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CS 340 – 400
Final Project Queries
Due 3/19/2017

Table Creation Queries:

```
CREATE TABLE author (
id int(11) NOT NULL AUTO_INCREMENT,
fname varchar(255) NOT NULL,
lname varchar(255) NOT NULL,
PRIMARY KEY (id),
UNIQUE KEY author_name (fname, lname)
) ENGINE=InnoDB AUTO_INCREMENT=17 DEFAULT CHARSET=latin1;


CREATE TABLE genre (
id int(11) NOT NULL AUTO_INCREMENT,
genre_name varchar(255) NOT NULL,
PRIMARY KEY (id),
UNIQUE KEY genre_name (genre_name)
) ENGINE=InnoDB AUTO_INCREMENT=56 DEFAULT CHARSET=latin1;


CREATE TABLE location (
id int(11) NOT NULL AUTO_INCREMENT,
location_name varchar(255) NOT NULL,
PRIMARY KEY (id),
UNIQUE KEY (location_name)
) ENGINE=InnoDB AUTO_INCREMENT=600 DEFAULT CHARSET=latin1;


CREATE TABLE book (
id int(11) NOT NULL AUTO_INCREMENT,
title varchar(255) NOT NULL,
pages int(11) DEFAULT NULL,
aid int(11) NOT NULL,
gid int(11) NOT NULL,
lid int(11) NOT NULL,
PRIMARY KEY (id),
KEY aid (aid), KEY gid (gid), KEY lid (lid),
UNIQUE KEY (title, aid),
CONSTRAINT author_ibfk_1 FOREIGN KEY (aid) REFERENCES author (id),
CONSTRAINT genre_ibfk_2 FOREIGN KEY (gid) REFERENCES genre (id),
CONSTRAINT location_ibfk_3 FOREIGN KEY (lid) REFERENCES location (id)
) ENGINE=InnoDB AUTO_INCREMENT=76 DEFAULT CHARSET=latin1;
```

```sql
CREATE TABLE reader (
id int(11) NOT NULL AUTO_INCREMENT,
fname varchar(255) NOT NULL,
lname varchar(255) DEFAULT NULL,
PRIMARY KEY (id),
UNIQUE KEY reader_name (fname, lname)
) ENGINE=InnoDB AUTO_INCREMENT=14 DEFAULT CHARSET=latin1;


CREATE TABLE has_read (
rid int(11) NOT NULL,
bid int(11) NOT NULL,
PRIMARY KEY  has_read (rid, bid),
CONSTRAINT has_read_reader_ibfk_1 FOREIGN KEY (rid) REFERENCES reader (id),
CONSTRAINT has_read_book_ibfk_2 FOREIGN KEY (bid) REFERENCES book (id)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;


CREATE TABLE will_read (
rid int(11) NOT NULL,
bid int(11) NOT NULL,
priority int(11) DEFAULT NULL,
PRIMARY KEY will_read (rid, bid),
CONSTRAINT will_read_reader_ibfk_1 FOREIGN KEY (rid) REFERENCES reader (id),
CONSTRAINT will_read_book_ibfk_2 FOREIGN KEY (bid) REFERENCES book (id)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

Selection Queries:

(In order per implementation in book_interface.php)

Display all books, ordered by title, along with author, number of pages, genre, and location of each book. Concatenates author first name and last name into one field

      SELECT book.id, book.title, book.pages, concat(author.fname, ' ', author.lname) AS Author,
          genre.genre_name, location.location_name FROM book
          INNER JOIN author ON book.aid = author.id
          INNER JOIN genre ON book.gid = genre.id
          INNER JOIN location ON book.lid = location.id
          ORDER BY book.title

Display all books ordered by author – author full name and title:

      SELECT concat(author.fname, ' ', author.lname) AS Author, book.title FROM book
          INNER JOIN author ON book.aid = author.id
          ORDER BY author.lname, book.title

Display all authors ordered by last name– id, first name, and last name:

      SELECT author.id, author.fname, author.lname FROM author ORDER BY author.lname

Display all genres ordered by genre – id and genre name:

      SELECT genre.id, genre.genre_name FROM genre ORDER BY genre.genre_name

Display all locations ordered by location id – id and location name:

      SELECT location.id, location.location_name FROM location ORDER BY location.id

Display all readers ordered by reader id – id, first name, and last name:

      SELECT reader.id, reader.fname, reader.lname FROM reader ORDER BY reader.id

Display all books reader have read ordered by reader id – reader full name and book title. Concatenates reader first name and last name into one field

      SELECT concat(reader.fname, ' ', reader.lname) as Reader, book.title FROM has_read
          INNER JOIN reader ON has_read.rid = reader.id
          INNER JOIN book ON has_read.bid = book.id
          ORDER BY has_read.rid

Display all books reader will read ordered by reader id – reader full name, book title, and priority. Concatenates reader first name and last name into one field:

      SELECT concat(reader.fname, ' ', reader.lname) AS Reader, book.title, priority FROM will_read
          INNER JOIN reader ON will_read.rid = reader.id

```
                INNER JOIN book ON will_read.bid = book.id
                ORDER BY will_read.rid
```

Insert Queries

(Insert statements for each table. All ids are automatically incremented and populated per table creation queries.)

Add new location:

```
        INSERT INTO location(location.location_name) VALUES ( [location name] )
```

Add new author:

```
        INSERT INTO author(fname, lname) VALUES ( [author first name], [author last name] )
```

Add new genre:

```
        INSERT INTO genre(genre_name) VALUES ( [genre name] )
```

Add new book:

```
        INSERT INTO book(title, pages, aid, gid, lid) VALUES ( [title], [number of pages], [author id], [genre id],
        [location id] )
```

Add new reader:

```
        INSERT INTO reader(fname, lname) VALUES ( [reader first name], [reader last name] )
```

Add new row to has_read:

```
        INSERT INTO has_read(rid, bid) VALUES ( [reader id], [book id] )
```

Add new row to will_read:

```
        INSERT INTO will_read(rid, bid, priority) VALUES ( [reader id], [book id], [priority] )
```

Search Query

Search for books by location. Returns book title, author first name and last name concatenated into one field, and location name:

```
SELECT book.title, concat(author.fname, ' ', author.lname), AS Author, location.location_name
        FROM book
        INNER JOIN author ON book.aid = author.id
        INNER JOIN location on book.lid = location.id
        WHERE location.id = [selected location.id]
```

Update Query

Update book location:

```
UPDATE book SET lid = [updated location id] WHERE id= [current book id]
```