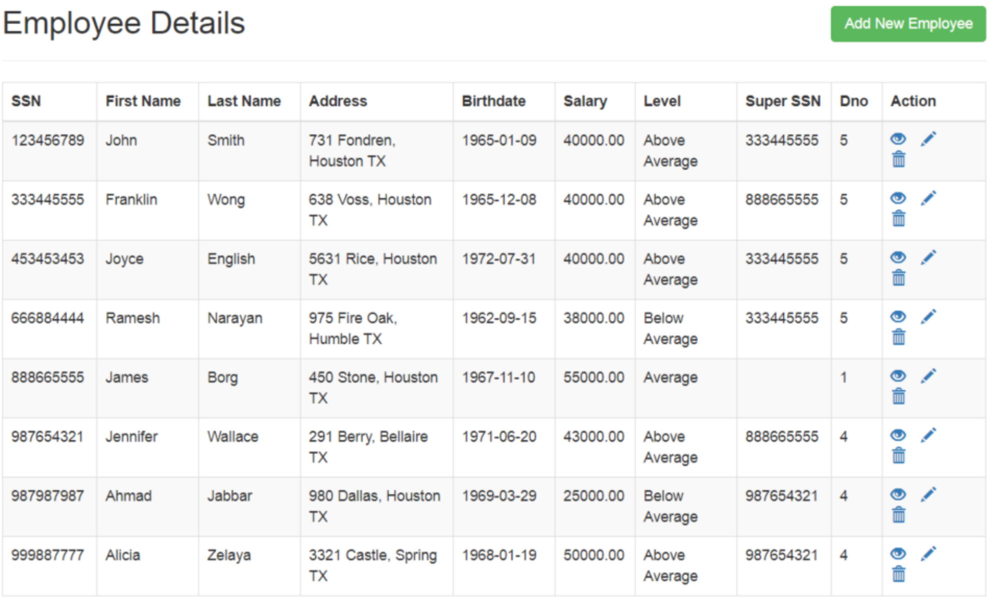
CS 340 – Program 1

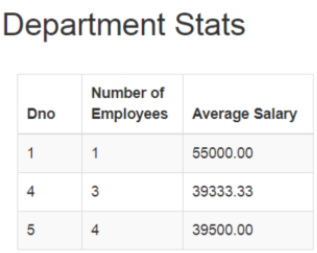
In this assignment you will be writing triggers, procedures and functions in MariaDB. You will use a web interface to view the results of various operations on the database. Follow the steps below to prepare for the assignment.

1) Download the P1_starter_code zip file from Canvas. After unzipping, folder contains php files for a web interface and a sql file that contains the Company database that we have been working on in class.
2) If you do not already have the Company database, import the company.sql tables.
3) Place the php files in a directory called cs340 that you create under your public_html directory on the flip server.
4) Change the others permissions on the files and directory to read and write (chmod 755).
5) You will need to modify the config.php file so that it will connect to MariaDB with your username and password. Change the two occurrences of 'cs340_username' and 'Your password' to the values you use to log onto phpMyAdmin.
6) Access your webpage at http://web.engr.oregonstate.edu/~username/cs340. Replace username with your onid username.
7) You should see the details for the EMPLOYEE table but not the Department Stats values since you have not created that table yet. You will also write a PayLevel function.



Employee Details

SSN	First Name	Last Name	Address	Birthdate	Salary	Level	Super SSN	Dno	Action
123456789	John	Smith	731 Fondren, Houston TX	1965-01-09	40000.00	Above Average	333445555	5	👁 ✏ 🗑
333445555	Franklin	Wong	638 Voss, Houston TX	1965-12-08	40000.00	Above Average	888665555	5	👁 ✏ 🗑
453453453	Joyce	English	5631 Rice, Houston TX	1972-07-31	40000.00	Above Average	333445555	5	👁 ✏ 🗑
666884444	Ramesh	Narayan	975 Fire Oak, Humble TX	1962-09-15	38000.00	Below Average	333445555	5	👁 ✏ 🗑
888665555	James	Borg	450 Stone, Houston TX	1967-11-10	55000.00	Average		1	👁 ✏ 🗑
987654321	Jennifer	Wallace	291 Berry, Bellaire TX	1971-06-20	43000.00	Above Average	888665555	4	👁 ✏ 🗑
987987987	Ahmad	Jabbar	980 Dallas, Houston TX	1969-03-29	25000.00	Below Average	987654321	4	👁 ✏ 🗑
999887777	Alicia	Zelaya	3321 Castle, Spring TX	1968-01-19	50000.00	Above Average	987654321	4	👁 ✏ 🗑



Department Stats

Dno	Number of Employees	Average Salary
1	1	55000.00
4	3	39333.33
5	4	39500.00

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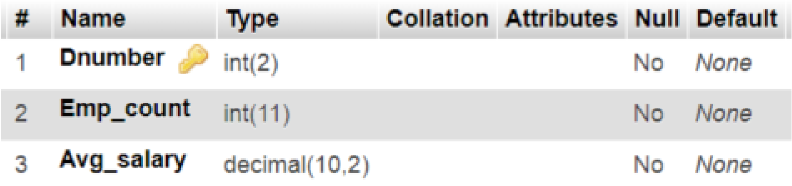
Assignment

