Carmon Family Book Database
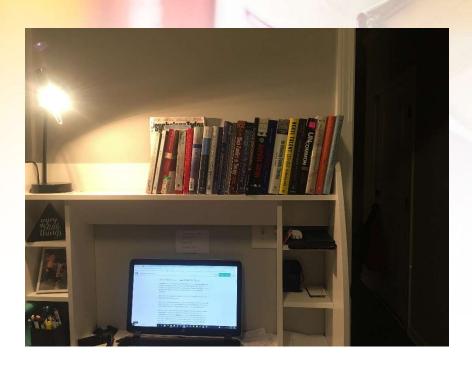## Tia Carmon
April 22, 2019

- Books everywhere!

- Difficult to know where to find a book

- Borrowed books get lost in the mix

- Lost books ➡ library fines

Solution
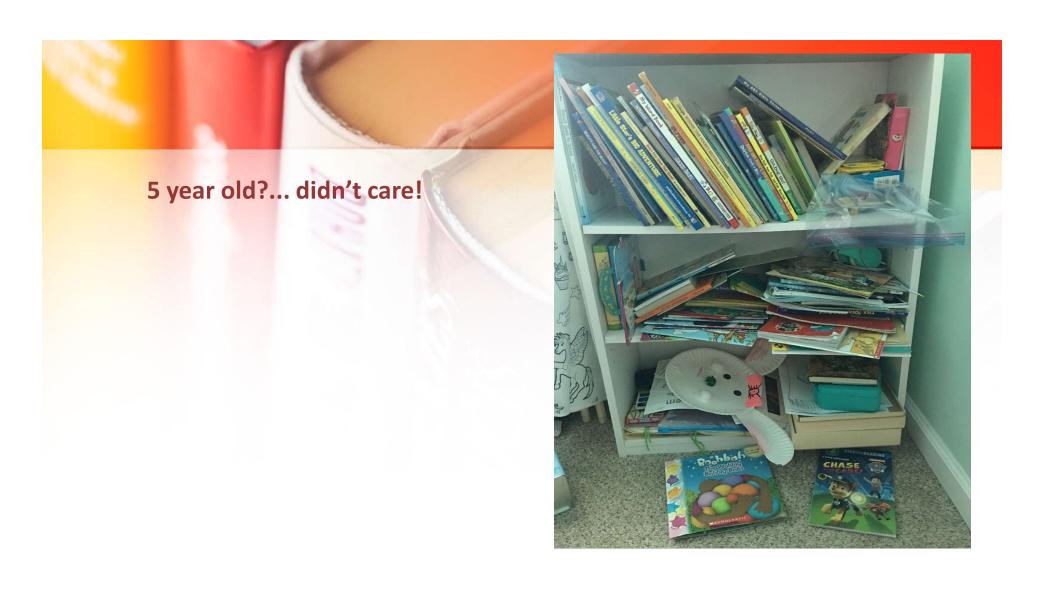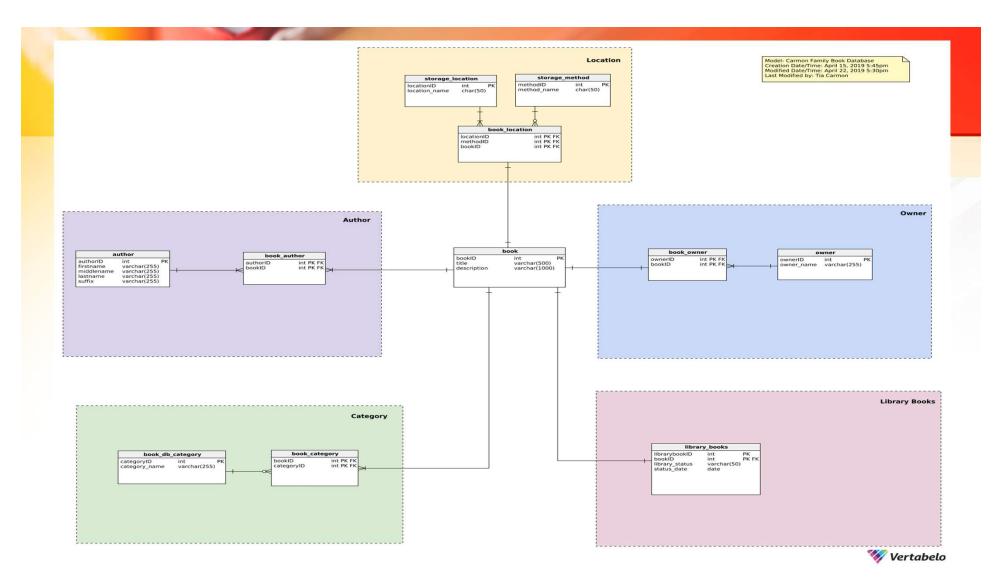

