Parking Management in a Mall

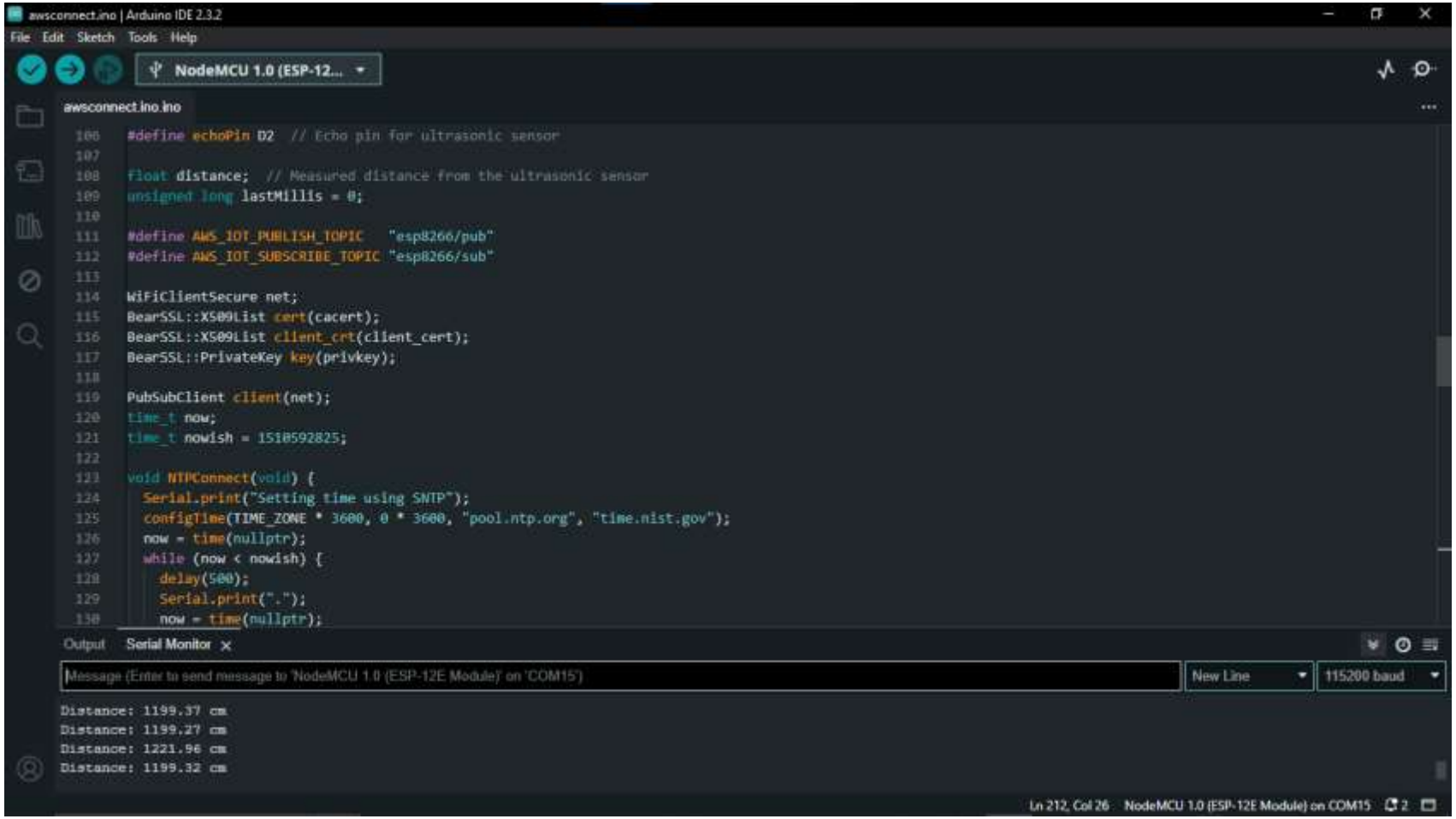
Objective

- Detects parking space availability using IoT sensors.
- Provides real-time updates of parking spots through a web application.
- Displaying the availability .
