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ER Diagram for a Distributed Sensor Network

Problem Description

In this exercise, we shall construct an ER diagram for a simple distributed wireless sensor network. The key entities and relationships are summarized below:

1. The sensor network consists of multiple sensor nodes equipped with a RF communication module configured for peer-to-peer communication
2. Each sensor node has information about the node that is closest to it. This is the only node with which it is allowed to communicate
3. Each sensor node contains multiple sensors. Each sensor measures physical parameters such as ground acceleration, temperature and structural strain. Assume that these are the only three parameters a sensor is allowed to measure. While a sensor can store a time-history of measurements, we further assume that in our network, it can store only instantaneous values. Each sensor measurement is associated with a time-stamp
4. Looking at the data from each sensor might not be too meaningful; we are primarily interested in local "averaged" behavior. Therefore, we associate each sensor node with a cluster of sensors (note that each sensor node can belong to multiple clusters). Each cluster of sensors communicates its values to a device, a data aggregator that somehow processes measurements over time (moving average, etc.)

Problem Statement

1. Create a list of entities and their key attributes that you can deduce from the problem description
2. Construct an ER diagram using Microsoft Visio® showing the entities and the relations between them