmos DB
- SharePoint
- IoT Hub
- Data Lake Gen2
- Azure API Management
- Node-RED

4. Outcome

- Fully productionized IoT data ingestion architecture
- 3 different IoT product packages (i.e. templates)
- Implemented 7 different use cases and receiving data from various type of sensors (e.g. Soil Moisture, Water level, water quality, air quality, Smart street lights, Bike counter, People counter etc)
- Multiple Power BI dashboards

Project : IoT Solution Architecture





Date Range

31/08/2020 25/10/2020



Hour Range (0-23)

0 23



1

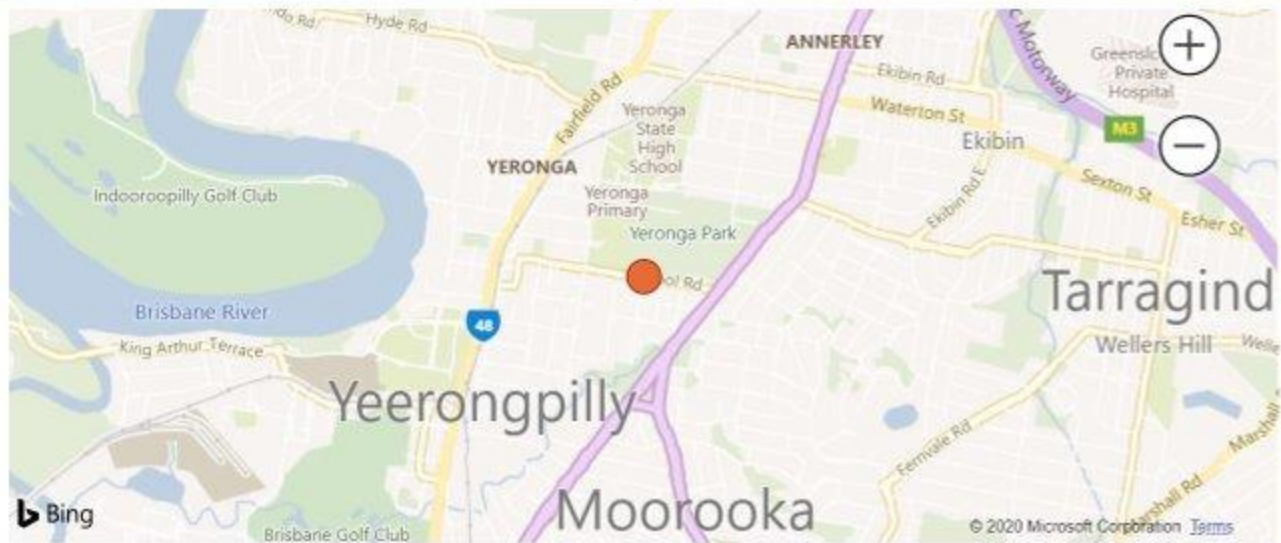
device(s)

926

data points

1.92K

Total Consumption (KL)



Day of Week

- Friday
- Monday
- Saturday
- Sunday
- Thursday
- Tuesday

Seasons

- Spring
- Winter

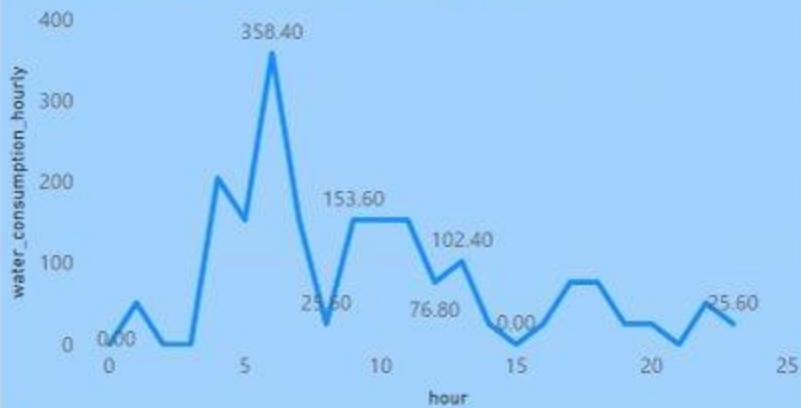
Water Meters

- Select all
- Yeronga Pool Water Meter - Main

Total Water Consumption (KL)



Avg Hourly Water Consumption Total (KL)



