



TACHOGRAPH SYSTEM



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Introduction

The Tachograph Data Viewer System is an application designed to simulate, manage, and analyze tachograph data, with a focus on data generation, retrieval, storage, and presentation. This release marks the culmination of efforts to create a robust and user-friendly system that adheres to technical constraints and meets the specified measurement criteria.

Key Features

1. Data Simulation with Sample Data

- Implemented a simulated data generator to mimic tachograph-like driver file data.
- Generated a sample dataset adhering to specified rules, including handling up to 100 distinct driver files daily.

2. Data Storage and Presentation

- Developed a parser for driver file data to improve readability.
- Stored parsed data in a Postgres database using Docker Compose.
- Pre-stored driver details in a DynamoDB Table for enhanced data representation.

3. User Interface (UI)

- Created a user-friendly dashboard using React for real-time data analysis.
- Provided options for filtering and searching data based on DateTime and Driver.
- Listed drivers with various violations for easy identification.

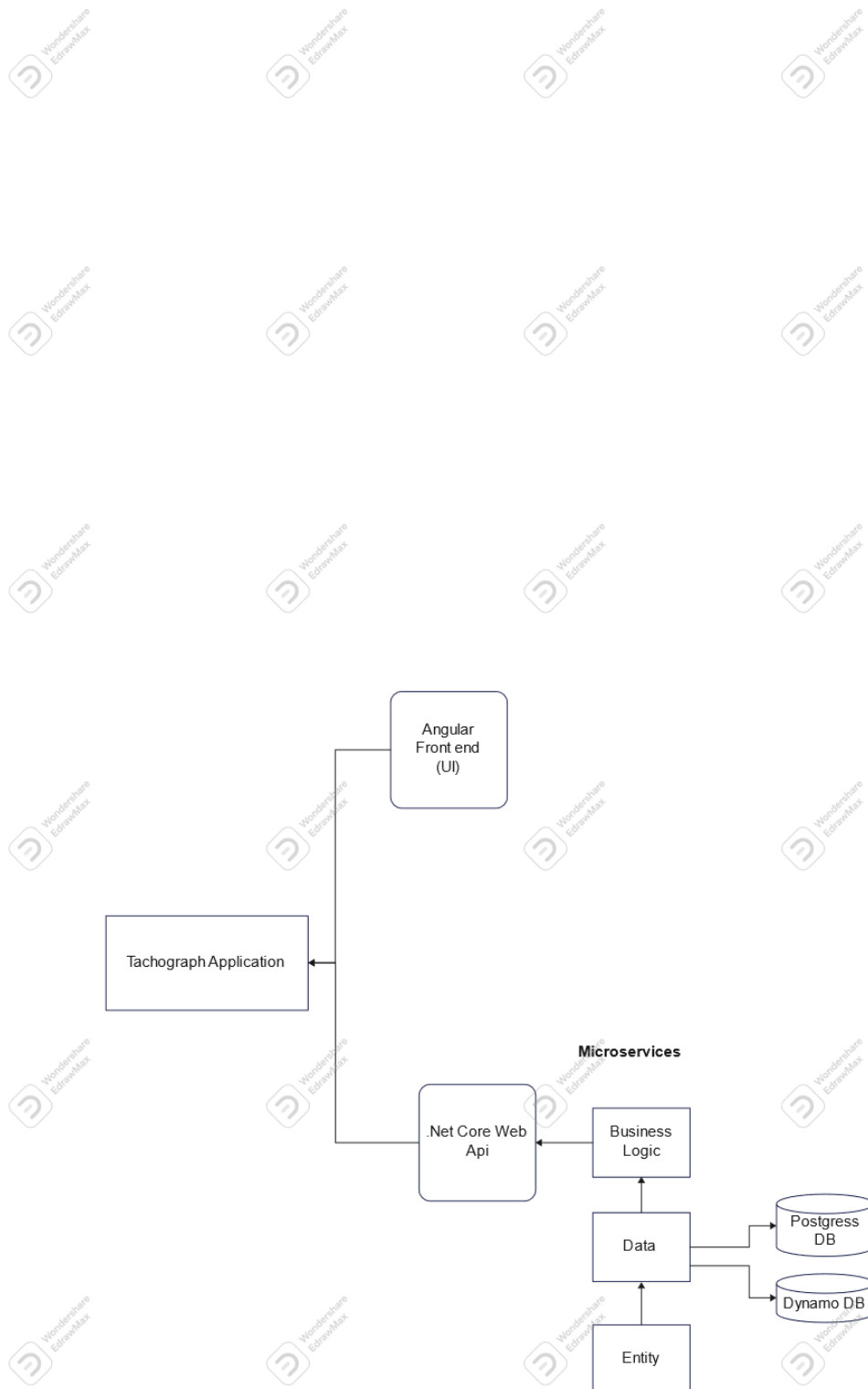
4. Documentation

- Documented the system architecture, protocols used, and compliance measures.
- Included comments and explanations in the codebase for better understanding.

5. Code Quality and Review

- Achieved a high level of unit test coverage to ensure code reliability.
- Reviewed the codebase for adherence to clean code principles and best practices.
- Ensured proper error handling and logging for effective troubleshooting.
- Included end-to-end tests using Postman collections for comprehensive testing.