- Help manage home library

- Easily find books

- Return library books on time

User Requirements

- Did we return X book to the library?
- Where is X book?
- Who is the owner of X book?
- How many books are stored in X location?
- Who has borrowed library books?
- When are the library books due?

5 year old?... didn't care!

Location

storage_location
locationID	int	PK
location_name	char(50)	

storage_method
methodID	int	PK
method_name	char(50)	

book_location
locationID	int PK FK
methodID	int PK FK
bookID	int PK FK

Author

author
authorID	int	PK
firstname	varchar(255)	
middlename	varchar(255)	
lastname	varchar(255)	
suffix	varchar(255)	

book_author
authorID	int PK FK
bookID	int PK FK

book
bookID	int	PK
title	varchar(500)	
description	varchar(1000)	

Owner

book_owner
ownerID	int PK FK
bookID	int PK FK

owner
ownerID	int	PK
owner_name	varchar(255)	

Category

book_db_category
categoryID	int	PK
category_name	varchar(255)	

book_category
bookID	int PK FK
categoryID	int PK FK

Library Books

library_books
librarybookID	int	PK
bookID	int	PK FK
library_status	varchar(50)	
status_date	date	

Vertabelo

Implementation details

- Normalization
  - 11 tables

- ***-- Create Table: book***
CREATE TABLE book (
   bookID int NOT NULL,
   title varchar(500) NOT NULL,
   description varchar(1000),
     CONSTRAINT pk_book PRIMARY KEY
(bookID));

Implementation details – adding foreign keys

- *-- Alter table: book_category*

ALTER TABLE book_category

ADD CONSTRAINT fk_book_category_book_db_category

FOREIGN KEY book_category_book_db_category (categoryID)

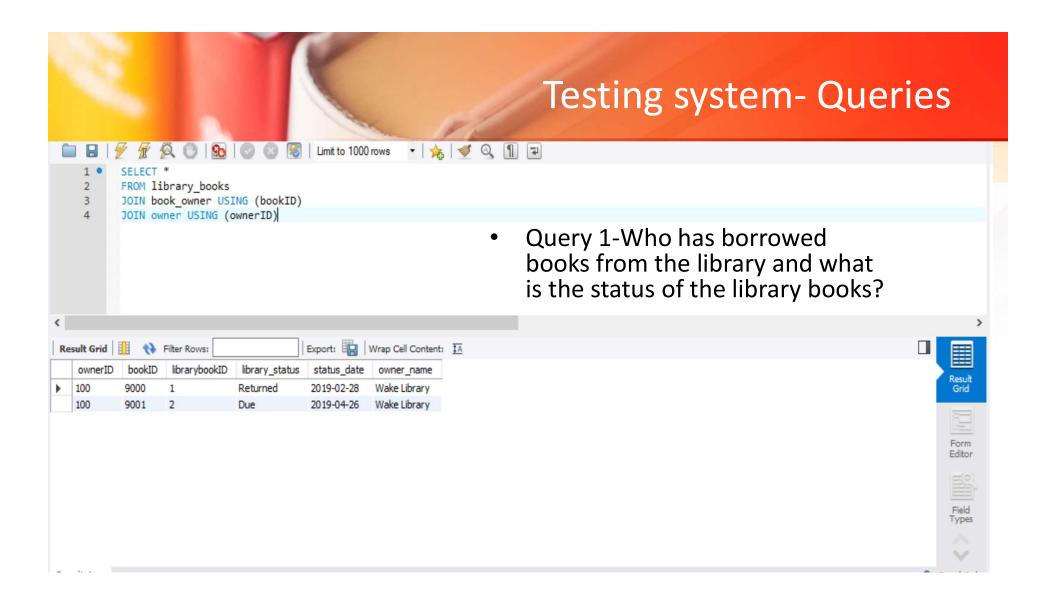REFERENCES book_db_category (categoryID);