Consumption Report

DAILY

WEEKLY

MONTHLY

FRONT

Daily-Consumption

Weekly-Consumption

Monthly-Consumption



Site-wise Water Consumption (Weekly)

Sites

Yeronga Swimming Pool

Week Range

36

43

Swimming Pool ● Yeronga Swimming Pool



1

Site(s)

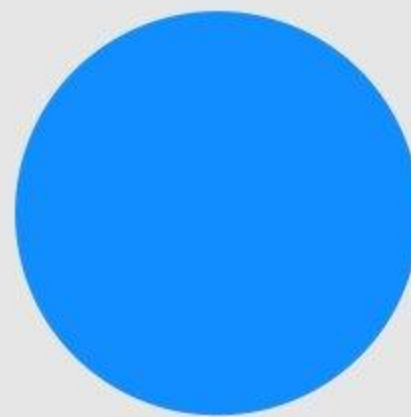
1.92K

Total Consumption (KL)

240.00

Average of Weekly Consumption

Site ● Yeronga Swimming Pool



Swimming Pool

● Yeronga Swimming Pool

1.92K (100%)

FRONT

Daily-Consumption

Weekly-Consumption

Monthly-Consumption

1. Challenge

One of the renowned US university deployed around 2000 Cisco Meraki Wireless Access Points (WAP) which are capable to identify presence of people and streams presence data every 15 minutes. They intended to capture and use this presence data to show foot traffic, identify COVID compliant distance and finally to keep these data for aggregation as well as machine learning models.

2. Scope of work

In my capacity as a subcontractor and technical specialist, I undertook a multifaceted project comprising three distinct phases.

The initial phase involved executing scenario-based simulations, randomizing floor traffic, and subsequently streaming the data, which was then presented in real-time through Power BI.

The second phase focused on capturing real-time streaming presence data from Cisco Meraki Wireless Access Points (WAPs) and visualizing the traffic patterns within Power BI.

The third and final phase centered on trialing Azure Data Explorer with the streaming data, assessing the environment in collaboration with the Data Science team.