- Integrates AWS services such as DynamoDB, Lambda, and IoT Core for backend management

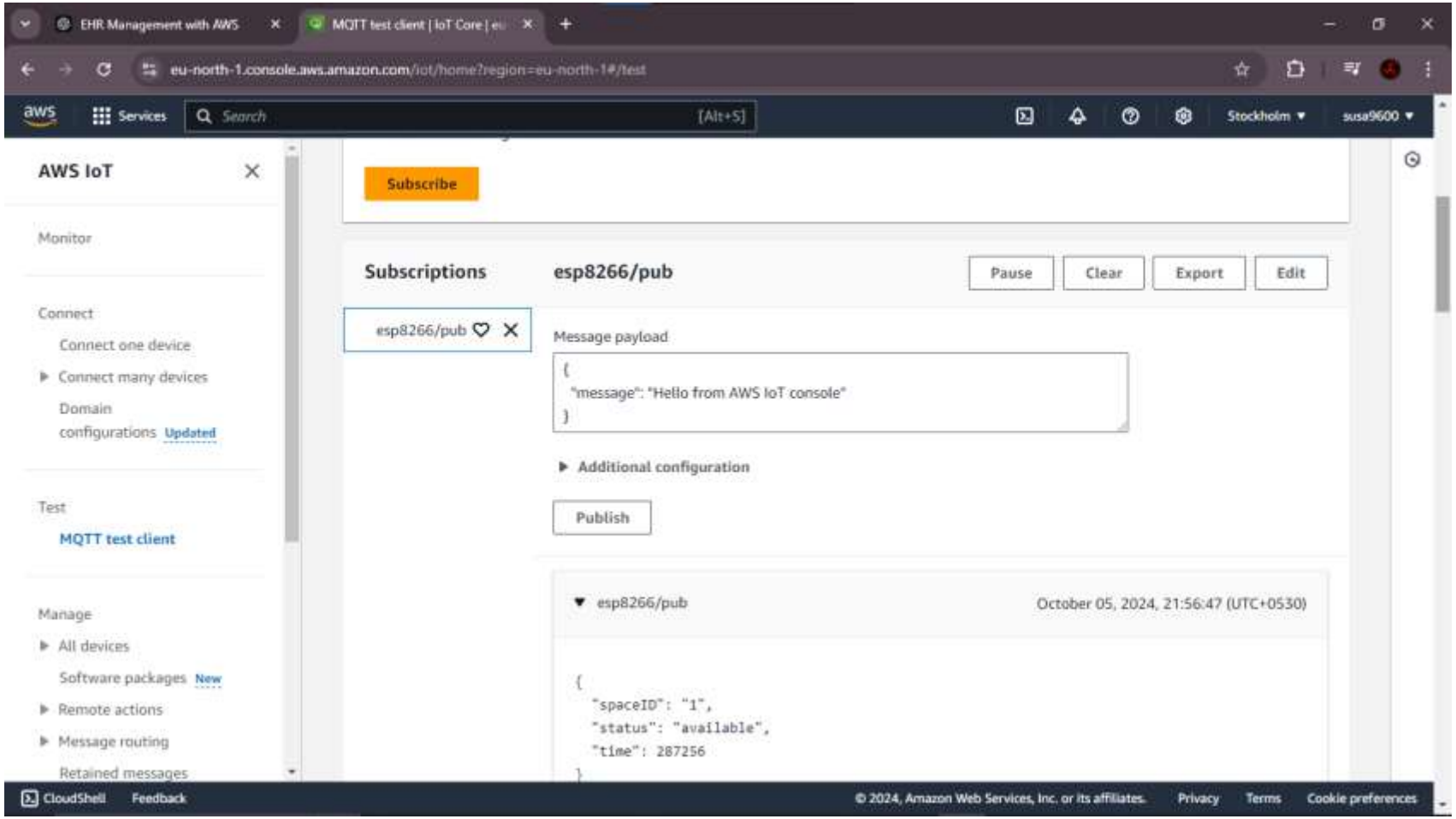
SYSTEM ARCHITECTURE

1. IoT Devices (Ultrasonic Sensors): These sensors detect whether a parking spot is occupied or available.
2. AWS IoT Core: Facilitates the communication between IoT devices and the cloud infrastructure.
3. AWS Lambda: Executes the serverless backend logic, including sensor data handling, database interactions, and API responses.
