

Homework 2
CMSC 362
Due: 2/13/2017

Name: _____

Do exercises 2.3.1, 2.3.2, 3.2.1 and 3.3.1a-c, then solve the problem on the back of this worksheet.

2.3.1a

2.3.1b

2.3.1c

2.3.1d

2.3.1e

2.3.1f

2.3.2a

2.3.2b

2.3.2c

2.3.2d

2.3.2e

2.3.2f

3.2.1a

3.2.1b

3.2.1c

3.3.1a

3.3.1b

3.3.1c

Now, consider the database described below which might be used by a scientific society to organize meetings about topics. The organization is divided into member groups by subject. Members can belong to more than one subject group. Each subject holds meetings about topics. Because not everyone fits in a single room, these meetings are divided into sections. Both sections meet on the same day and have the same topics.

You may assume that:

“Name” is the primary key of the “members” table.

“Subject” and “Section number” together make up a primary key for the “sections” table.

“Subject” and “Date” together make up the primary key of the “meetings” table.

The “difficulty of topic” field indicates what at grade level introduction of the topic is appropriate.

The “next meeting” is always the same for both sections of a subject.

Members

Name	Date Joined	Interests
John Smith	10/20/09	Biology, Chemistry
John Adams	05/23/17	Chemistry, Mathematics
Susan Smith	10/20/09	Computer Science, Astrology, Phrenology

Sections

Subject	Section number	Next Meeting
Biology	1	02/27/2014
Biology	2	02/27/2014
Chemistry	1	02/28/2014
Mathematics	1	03/01/2014

Meetings

Subject	Date	Topics	Difficulty of Topic
Biology	02/27/2014	Fish	3
Biology	03/12/2014	Ion channels	11
Chemistry	02/28/2014	Ion channels	11
Chemistry	03/01/2014	Electrons	8

1. Which columns of which tables violate 1NF (you may assume dates are atomic)?

2. Why isn't this database in second normal form?

3. Why does the “meetings” table violate third normal form?

4. Normalize the database so that it satisfies 3NF. Give the normalized tables (including their data) below: