[[click here if you would like to open this page in its own window]](https://docs.google.com/document/d/1s-3YY8HkTyZFj3uih0ofHa_iysmkEg1TE6fQI2b1bS8/edit?usp=sharing)

# **SQL HW #3: DDL and DML SQL**

Devise the appropriate SQL queries for each of the requests below. To receive full credit your response must be a single SQL query. Include in your response both the query that you issued and the output that was returned. Be sure to include ONLY your final query and the resultant output. If you include parts of your initial attempts or extraneous output, you may lose points for doing so. Unless otherwise specified, all work \*must\* be done at the MySQL command prompt (ideally through PuTTY, because it allows you to copy and paste your input and output into your document). In other words, do NOT do your work in PHPMyAdmin unless specifically told to do so. If you have no idea what PHPMyAdmin is or what I am talking about, that’s perfectly fine. It is a graphical user interface for interacting with MySQL.

You may use ONLY the information supplied directly in the query itself and may not incorporate any information that you manually "look up" any information from the tables. For example, in question 11, you may not look up the current salary of the employee in question.

Where not otherwise specified, you may return all columns in a given query (i.e. you may use “SELECT \* …”)

NOTE that to receive full credit for the assignment you must NUMBER your responses accurately and eliminate any output except your final answer in terms of what you input and what the system output to you in response.

1. **Create a new database in your MySQL Server called “My\_BIS235”**

**INPUT**

**REATE DATABASE MY\_BIS235;**

**OUTPUT**

**Query OK, 1 row affected (0.00 sec)**

1. Create a table called “Employee” in your newly created My\_BIS235 database. You will need to store the following attributes:
   * First name (50 characters max)
   * Last name (75 characters max)
   * Middle initial
   * Home phone
   * ID Number (6 digits)
   * Home address (100 characters max)
   * Home state
   * Home city
   * Salary
   * Email (100 characters max)

**INPUT**

**CREATE TABLE Employee (**

**First\_Name CHAR(50) NOT NULL,**

**Last\_Name CHAR(75) NOT NULL,**

**Middle\_Initial CHAR(1),**

**Home\_Phone CHAR(12),**

**ID\_Number INT(6) PRIMARY KEY,**

**Home\_Address CHAR(100),**

**Home\_State CHAR(2),**

**Home\_City CHAR(35),**

**Salary INT(12),**

**Email CHAR(100));**

**OUTPUT**

**Query OK, 0 rows affected (0.01 sec)**

**Use common sense in choosing data types and sizes where not otherwise specified. Specify that ID number will be the primary key for the table. Make sure that null values are not allowed for either first or last name.**

1. **Create in your My\_BIS235 database a new table called Projects with two attributes: Project\_ID and Project\_Name. Make Project\_ID an auto-incrementing integer as well as the primary key for the table. Make Project\_Name varchar(250).**

**INPUT**

**CREATE TABLE Projects (**

**Project\_ID INT AUTO\_INCREMENT PRIMARY KEY,**

**Project\_Name varchar(250)**

**);**

**OUTPUT**

**Query OK, 0 rows affected (0.01 sec)**

1. Add the following records to the Projects table:
   * Project\_Name = “Alpha”
   * Project\_Name = “Beta”

Select \* from Projects. Describe what the DBMS has done with the Project\_ID attribute.

**INPUT**

**INSERT INTO Projects (Project\_Name)**

**VALUES ('Alpha'), ('Beta');**

**OUTPUT**

**+------------+--------------+**

**| Project\_ID | Project\_Name |**

**+------------+--------------+**

**| 1 | Alpha |**

**| 2 | Beta |**

**+------------+--------------+**

**DESCRIPTION**

**The DBMS auto increments each entry starting from 1.**

1. **Insert the following record into the Employee table:**
   * **First name : Brian**
   * **Last name: Finnegan**
   * **Middle initial: Q**
   * **Home phone: 215.670.9308**
   * **ID Number 345696**
   * **Home address : 1420 Pine St**
   * **Home state: PA**
   * **Home city: Philadelphia**
   * **Salary: $17,500**
   * **Email:** [**joeyjojo@shabadoo.com**](mailto:joeyjojo@shabadoo.com)