4. DynamoDB: A NoSQL database used to store parking space data, including real-time sensor status and reservation information.
5. API Gateway: Exposes API endpoints for the web application to interact with the backend.
6. Web Application (Frontend): Displays real-time parking information

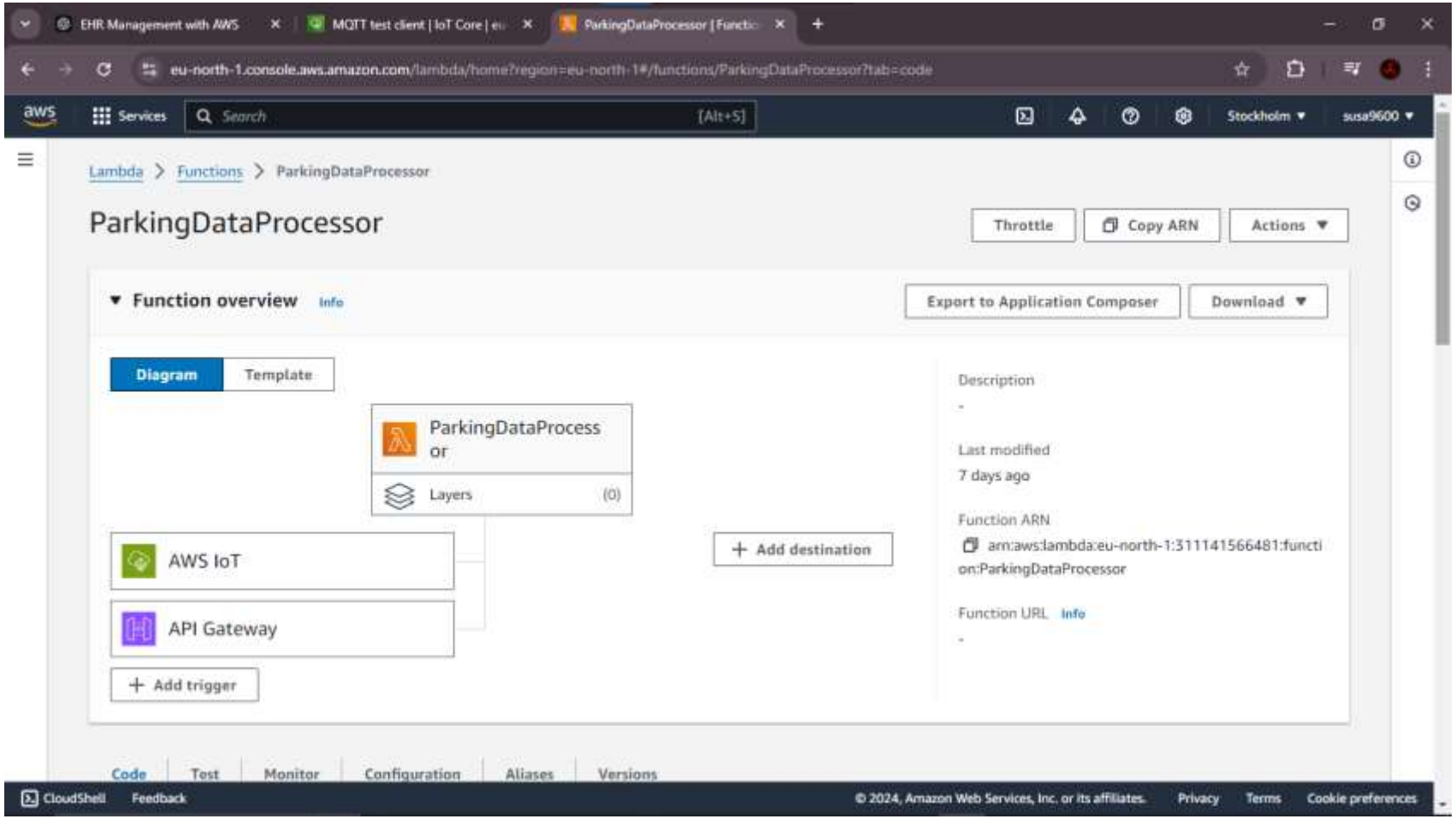
Arduino IDE program for Esp8266



