Ole Hochbrügge

DAT601 Assessment one

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## Introduction

A crucial component of building and creating information systems is data modelling. Its goal is to conceptually depict data items and the connections among them to ease stakeholder dialogue and direct system deployment. Data modeling's primary goal is to comprehend the information that a company uses and collects and to translate that comprehension into a structured manner that both technical and non-technical stakeholders can readily understand. The business procedures and regulations of an organization should be correctly reflected in a high-quality data model, which should also be responsive to changing requirements over time. Data models come in a variety of forms, such as conceptual, logical, and physical models, each having a distinct goal and amount of complexity. Conceptual models are extensive depictions.

## Description of Conceptual Modelling

A structured representation of database ideas and their interactions is a conceptual data model. Establishing entities, their qualities, and relationships is the goal of developing a conceptual data model. The underlying database structure is hardly described at this level of data modelling. A conceptual data model is often created by business stakeholders and data architects.

Conceptual Data Model's three fundamental tenets are:

Entities, a tangible object

Attributes of an entity are its traits or possessions.

Dependency or affiliation between two entities is a relationship.

## Chen Entity-Relationship-Diagram (ERD)

Diagram

Description automatically generated

## Data Dictionary

|  |  |  |  |
| --- | --- | --- | --- |
| **Entity Name** | **Description** | **Aliases** | **Occurrence** |
| 3D Sensor | A 3D Sensor | Sensor | Company Created |
| Salesperson | Handles subscription sales |  | From company hiring the salesperson |
| Supplier | Supplies Sensor parts | Store | Place to acquire parts for the sensor |
| Video (Stream) | Video of the 3D sensor | Stream | Stream from the Sensor |
| Executive | A Member of staff that can alter subscription details | Staff |  |
| Subscriber | A customer to zones | Customer, User, Client | From a Subscription being sold to a customer |
| Zone | A Location where 3D sensors are setup | Location, Area | Designated by the company |
| Contract | Level of contract a subscriber holds | Plan, Subscription | Created by the company |
| Data | Collection of audio and video | Voice, Audio, Recording | Collected by the sensor |
| Staff | Employees |  | From the company database. |

| **Entity Name / Relationship** | **Attributes** | **Description** | **Domain** | **Aliases** | **Composite** | **Derived** | **Nulls** | **Key?** | **Default Value** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **3D Sensor** | Sensor\_ID | ID of the Sensor | Integer |  |  | No | No | PK | Autoincrement |
|  | Latitude | The Latitude measurement of the sensor | Must follow standard Latitude notation |  |  | No | No | - | Null |
|  | Altitude | The Altitude measurement of the sensor | Must follow standard Altitude notation |  |  | No | No | - | Null |
|  | Longitude | The Longitude measurement of the sensor | Must follow standard Longitude notation |  |  | No | No | - | Null |
|  | Location | Location of the Sensor |  |  |  | No | No | - | Null |
|  | Backup\_Data | Data stored on device in case of failure |  |  |  | No | Yes | - | Null |
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## Assumed Business Rules (with reasoning)

## Source

IBM. (2023). *What is data modeling?* IBM - United States. <https://www.ibm.com/topics/data-modeling>

Taylor, D. (2022, August 17). What is data modelling? Types (Conceptual, logical, physical). Guru99. https://www.guru99.com/data-modelling-conceptual-logical.html