Assignment details:(develop prototype and not a full project)

Objective: Your task is to design a microservices architecture for a web application that involves connecting different sensors. The goal is to ensure scalability, high performance, and easy deployment using Docker.

Requirement:

1. Sensor Integration Service
2. Design a microservice responsible for integrating data from different sensors.
3. Ensure the service is scalable and can handle data from various types of sensors (e.g., temperature sensors, motion sensors).
4. Implement a mechanism to handle sensor failures gracefully without affecting the entire system.

B) Data Processing Service

1. Design a microservice for processing the data received from the Sensor Integration Service.
2. Implement data processing logic based on the type of sensor data.
3. Ensure the processing service can scale horizontally to handle increased data processing requirements.

C) Web Application Backend

1. Design a microservice to serve as the backend for the web application.
2. Integrate the Data Processing Service to provide processed data to the frontend.
3. Implement an API for the frontend to request sensor data and processed information.

D) Dockerization

1. Dockerize each microservice designed above.
2. Create a docker-compose.yml file for orchestrating the Docker containers.
3. Ensure the Dockerized services can be easily deployed and scaled.

E) Dashboard development

1. develop dashboard using angular framework and display dummy value of  Temprature,motion and humidity
2. Make sure dashboard is responsive and render very well with mobile,TV,desktop screen
3. Put graph into Dashboard and display data with date fileter (bar graph,pie chart )
4. Make sure mocroservices are integrated with angular componenet through REST API services

Output from candidate:

A)  Documentation

1. Create document of microservices architecture?
2. Document how scalability and fault tolerance considered in the design.
3. Documentation for each microservice, explaining the design decisions, API endpoints, and how to run the services locally using Docker.

B) Code

Write code well-structured, modular, and follows best practices  
Ensure appropriate libraries/frameworks used for microservices development

Demonstrate all the points mentioned from A to E and subpoints mentioned under each point in the code

Timeline to submit assignment (1 week )