**Select \* from Employee to confirm your insertion. Include the output here.**

**INPUT**

**INSERT INTO Employee (**

**First\_Name,**

**Last\_Name,**

**Middle\_Initial,**

**Home\_Phone,**

**ID\_Number,**

**Home\_Address,**

**Home\_State,**

**Home\_City,**

**Salary,**

**Email)**

**VALUES (**

**'Brian',**

**'Finnegan',**

**'Q',**

**'215.670.9308',**

**345696,**

**'1420 Pine St',**

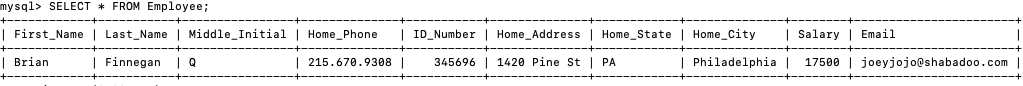
**'PA',**

**'Philadelphia',**

**17500,**

**'joeyjojo@shabadoo.com');**

**OUTPUT**

****

1. **Using PHP MyAdmin, insert a record with values of your own choosing into the Employee table.  
     
   *[Stop using PHPMyAdmin and switch back to the command terminal for the remainder of the questions]***
2. **You realize that your employee table needs to include zip code. Update the table to include a zip code field. Choose a sensible data type and size (you do not need to capture zip+4 information). Once you have made the change, describe your table to confirm it. Include the results here.**

**INPUT**

**ALTER TABLE Employee**

**ADD Zip\_Code INT (5);**

**OUTPUT** (DESCRIBE Employee; )

+----------------+-----------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------------+-----------+------+-----+---------+-------+

| First\_Name | char(50) | NO | | NULL | |

| Last\_Name | char(75) | NO | | NULL | |

| Middle\_Initial | char(1) | YES | | NULL | |

| Home\_Phone | char(12) | YES | | NULL | |

| ID\_Number | int(6) | NO | PRI | NULL | |

| Home\_Address | char(100) | YES | | NULL | |

| Home\_State | char(2) | YES | | NULL | |

| Home\_City | char(35) | YES | | NULL | |

| Salary | int(12) | YES | | NULL | |

| Email | char(100) | YES | | NULL | |

| Zip\_Code | int(5) | YES | | NULL | |

+----------------+-----------+------+-----+---------+-------+

1. **Remove the middle initial field from the Employee table.**

**INPUT**

**ALTER TABLE Employee**

**DROP COLUMN Middle\_Initial;**

**OUTPUT** (DESCRIBE Employee; )

+--------------+-----------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+--------------+-----------+------+-----+---------+-------+

| First\_Name | char(50) | NO | | NULL | |

| Last\_Name | char(75) | NO | | NULL | |

| Home\_Phone | char(12) | YES | | NULL | |

| ID\_Number | int(6) | NO | PRI | NULL | |

| Home\_Address | char(100) | YES | | NULL | |

| Home\_State | char(2) | YES | | NULL | |

| Home\_City | char(35) | YES | | NULL | |

| Salary | int(12) | YES | | NULL | |

| Email | char(100) | YES | | NULL | |

| Zip\_Code | int(5) | YES | | NULL | |

+--------------+-----------+------+-----+---------+-------+

1. **Change the name of the “Projects” table to “Secret\_Projects”.**

**INPUT**

**ALTER TABLE Projects**

**RENAME TO Secret\_Projects;**

**OUTPUT** (SHOW TABLES; )

+---------------------+

| Tables\_in\_MY\_BIS235 |

+---------------------+

| Employee |

| Secret\_Projects |

+---------------------+

1. **Change the salary of the employee whose ID number is 345696 to $175,000.**

**INPUT**

**UPDATE Employee**

**SET Salary = 175000**

**WHERE ID\_Number = 345696;**

**OUTPUT** (SELECT First\_Name, Last\_Name, SALARY \* FROM Employee; )

+------------+-----------+--------+

| First\_Name | Last\_Name | SALARY |

+------------+-----------+--------+

| Brian | Finnegan | 175000 |

+------------+-----------+--------+

1. **Give the employee you created in step 6 above a 50% raise.**

**INPUT**

SELECT First\_Name, Last\_Name, SALARY,0.50 as SalaryRaise,

SELECT SalaryRaise) \* SALARY + 30000 AS NewSalary

FROM Employee WHERE ID\_Number = 18293;