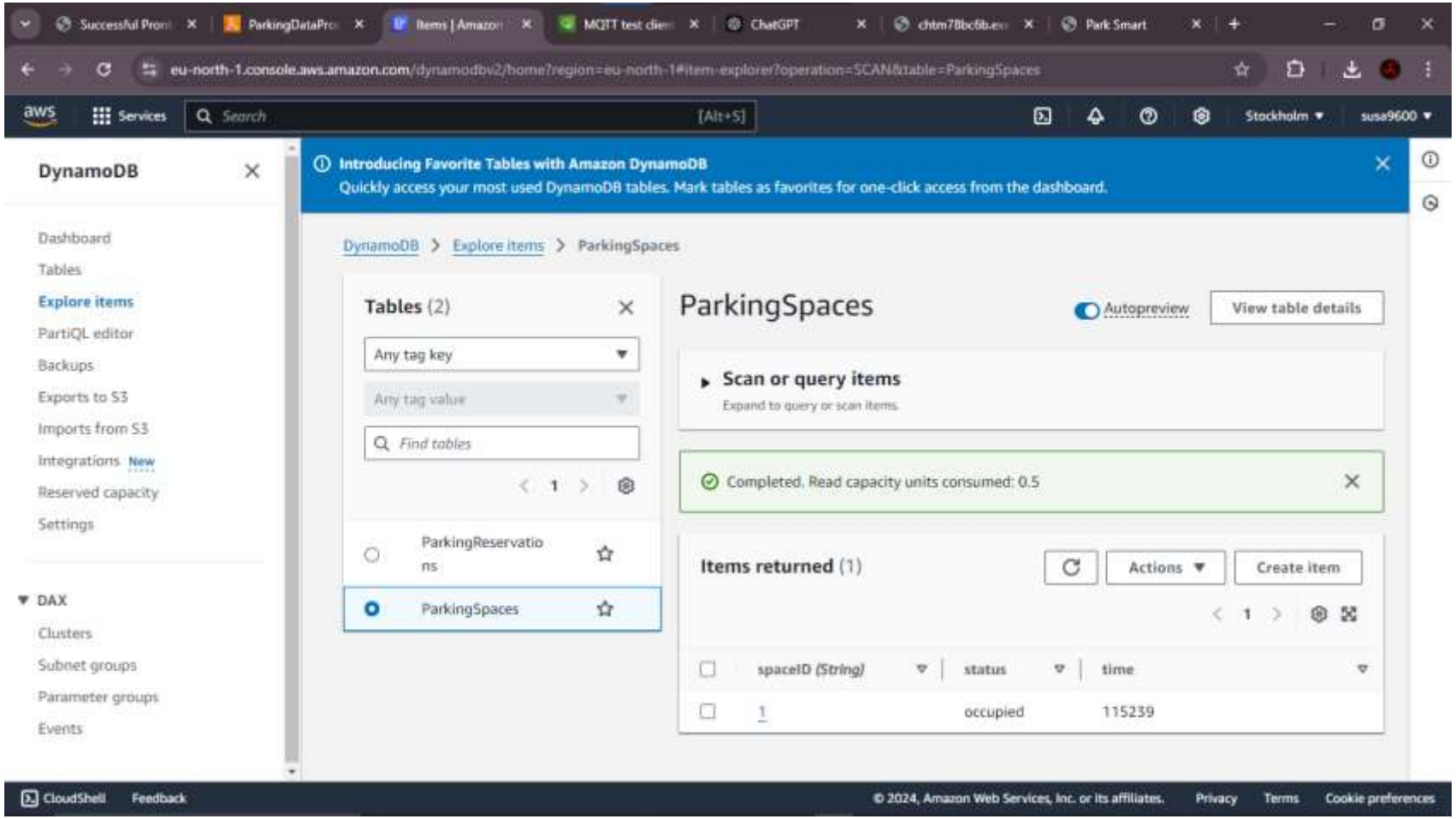
Aws IOT Core - MQTT



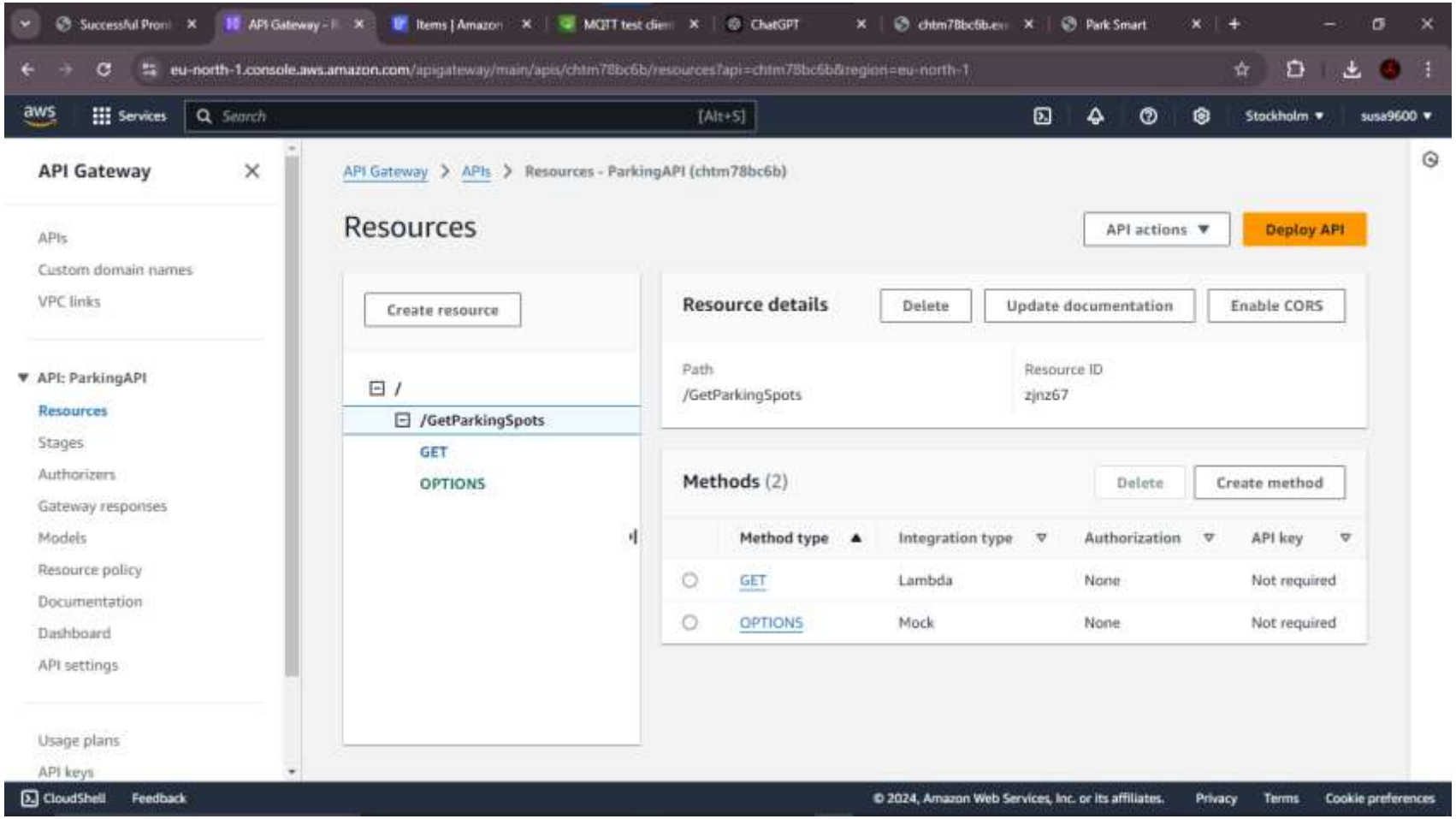
Lambda – parking data



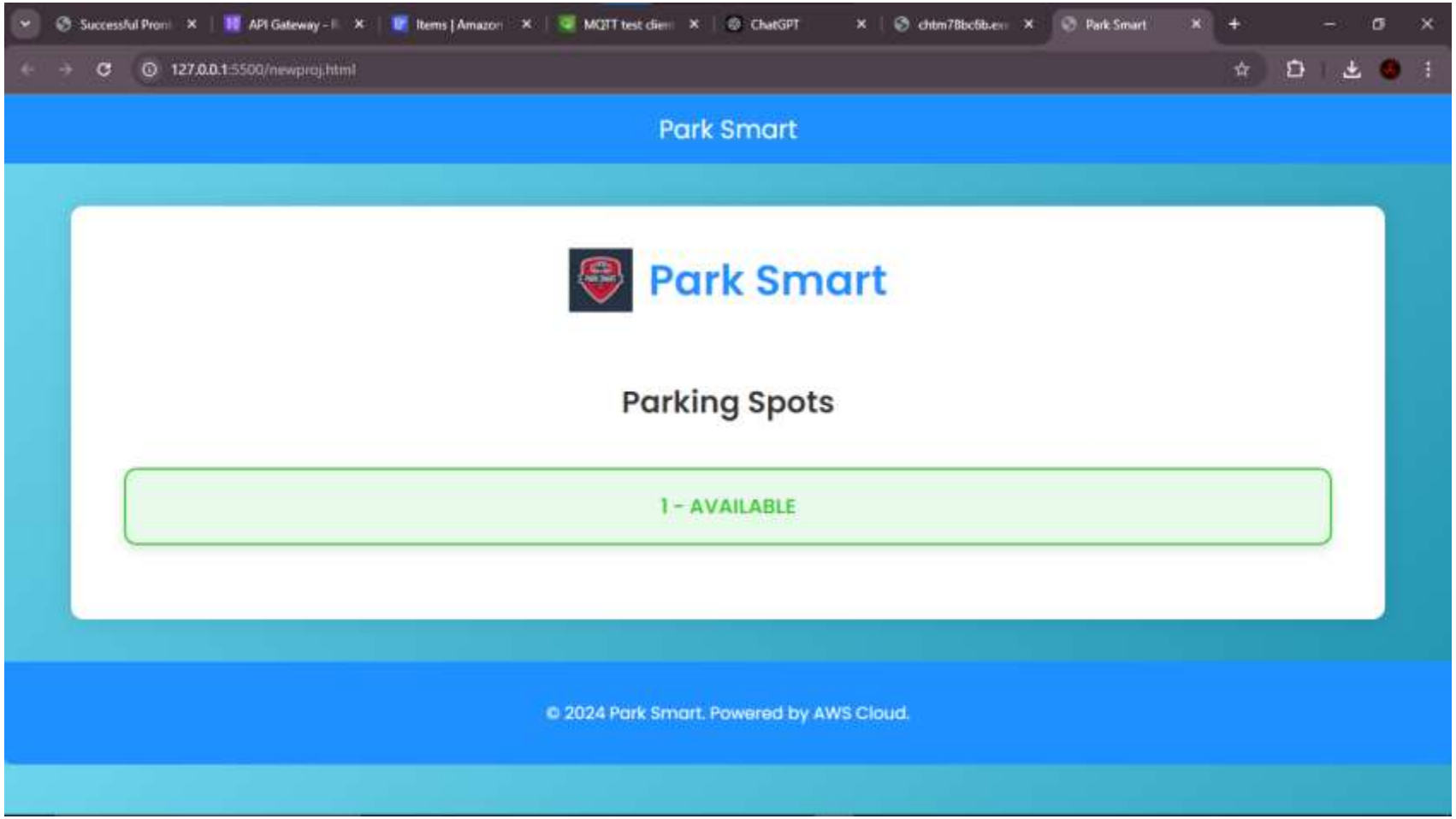
DynamoDB – for Parking Data



