CS 364 Spring 2016

SQL 5
Library/Copy/Book/Author

- CREATE TABLE Author(aid int primary key, first TEXT, last TEXT);
- CREATE TABLE Book(booknum int primary key, title TEXT, pages int);
- CREATE TABLE Writes(aid int references Author(aid), booknum int references Book(booknum), percent int, primary key(aid, booknum));
- CREATE TABLE Copy(copynum int primary key, booknum int not null, price decimal(8,2), foreign key (booknum) references Book(booknum));
- create table Library(libnum integer primary key, libname text, capacity integer);
SQL Summary

- Create table
- Drop table
- Alter table
- Insert
- Delete
- Update
- Primary key
- Foreign key
- Select
- Aggregate functions
  - count, sum, avg, min, max
- Coalesce
- Natural join
- Natural left join
- Join on
- Left join
- Relational operators
  - <, <=, =, !=, >=, >
- Boolean operators
  - and, or, not
- Group by
- Having
- In
- Exists
Practice Problems

• Add a libnum column to the Copy table
• In copy libnum is a foreign key referencing Library
• The libnum of a copy represents the library that houses the copy
Practice Problems

• Find the number of copies of each book with a cost greater than 30.00. The result should be tuples of the form (booknum, title, number of copies with a price greater than 30.00)
• Find the length of the longest book
• Find the name of the author who wrote the longest book
• Find the name of the author who wrote the most pages
• Find the highest price copy of each book that has at least one copy. The result should tuples of the form (booknum, title, copynum)
Practice Problems

• Find the libnum and libname of libraries that house a copy of a book written by Anton Chekhov
• For each author find the average price of copies of books written by the author
• Find titles of books that have more than 20 copies
• Find titles of books that have copies housed in more than 20 libraries
• Find the unused capacity for each library
• Find the booknum and title of books that have copies in every library
• Find the aid and name of authors with copies in every library