FrauenLoop
digital literacy for residents & newcomers

Database intro, management & analysis - Tuesday 2/14/2017

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Lesson plan:

6:00 p.m. - 6:15 p.m. everyone is arriving, and people are meeting for the first time.

6:15 p.m. - ~6:30 p.m. - introductions of all of the mentors with each mentor giving a quick background about themselves to break the ice.

6:30 p.m. - 7:00 p.m. - Start introducing data modeling in a structured way. Introduce data tables as a way to store data as in the idea of excel. Start with the example of an address book. Have students create an address book table which they can fill out. There is a natural extension here for phone numbers which is a great segue for the next section.

7:00 p.m. - 7:30 p.m. - Start introducing the idea of multiple tables which have relationships between them. This time with the addition of different books that they own as a second table. This also introduces the idea of dimension tables through the 'genre' of a book. The objective here is to be able to, entirely on paper, set up a dataset which will be used for a book swap.

7:30 p.m. - 7:45 p.m. - Break time

7:45 p.m. - 8:15 p.m. - Introduce the exercise: divide up into small teams to set up a dataset, again, entirely on paper, where they set up a library. So, they have people that have books which they are willing to lend and people who have books that they want to borrow. They should set up the data model necessary to do that. The goal is to have a fully fledged data model which lets them do everything. Stretch goal: add the tables necessary to persist things like 'lost' and 'damaged' books, as well as introducing the concept of 'late fines'.

8:15 p.m. - 9:00 p.m. - Break out for work on the assignment in smaller groups, we can walk around and see if they have any questions.

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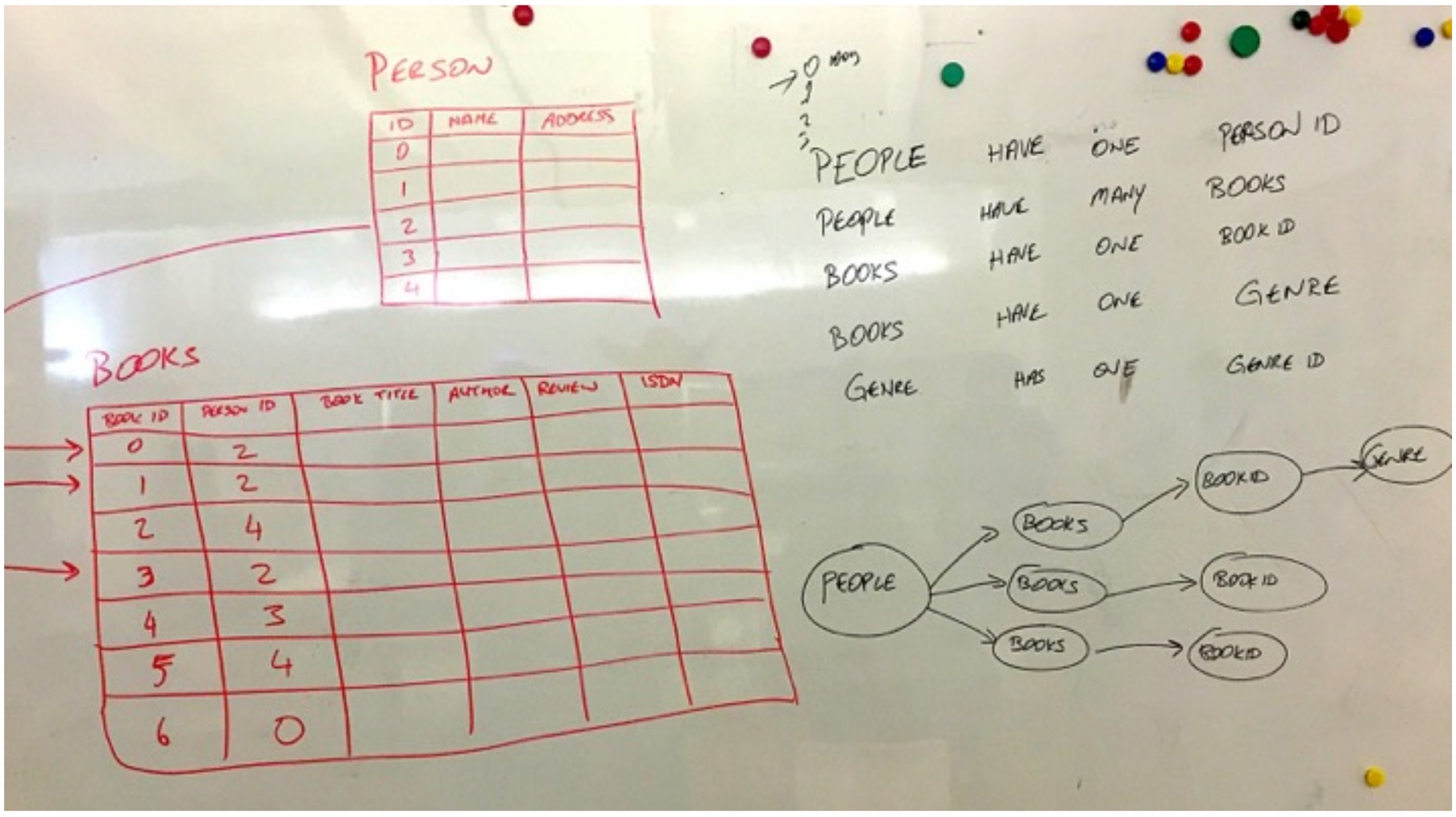
Class Material

1. Concept of a database
2. Relational tables and how to tie them together
3. Database design, 1:1 vs. 1:N data relationships
4. Multiple table product development (the building out of a lending library)



