CH 1. 1-5 CH2 1-7, 9,10,14

1.1: 7 Records, 5 fields per record

1.2: The is no city field so you would have to parse the city out of the address which can sometimes be problematic depending on formatting. If the MANAGER\_ADDRESS field is broken up into Street Address, City, State, and Zip fields then it would make it easier to sort based on location

1.3: To produce those listings the MANAGER\_ADDRESS field should be broken up into Street Address, City, State, and Zip fields, The PROJECT\_MANAGER field should be split into a last name and first name field. I would keep the MANAGER\_PHONE field as it is, and just add an Area Code field, that way it is possible to sort based on area code, but looking up a phone number is still just one field

1.4: Holly B. Parker and George F Dorts both appear in the table multiple times. This may cause issues in the future if any information needs to be changed, it must be changed multiple times, and if that is not caught it will lead to inaccurate data.

1.5: People are repeated more than once which may cause issues when updating information, It looks like the job code and charge hours are supposed to be directly related on a project, for example all people with the code CT charge 60.00 on project Hurricane, however on the Satellite project, there are two different charge hours, one is just the transposition of the numbers in the other, which makes me think there was a mistake when entering the data, which will definitely cause problems down the line. In my opinion, the PROJ\_NAME and JOB\_CHG\_HOUR fields are unnecessary and just provide another chance for data to be inaccurate. The same could potentially be said about the EMP\_NAME and EMP\_PHONE fields in this table.

2.1: An Agent may Represent many Customers, but each Customer only has one Agent.

2.2: 

2.3 :



2.6 Course has a 1:M (one-to-many) relationship with class. Since a class can have many students, and each student may take many classes, there is a M:N (Many-to-Many) relationship between the two that is implemented with the enroll object . So the Business Relationships are:

Each COURSE generates many CLASSes, but each class is for a single course.

A CLASS may ENROLL many STUDENTS, and each STUDENT may ENROLL in many CLASSes

2.7 

2.9a. Each PATIENT can have several ORDERs.

each ORDER can contain one or more MEDICATIONS.

2.10a

Table PAINTER with the fields painter\_id, first\_name, last\_name, phone\_number, street\_address, city, state, and email

Table GALLERY with the fields gallery\_id, name, phone\_number, street\_address, city, state, email, and point\_of\_contact

Table PAINTING with the fields painting\_id, name, year, medium, short\_description, price, painter\_id, and gallery\_id

2.10b The painter and gallery tables would be linked through the PAINTING table which contains the painter\_id of the painter who painted it, and the gallery\_id where the painting is currently located, essentially creating a M:N relationship between painter and gallery. Each PAINTER can exhibit a PAINTING in multiple GALLERYs, and each GALLERY can display PAINTINGS by multiple PAINTERs.

2.14