**OUTPUT**

+------------+-----------+--------+-------------+-----------+

| First\_Name | Last\_Name | SALARY | SalaryRaise | NewSalary |

+------------+-----------+--------+-------------+-----------+

| Morrese | Morrison | 30000 | 0.50 | 45000.00 |

+------------+-----------+--------+-------------+-----------+

**DESCRIPTION**

**The record that I entered into the PHP Admin portal is my self with a $30,000 salary. Calculation of a %50 percent raise would be 0.50 \* 30000 which equals $15,000. Add that on top of the base salary and the new salary is $45,000.**

1. **Delete all of the records from the “Secret\_Projects” table. (They are just too secret to even store in a database.)**

**INPUT**

**DELETE FROM Secret\_Projects;**

**OUTPUT**

**Query OK, 2 rows affected**

**DESCRIPTION**

**This query deletes both rows. Alpha and Beta Project. This is confirmed by the output saying “2 rows affected”.**

1. **Drop the “Secret\_Projects” table entirely from the database. (No one should even know that we have secret projects!)**

**INPUT**

**DROP Table Secret\_Projects**

**OUTPUT** (SHOW Tables; )

+---------------------+

| Tables\_in\_MY\_BIS235 |

+---------------------+

| Employee |

+---------------------+

1. **Times are tough for your company. Delete from the employee database anyone who makes more than $100,000.**

**INPUT**

**DELETE FROM Employee**

**WHERE Salary > 100000;**

**OUTPUT**

**Query OK, 1 row affected (0.00 sec)**

**DESCRIPTION**

**Due to only one record having a salary of over $100,000, only one row was deleted. The second record’s salary is below 100 so that record did not get deleted.**

1. **Alter the employee table that you created in question 2 above by dropping the current primary key and then adding first name AND last name together as a new primary key. (Recognizing while you do so that normally first and last name are NOT going to be sufficient to assure uniqueness across all records in the way that primary keys must do, but that in this case, for the sake of argument, they are.)**

**INPUT #1 (Dropping the Current Primary Key On The Employee Table)**

**ALTER TABLE Employee DROP PRIMARY KEY;**

**OUTPUT #1** (DESCRIBE Employee; )

+--------------+-----------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+--------------+-----------+------+-----+---------+-------+

| First\_Name | char(50) | NO | | NULL | |

| Last\_Name | char(75) | NO | | NULL | |

| Home\_Phone | char(12) | YES | | NULL | |

| ID\_Number | int(6) | NO | | NULL | |

| Home\_Address | char(100) | YES | | NULL | |

| Home\_State | char(2) | YES | | NULL | |

| Home\_City | char(35) | YES | | NULL | |

| Salary | int(12) | YES | | NULL | |

| Email | char(100) | YES | | NULL | |

| Zip\_Code | int(5) | YES | | NULL | |

+--------------+-----------+------+-----+---------+-------+

**DESCRIPTION #1**

**You can see from the above query that the initial Primary Key “ID\_Number”, was removed due to “PRI” not being listed in the Key column next to the “ID\_Number” row.**

**INPUT #2**

ALTER TABLE Employee

ADD PRIMARY KEY(First\_Name, Last\_Name);

**OUTPUT #2**

+--------------+-----------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+--------------+-----------+------+-----+---------+-------+

| First\_Name | char(50) | NO | PRI | NULL | |

| Last\_Name | char(75) | NO | PRI | NULL | |

| Home\_Phone | char(12) | YES | | NULL | |

| ID\_Number | int(6) | NO | | NULL | |

| Home\_Address | char(100) | YES | | NULL | |

| Home\_State | char(2) | YES | | NULL | |

| Home\_City | char(35) | YES | | NULL | |

| Salary | int(12) | YES | | NULL | |

| Email | char(100) | YES | | NULL | |

| Zip\_Code | int(5) | YES | | NULL | |

+--------------+-----------+------+-----+---------+-------+

**DESCRIPTION #2**

You can see from the above query that the Field “First\_Name” and “Last\_Name” are now concatenated Primary Keys due to both fields having the “PRI” listed next to them under the “Key” Column.