MYSQL Instructions:

!! Change USERNAME and PASSWORD in the following commands
!! to your username and password

** Login to db server

ssh USERNAME@classes.csc.lsu.edu

** To initialize your database

cd /classes/cs2700/cs2700_zha/db_files
mysql -p USERNAME < world.sql
cd employees_db
mysql -p USERNAME < employees.sql

** To launch interactive console

mysql -p USERNAME

Exercise on "world" database:

1. Find the head of state for the country "Tokelau".
2. Find all the cities whose population is larger than 5M.
3. Find all the countries whose population is larger than 100M.
4. Find all the surface area size of United State.
5. Find the country that has maximum GNP.
6. Find which country the city "Arvada" is in.
7. Count the number of cities each country has.
8. Count the number of cities in "North America".
9. Count the number of people who speaks "English". ("French", "Chinese")
10. How many languages are spoken in "Tanzania"
11. Assuming the surface area of a continent is the sum of the areas of the countries in the continent, find the total surface area of "Asia".
12. True of false: the country that has the most city speaks the most languages.

Tables in the “world" database:

```
CREATE TABLE `City` (
  `ID` int(11) NOT NULL AUTO_INCREMENT,
  `Name` char(35) NOT NULL DEFAULT '',
  `CountryCode` char(3) NOT NULL DEFAULT '',
  `District` char(20) NOT NULL DEFAULT '',
  `Population` int(11) NOT NULL DEFAULT '0',
  PRIMARY KEY (`ID`)
);

CREATE TABLE `Country` (
  `Code` char(3) NOT NULL DEFAULT '',
  `Name` char(52) NOT NULL DEFAULT '',
  `Continent` enum('Asia','Europe','North
America','Africa','Oceania','Antarctica','South America') NOT NULL
DEFAULT 'Asia',
  `Region` char(26) NOT NULL DEFAULT '',
  `SurfaceArea` float(10,2) NOT NULL DEFAULT '0.00',
  `IndepYear` smallint(6) DEFAULT NULL,
  `Population` int(11) NOT NULL DEFAULT '0',
  `LifeExpectancy` float(3,1) DEFAULT NULL,
  `GNP` float(10,2) DEFAULT NULL,
  `GNPOld` float(10,2) DEFAULT NULL,
  `LocalName` char(45) NOT NULL DEFAULT '',
  `GovernmentForm` char(45) NOT NULL DEFAULT '',
  `HeadOfState` char(60) DEFAULT NULL,
  `Capital` int(11) DEFAULT NULL,
  `Code2` char(2) NOT NULL DEFAULT '',
  PRIMARY KEY (`Code`)
);


CREATE TABLE `CountryLanguage` (
  `CountryCode` char(3) NOT NULL DEFAULT '',
  `Language` char(30) NOT NULL DEFAULT '',
  `IsOfficial` enum('T','F') NOT NULL DEFAULT 'F',
  `Percentage` float(4,1) NOT NULL DEFAULT '0.0',
  PRIMARY KEY (`CountryCode`,`Language`)
);
```

Tables in the “employees" database

```
CREATE TABLE employees (
    emp_no      INT             NOT NULL,
    birth_date  DATE            NOT NULL,
    first_name  VARCHAR(14)     NOT NULL,
    last_name   VARCHAR(16)     NOT NULL,
    gender      ENUM ('M','F')  NOT NULL,
    hire_date   DATE            NOT NULL,
    PRIMARY KEY (emp_no)
);
```

```
CREATE TABLE departments (
    dept_no     CHAR(4)         NOT NULL,
    dept_name   VARCHAR(40)     NOT NULL,
    PRIMARY KEY (dept_no),
    UNIQUE  KEY (dept_name)
);

CREATE TABLE dept_manager (
   dept_no      CHAR(4)         NOT NULL,
   emp_no       INT             NOT NULL,
   from_date    DATE            NOT NULL,
   to_date      DATE            NOT NULL,
   KEY         (emp_no),
   KEY         (dept_no),
   FOREIGN KEY (emp_no)  REFERENCES employees (emp_no)    ON DELETE
CASCADE,
   FOREIGN KEY (dept_no) REFERENCES departments (dept_no) ON DELETE
CASCADE,
   PRIMARY KEY (emp_no,dept_no)
);

CREATE TABLE dept_emp (
    emp_no      INT             NOT NULL,
    dept_no     CHAR(4)         NOT NULL,
    from_date   DATE            NOT NULL,
    to_date     DATE            NOT NULL,
    KEY         (emp_no),
    KEY         (dept_no),
    FOREIGN KEY (emp_no)  REFERENCES employees   (emp_no)  ON DELETE
CASCADE,
    FOREIGN KEY (dept_no) REFERENCES departments (dept_no) ON DELETE
CASCADE,
    PRIMARY KEY (emp_no,dept_no)
);

CREATE TABLE titles (
    emp_no      INT             NOT NULL,
    title       VARCHAR(50)     NOT NULL,
    from_date   DATE            NOT NULL,
    to_date     DATE,
    KEY         (emp_no),
    FOREIGN KEY (emp_no) REFERENCES employees (emp_no) ON DELETE
CASCADE,
    PRIMARY KEY (emp_no,title, from_date)
);

CREATE TABLE salaries (
    emp_no      INT             NOT NULL,
    salary      INT             NOT NULL,
    from_date   DATE            NOT NULL,
    to_date     DATE            NOT NULL,
    KEY         (emp_no),
    FOREIGN KEY (emp_no) REFERENCES employees (emp_no) ON DELETE
CASCADE,
    PRIMARY KEY (emp_no, from_date)
);
```