API gateway – parking data



Web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Park Smart
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Parking Spots
1 - AVAILABLE
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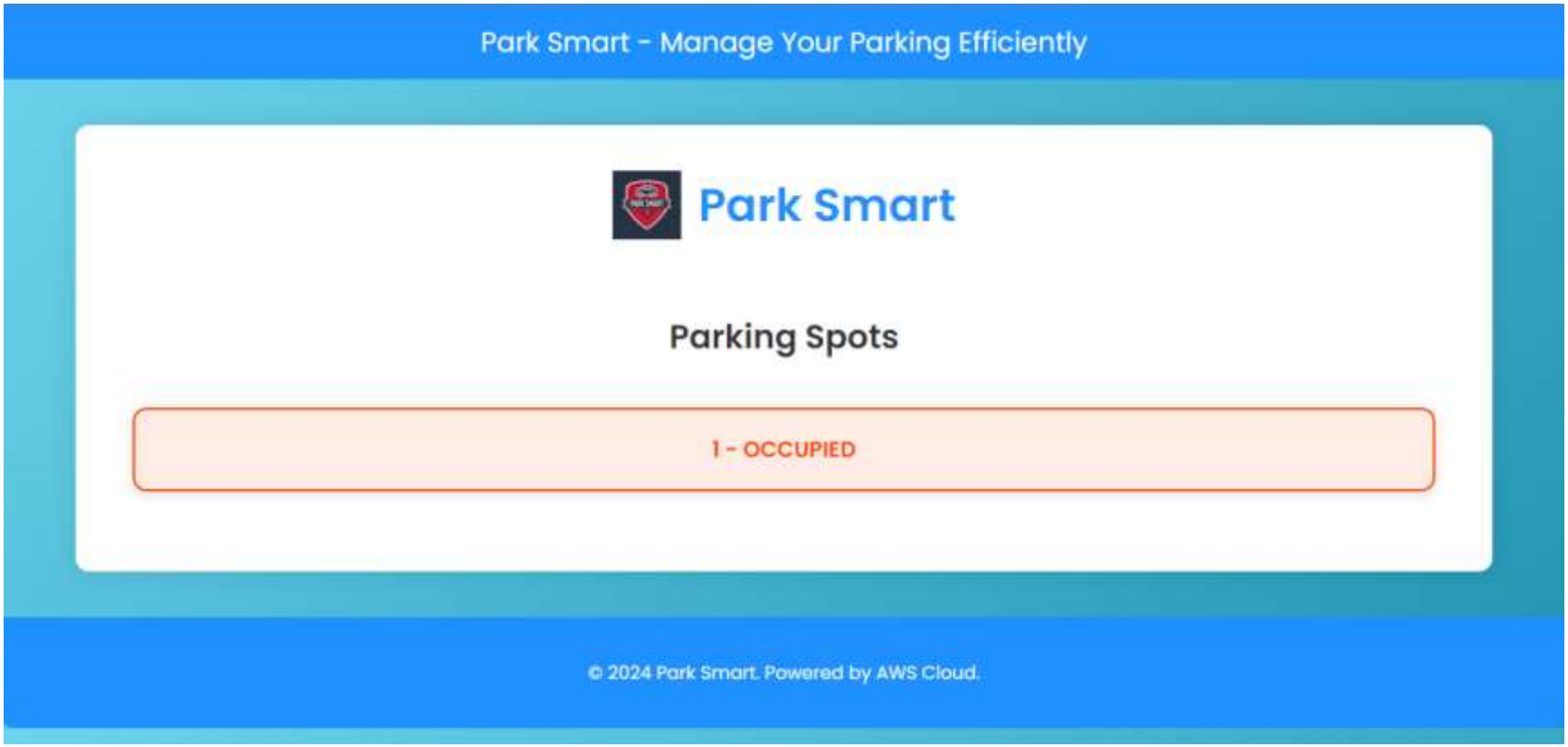
Web


Park Smart - Manage Your Parking Efficiently
Park Smart
Parking Spots
1 - OCCUPIED
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