Campus Streaming WAP data Ingestion

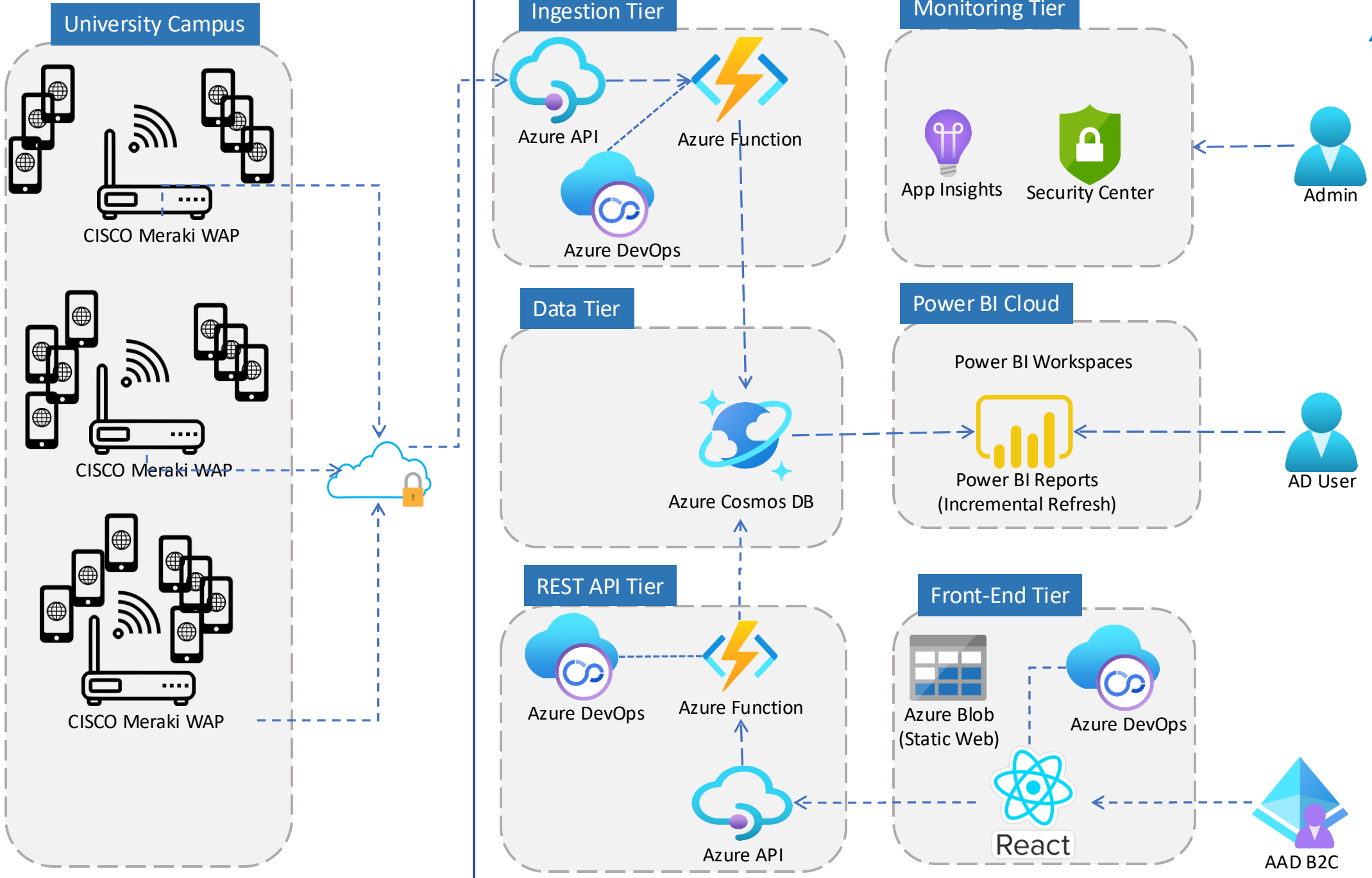
3. Technology stack

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- IoT Hub
- Data Lake Gen2
- Azure API Management
- Node-RED
- Azure Data Explorer

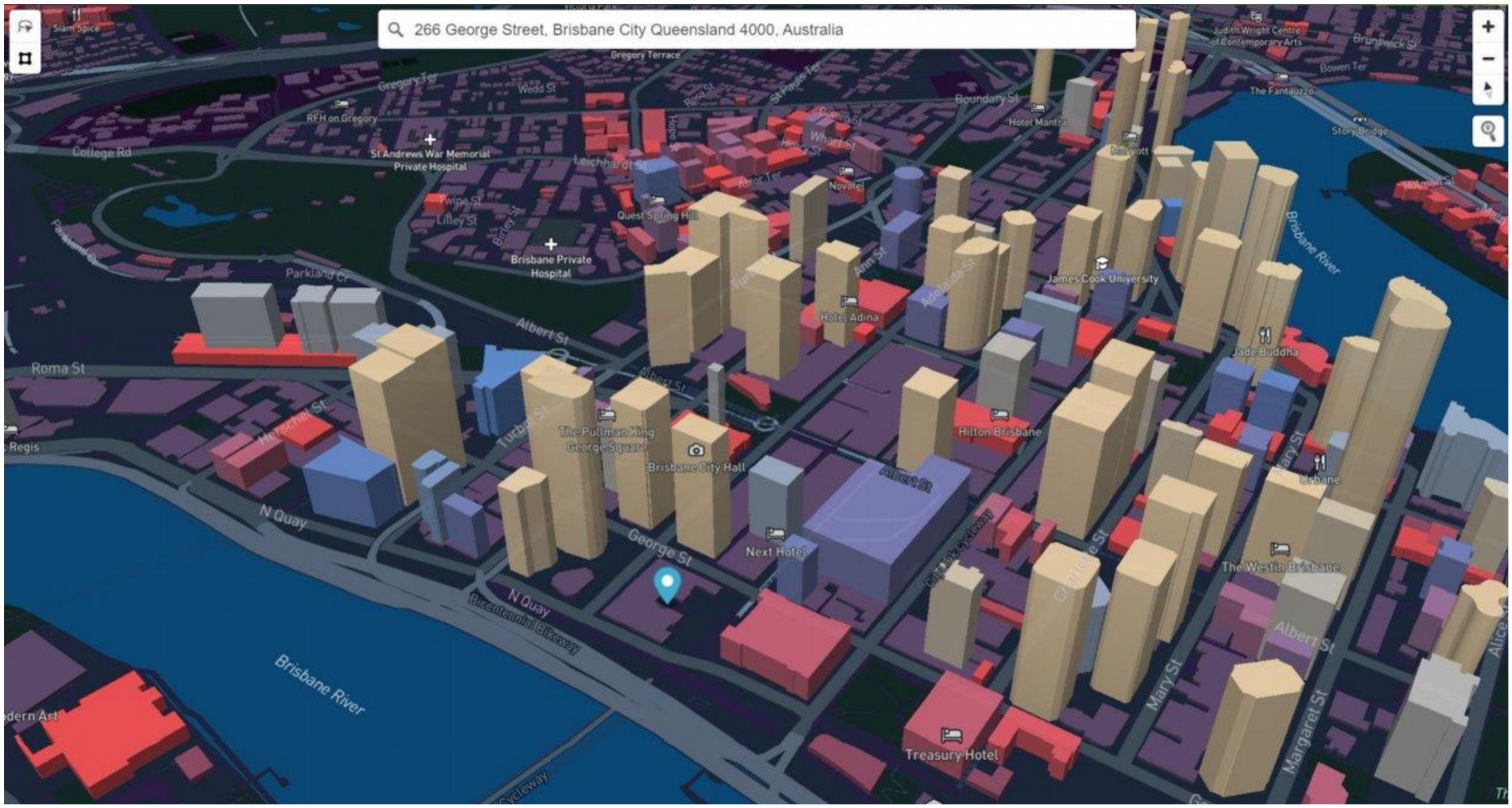
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Project : Campus Streaming WAP data Ingestion



