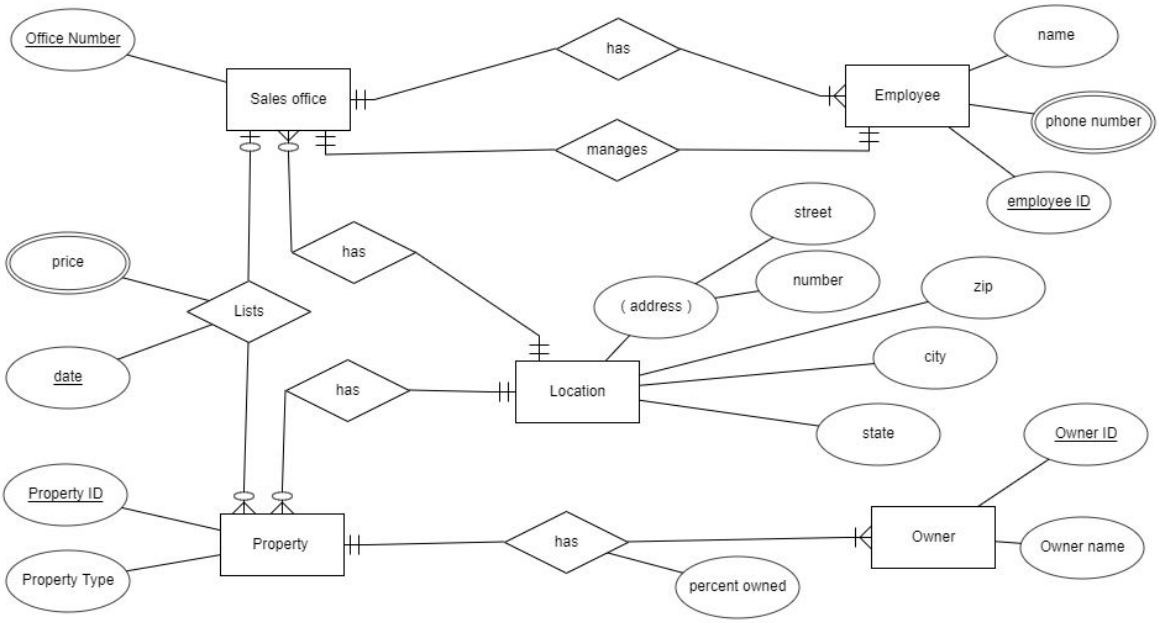
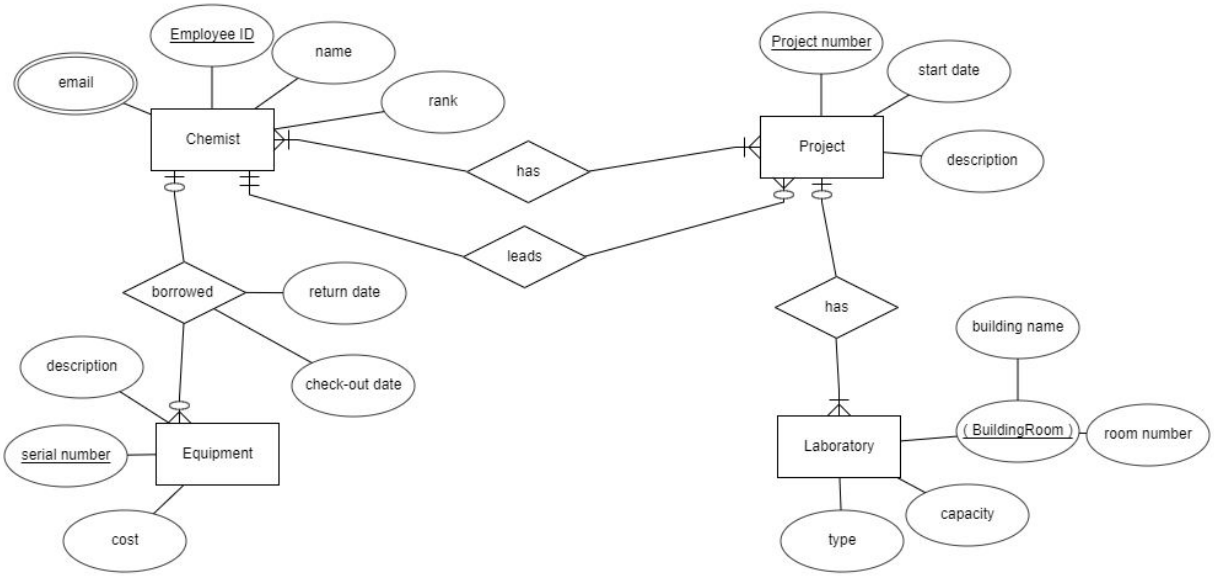
HW 1 - Cameron McCawley

Problem 1 assumptions:
Employees could have more than one phone number



Problem 2 assumptions:
A piece of equipment can only be checked-out by one chemist at a time
A chemist could have more than one email



Problem 3:

Some reasons why you would want to use a DBMS instead of flat files in an OS includes privacy, limited access equals more protected. Also speed, since DBMS stores data in a way that gives very fast response times. You would also want to use a DBMS for easy recovery since it also manages backups. You also get data independence, so your data is completely independent from the application storing it. Databases are used when you need to show relationships between data, whereas if you just want to store simple data that doesn't have a relationship you could store that in a flat file. The advantages of this would be ease of access, and it will be managed by the OS rather than an application. Some examples of when to use a DBMS would be linking accounts and names to different branches of a business. You might also want to show relationships between employees and their projects, which would be something that could be stored in a DBMS. Some examples of when to use flat files would be if you just need to store appointment times for a doctor, or if you need to store scientific data such as a recording of grass length throughout the year. These things would be better suited for an excel spreadsheet or a non-relational DB rather than needing to managed in a full on DBMS.