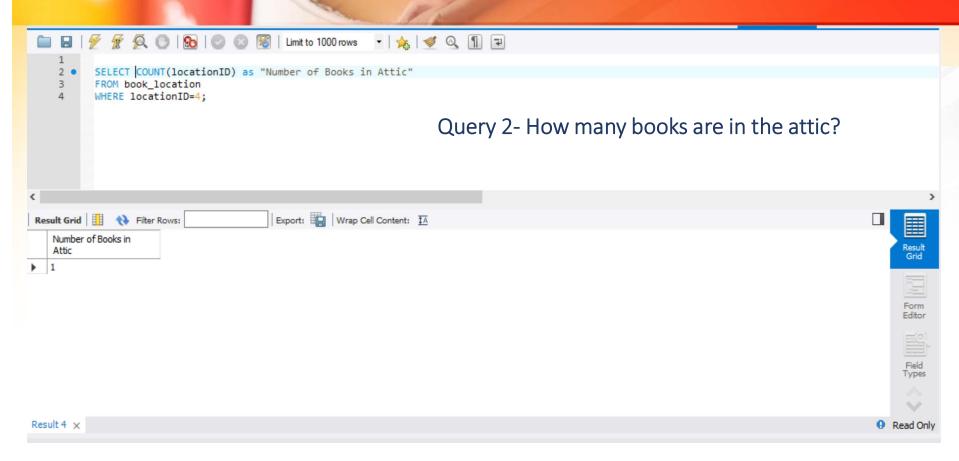# Implementation details – Inserting data

- *-- Add data to table: book*

INSERT INTO book VALUES ('0001', 'Biscuit Goes to School', 'Dog follows girl to school');

INSERT INTO book VALUES ('9001', 'Finish', 'Give yourself the gift of done');

INSERT INTO book VALUES ('0002', 'Way of the Warrior', 'From wimpy to warrior');

```
1 ● SELECT *
2   FROM library_books
3   JOIN book_owner USING (bookID)
4   JOIN owner USING (ownerID)
```

- Query 1-Who has borrowed books from the library and what is the status of the library books?

ownerID	bookID	librarybookID	library_status	status_date	owner_name
100	9000	1	Returned	2019-02-28	Wake Library
100	9001	2	Due	2019-04-26	Wake Library

Testing system- Queries & Reports

```
1
2 ● SELECT COUNT(locationID) as "Number of Books in Attic"
3   FROM book_location
4   WHERE locationID=4;
```

Query 2- How many books are in the attic?

Result Grid | Filter Rows: | Export: | Wrap Cell Content: $\underline{I}$A

Number of Books in Attic
1

Result Grid

Form Editor

Field Types

Result 4 ✕

❶ Read Only

Problem Solved!

- Able to locate books by querying the database

- Able to retrieve information related to due dates for library books

- Able to determine if a book was returned to the library

- Able to keep track of how many books are in each location

QUESTIONS?