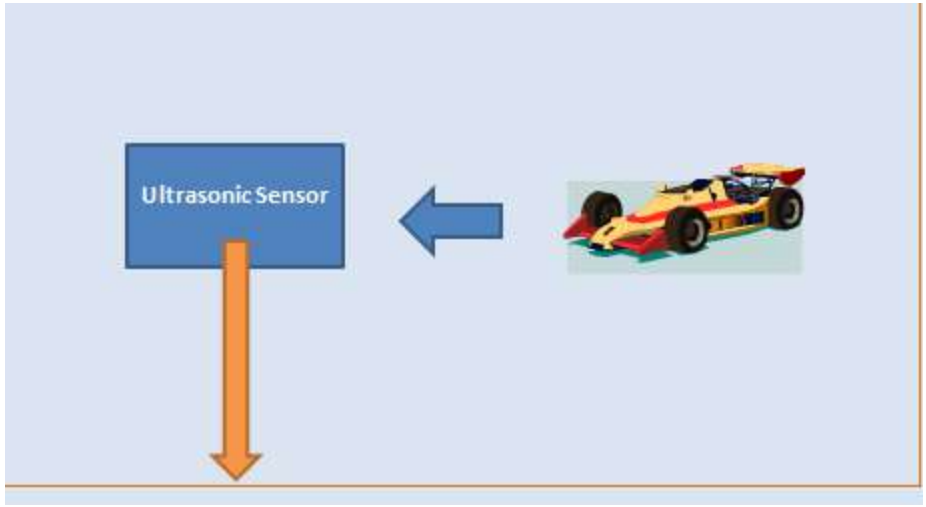
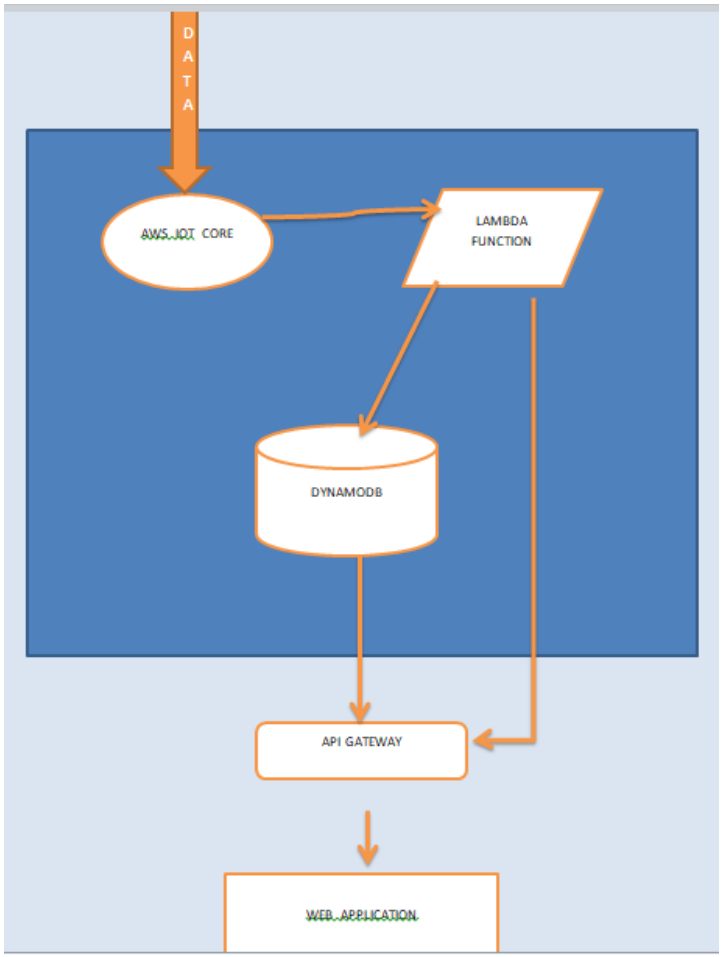

Ultrasonic Sensor


DATA
AWS IOT CORE
LAMBDA FUNCTION
DYNAMODB
API GATEWAY
WEB APPLICATION