1. Create the table **DEPT_STATS** as shown below:



#	Name	Type	Collation	Attributes	Null	Default
1	**Dnumber** 🔑	int(2)			No	*None*
2	**Emp_count**	int(11)			No	*None*
3	**Avg_salary**	decimal(10,2)			No	*None*

2. Write a procedure called InitDeptStats to initialize the values in the table.

3. Write triggers for the EMPLOYEE table that modify the DEPT_STATS table when rows are inserted, deleted or updated in the EMPLOYEE table.
    a. DELETEDeptStats :
    When rows are deleted from the EMPLOYEE table the Emp_Count and Avg_salary in the DEPT_STATS table must be changed accordingly.

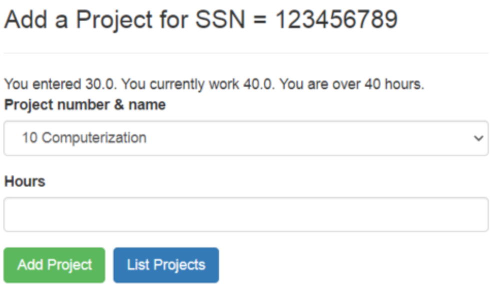
    b. INSERTDeptStats :
    When rows are inserted into the EMPLOYEE table the Emp_Count and Avg_salary in the DEPT_STATS table must be changed accordingly.

    c. UPDATEDeptStats:
    When rows are updated in the EMPLOYEE table the Emp_Count and Avg_salary must be updated accordingly.

    Test your triggers by inserting, updating and deleting from the EMPLOYEE table.

4. To view an employees projects click on the 👁 . The Add Project button inserts a new row into the WORKS_ON table after you enter the Project Number and Hours.

    Suppose that an EMPLOYEE can work at most a total of 40 hours on all projects they are assigned. Write a trigger called MaxTotalHours for the WORKS_ON table that will generate user defined error message if an attempt is made to assign the employee more than 40 hours. This trigger should be called before an insert to the WORKS_ON table so that the insert fails if the new hours increases the total over 40. The error message should give the number of hours entered, the number currently worked and a statement that it is over 10 hours. The web interface will display the message as shown below:



Add a Project for SSN = 123456789

You entered 30.0. You currently work 40.0. You are over 40 hours.

Project number & name

10 Computerization

Hours

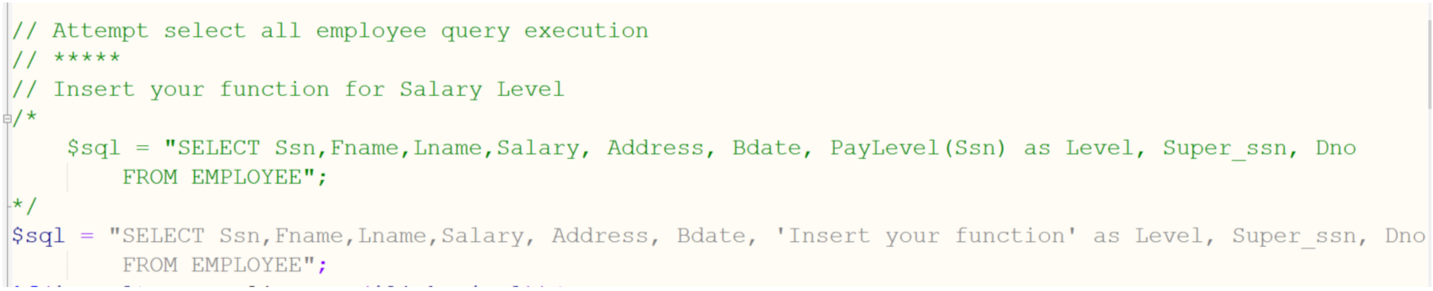
5. Write a function called PayLevel that returns a level given an Ssn as input. The level are:
   - “Above Average” if the employee makes more than the average for their department
   - “Average” if the employee makes the average for their department
   - “Below Average” if the employee makes less than the average for their department

The levels for all employees can be displayed using the command:

    SELECT Ssn, PayLevel(Ssn)
    FROM EMPLOYEE

The pay levels should be displayed in the Employee Details.

You will need to modify the index.php file to use the commented command.



```
// Attempt select all employee query execution
// *****
// Insert your function for Salary Level
/*
    $sql = "SELECT Ssn,Fname,Lname,Salary, Address, Bdate, PayLevel(Ssn) as Level, Super_ssn, Dno
        FROM EMPLOYEE";
*/
$sql = "SELECT Ssn,Fname,Lname,Salary, Address, Bdate, 'Insert your function' as Level, Super_ssn, Dno
        FROM EMPLOYEE";
```

Submit all SQL code in one .sql file and provide the URL for your web interface.