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Sample Database Schemas - 1/3

PEOPLE ADDRESS BOOK

ID	NAME	SURNAME	B-DAY	NATIONALITY
0	KATE	ORGILL	11.01.90	GERMAN
1	JOHN	SMITH	22.10.87	UKRAINIAN
2	DIETER	MÜLLER	07.06.50	AUSTRIAN
3	KAROLINA	STEC	17.03.77	POLISH

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Sample Database Schemas - 2/3

BOOK'S LIBRARY

ID BOOK	OWNER ID	TITLE	YEAR	AUTHOR		LANGUAGE	GENRE
				NAME	SURNAME		
0	1	"CATCH 22"	1999	JOHN	HELLER	ENGLISH	
1	0	"1984"	2003	JOHN	ORWELL	GERMAN	
2	2	"ANIMAL FARM"	2000	JOHN	ORWELL	POLISH	
3	3	"QUO VADIS"	1970	HENRYK	SIENKIEWICZ	SLOVENIAN	
4	0	DIE LEIDEN DES JUNGEN WERTERS	1930	JOHAN WOLFGANG	GOETHE	GERMAN	

1 to 1 relationship

1 to many - break it to another table

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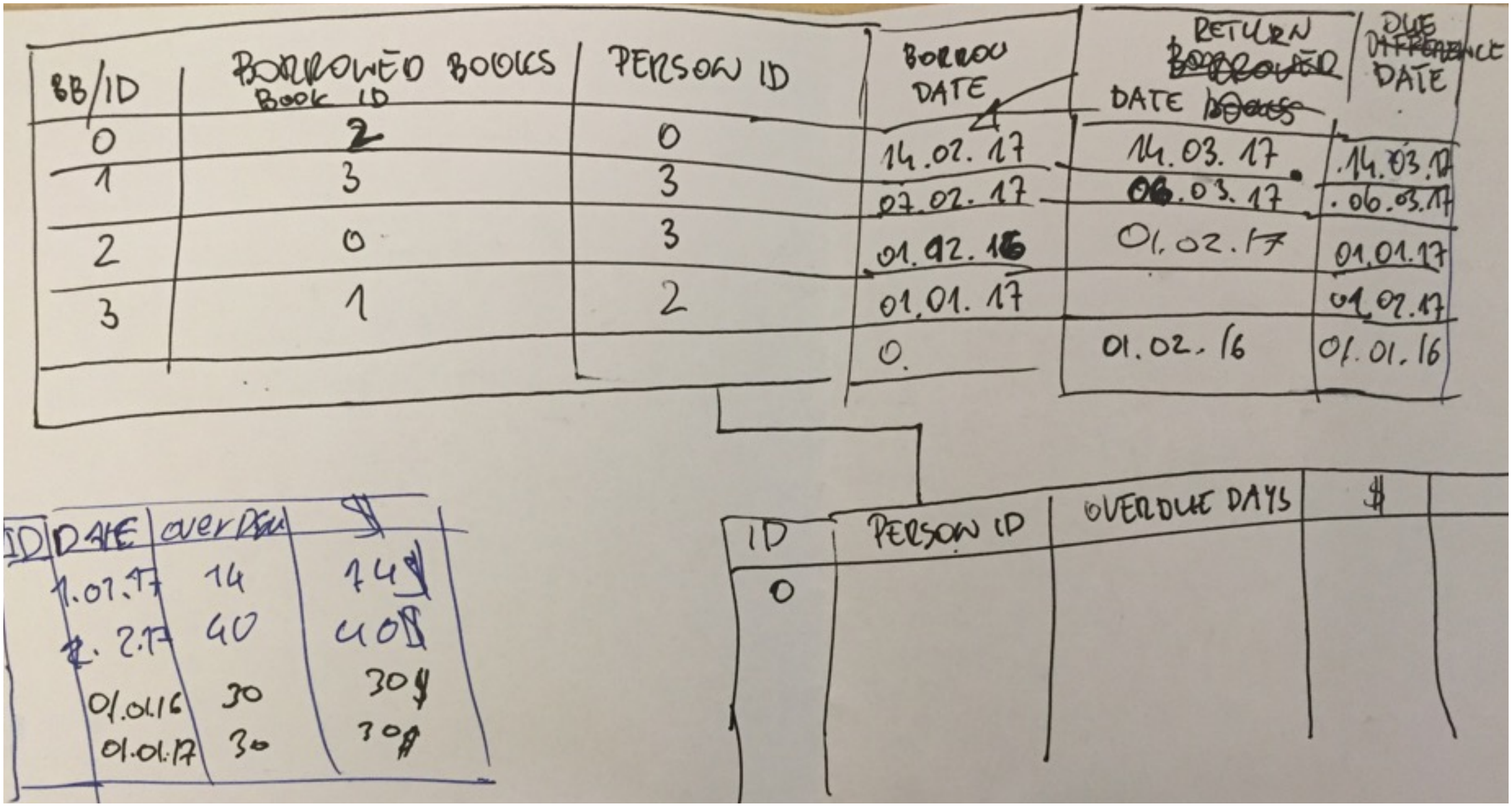
Sample Database Schemas - 3/3



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Summary/End of class status:

Next is to actually get the students experience with building these tables out into software. This will involve installing and running a SQL GUI and creating the library systems that they described in this class.

In the next class we can bring up the following concepts:

1. Field "types" - classifying fields into types of data that they store > int, string, date, etc.
2. "create table" statements
3. "insert into" statements

Students should be able to implement the libraries that they made into databases they create in MySQL.