Homework 1

Khang Thai

2025-04-15

Question 1)

(a)

It might be better to store data in a semi-structured format instead of a structured format when the data is in the form of a JSON or XML data. When the data has some consistent organization but it is not stored in tabular form, it is better to use semi-structured format.

(b)

When the data is consistent and organized, it is best to use a structure format. Additionally, structured data generally use relational databases like data tables, making it easy for the data to be organized and searchable.

Question 2)

(i)

Unstructured - PDFs are typically not structured because they store information in a text or image format making it easier to read, but not structurally formatted for data.

(ii)

Semi-structured - The survey questions that were required was structured, but the skipped responses and open-ended feedback were semi-structured.

(iii)

Semi-structured - JSON format follows semi-structured data, in which the data does not follow a database table, but it is somewhat consistent and organized.

(iv)

Unstructured - Audio files are unstructured data and the transcripts are also incomplete, which is also unstructured.

(v)

Semi-structured - The metadata is structured with a organized format, but the images is unstructured, due missing certain aspects like gps and time stamps.

(vi)

Structured - The CSV format is generally structured, but with the comments columns shows a semi-structured format.

(vii)

Structured - Specific variables like price, bedrooms, and square footage are all structured format, while the description of the property and optional features are semi-structured format.

Question 3)

(a)

Event

- Attributes

- EventID (Primary Key)
- EventName
- StartDate
- EndDate

- Description

Location

- **Attributes**

  - LocationID (Primary Key)

  - LocationName

  - Address

Employee

- Attributes

  - EmployeeID (Primary Key)

  - FirstName

  - LastName

  - Postion
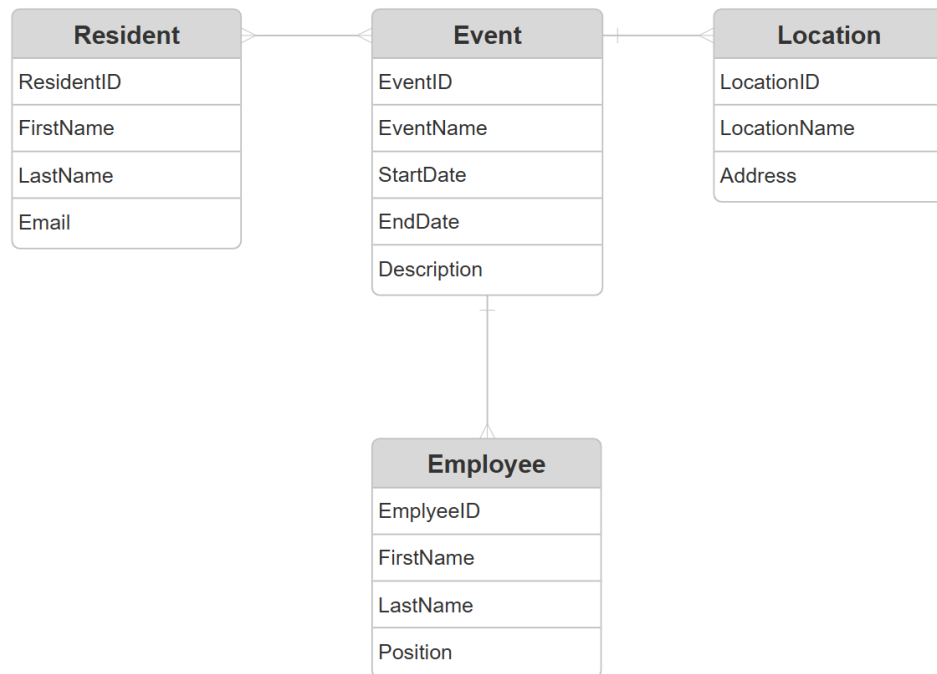
Resident

- Attributes

  - ResidentID (Primary Key)

  - FirstName

  - LastName

  - Email

Cardinality

  - Event - Employee: One to many

  - Event - Location: One to many

  - Resident - Event : Many to many

(b)

Resident
ResidentID
FirstName
LastName
Email

Event
EventID
EventName
StartDate
EndDate
Description

Location
LocationID
LocationName
Address

Employee
EmplyeeID
FirstName
LastName
Position

https://www.smartdraw.com/entity-relationship-diagram/