266 George Street, Brisbane City Queensland 4000, Australia

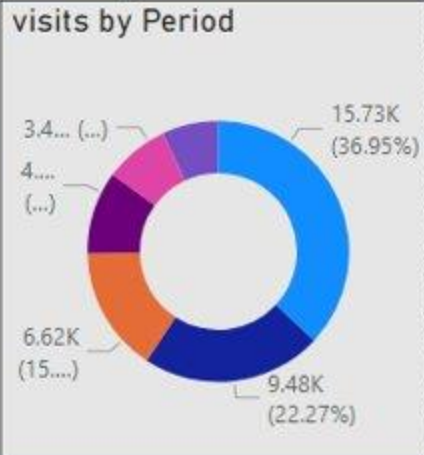
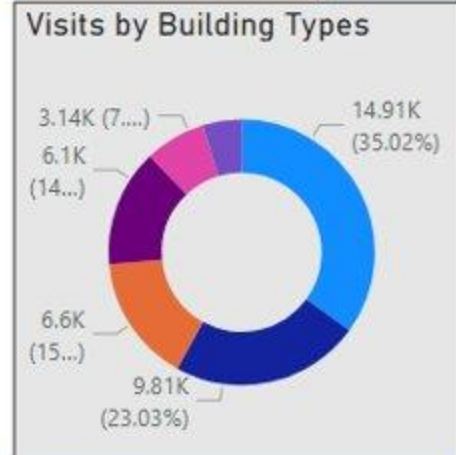
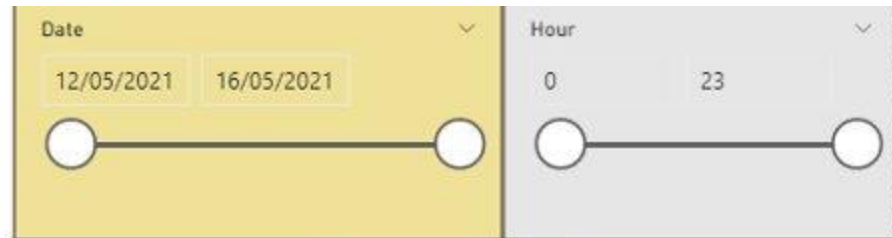


Slam Spice
College Rd
Parkland Cr
Roma St
Regis
Brisbane River
Modern Art

Gregory Terrace
Gregory Ter
Wedd St
Leichhardt St
Quest Spring Hill
Brisbane Private Hospital
Albert St
George St
N Quay
Bicentennial Bikeway
Cyclway

Hotel Mantra
Novotel
Hotel Adina
Hilton Brisbane
Brisbane City Hall
Next Hotel
Treasury Hotel

Boundary St
The Fantauzzo
Story Bridge
James Cook University
Jade Buddha
The Westin Brisbane
Margaret St
Alice St



- Building
- Art (Faculty Studios)
 - Barr Building
 - Crossroads Dining Hall
 - Freshens
 - Human Resources
 - Hunter Hall
 - Starbucks Coffee
 - Stophel Hall Apartments
 - University Center Food Court
 - UTC Admin Building
 - UTC Alumni House

- Level
- 1
 - 2
 - 3
 - 4
 - 5
 - 6