System Architecture



Technical Constraints

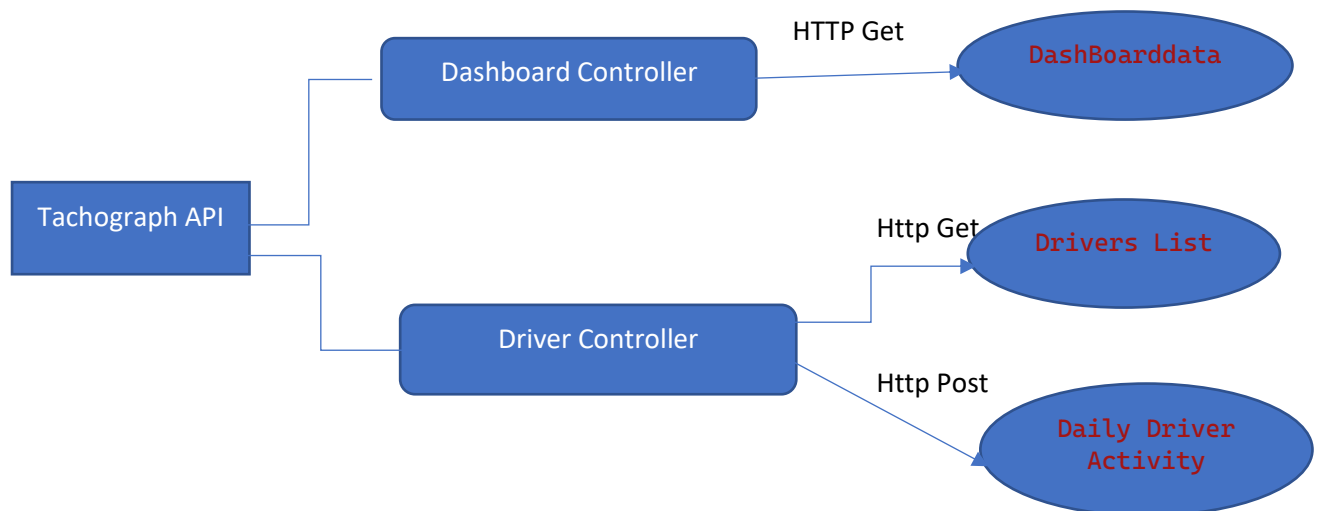
APIs: .Net Core

Frontend: Angular

Databases: Postgres and DynamoDB

DB Name	Connection String
Postgres	Host=localhost;Port=5432;Database=tachograph;Username=postgres;Password=Admin@123;
Dynamo DB	<pre>"AWS": { "Profile": "default", "Region": "ap-south-1", "AccessKey": "", "SecretKey": "" }</pre>

API Diagram



Dashboard	
GET	/api/Dashboard/GetDashBoarddata

```
curl -X 'GET' \
  'https://localhost:7125/api/Dashboard/GetDashboarddata' \
  -H 'accept: text/plain'
```

Request URL

https://localhost:7125/api/Dashboard/GetDashboarddata

Server response

Code	Details
200	<p>Response body</p> <pre>{ "isSuccess": true, "message": "", "data": { "totalDrivingTime": "1.05:30:00", "totalRestTime": "00:45:00", "exceededDriveTimeViolations": [{ "driverID": "1", "firstName": "Test", "lastName": "Driver", "startTime": "2023-11-25T14:00:00", "endTime": "2023-11-25T18:30:00", "violationHours": "4.50" }, { "driverID": "1", "firstName": "Test", "lastName": "Driver", "startTime": "2023-11-26T08:00:00", "endTime": "2023-11-26T20:00:00", "violationHours": "12.00" }, { "driverID": "1", "firstName": "Test", "lastName": "Driver", "startTime": "2023-11-27T09:00:00", </pre> <p>Download</p>

Driver

GET /api/Driver/GetDriversList

server response

Code	Details
200	<p>Response body</p> <pre>{ "isSuccess": true, "message": "", "data": [{ "driverId": "1", "firstName": "Test", "lastName": "Driver", "address": "New Town, Sweden", "mobileNumber": "987652455", "nationality": "Sweden", "licenseNumber": "ABC1234", "status": "Active" }], "total": 0 }</pre> <p>Download</p>

server response

Code	Details
200	<p>Response body</p> <pre>{ "isSuccess": true, "message": "", "data": [{ "driverId": "1", "firstName": "Test", "lastName": "Driver", "address": "New Town, Sweden", "mobileNumber": "987652455", "nationality": "Sweden", "licenseNumber": "ABC1234", "status": "Active" }], "total": 0 }</pre> <p>Download</p>

Code	Details
200	<p>Response body</p> <pre>{ "isSuccess": true, "message": "", "data": "Daily driver activity saved successfully!", "total": 0 }</pre> <p>Response headers</p> <p>Download</p>

Unit Testing

Added the postman collection.

Conclusion

The Tachograph Data Viewer System version 1.0.0 represents a significant milestone in the development process. It provides a comprehensive solution for managing and analyzing tachograph data, adhering to technical constraints and meeting the specified measurement criteria,

Reference

Chatgpt used :10%