Problem 3:

Data I would store in a DBMS versus operating system files: • Related Data • Structured Data • Well Defined Data

Data I would store in operating system files versus a DBMS: • Unstructured Data • Arbitrary Data • Unrelated Data • General Data

Advantages of a DBMS: • Consistent • Durable writing/append to data • Keeps data structured • Fewer Privacy risks
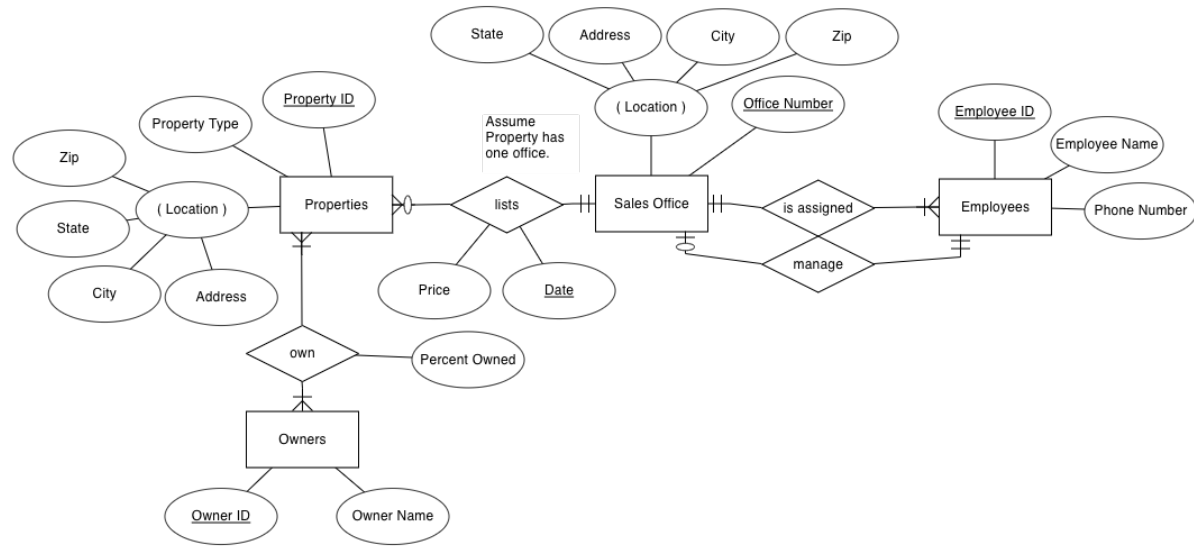
Disadvantages of DBMS: • Expensive to maintain and get • Require sophisticated protocols to implement reliable storage. • Size • Needs more overhead to maintain

Advantages of operating system file storage: • Cheaper, less overhead required • Better for data which does not require the extra guarantees provided by a DBMS such as privacy. • Increased data retrieval techniques due to not being restricted by a DBMS.

Disadvantages of operating system file storage: • Less Durability (file systems can change easily) • No redundancy control • Data is isolated and lacks multiple user interfaces • Only coordinates physical access

Zip

Property Type

State

Property ID

(Location)

City

Address

Properties

State

Address

City

Zip

(Location)

Office Number

Assume Property has one office.

lists

Price

Date

Sales Office

Employee ID

Employee Name

is assigned

Employees

Phone Number

manage

own

Percent Owned

Owners

Owner ID

Owner Name

Assume a research facility has at least 1 chemist.

Description · Project Number · Start Date

Project — works on — Chemists

leads

assigned to

Employee ID · Name · Rank · Email

works at — Research Facility

Type · Laboratory · Building Name · Room Number · Capacity

(Equpment) — borrow — Stockroom

Cost · Serial Number · Description · Return Date · Checkout Date