Week 02: SQL Practice Tasks

Online IDE for practice: <http://www.sqlfiddle.com/>

Practice document: <https://github.com/NYU-DataScienceBootCamp/Week-2-SQL/blob/main/SQL_Practice.pdf>

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| **NOTE:** Make sure you answer the queries in the boxes given and paste screenshots in the output box.  **The solution queries will be posted on June 24th before the session** |

# Input Data

Use the database which was discussed during the session and feel free to change the attributes of the tables. Make sure that the following conditions are satisfied:

* There are three “tables”. One for storing Employee Details, One for Bonus, and One for Employee Title.
* There are at least 12 employees in the table which stores Employee Details.

NOTE: Make sure that you paste your input data in the box given below

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| --- |
| /\* Comment with more than one line  \*/  CREATE TABLE Employee (  EMPLOYEE\_ID INT NOT NULL PRIMARY KEY AUTO\_INCREMENT,  FIRST\_NAME CHAR(25),  LAST\_NAME CHAR(25),  SALARY INT(15),  JOINING\_DATE DATETIME,  DEPARTMENT CHAR(25)  );  INSERT INTO Employee  (EMPLOYEE\_ID, FIRST\_NAME, LAST\_NAME, SALARY, JOINING\_DATE,  DEPARTMENT) VALUES  (001, 'Neville', 'Longbottom', 100000, '14-02-20 09.00.00', 'HR'),  (002, 'Ronald', 'Weasley', 80000, '14-06-11 09.00.00', 'Admin'),  (003, 'Hermoine', 'Granger', 300000, '14-02-20 09.00.00', 'HR'),  (004, 'Harry', 'Potter', 500000, '14-02-20 09.00.00', 'Admin'),  (005, 'Severus', 'Snape', 500000, '14-06-11 09.00.00', 'Admin'),  (006, 'Luna', 'Lovegood', 200000, '14-06-11 09.00.00', 'Account'),  (007, 'Draco', 'Malfoy', 75000, '14-01-20 09.00.00', 'Account'),  (008, 'Minerva', 'Mcgonagall', 90000, '14-04-11 09.00.00', 'Admin'),  (009, 'Jon', 'Arbuckle', 75000, '14-03-23 09.00.00', 'Cartoon'),  (010, 'Garfield', 'Arbuckle', 60000, '14-03-23 09.00.00', 'Cartoon'),  (011, 'Odie', 'Arbuckle', 80000, '14-03-23 09.00.00', 'Cartoon'),  (012, 'Arlene', 'Arbuckle', 90000, '14-03-23 09.00.00', 'Cartoon')  ;  CREATE TABLE Bonus (  EMPLOYEE\_REF\_ID INT,  BONUS\_AMOUNT INT(10),  BONUS\_DATE DATETIME,  FOREIGN KEY (EMPLOYEE\_REF\_ID)  REFERENCES Employee(EMPLOYEE\_ID)  ON DELETE CASCADE  );  INSERT INTO Bonus  (EMPLOYEE\_REF\_ID, BONUS\_AMOUNT, BONUS\_DATE) VALUES  (001, 5000, '16-02-20'),  (002, 3000, '16-06-11'),  (003, 4000, '16-02-20'),  (001, 4500, '16-02-20'),  (002, 3500, '16-06-11');  CREATE TABLE Title (  EMPLOYEE\_REF\_ID INT,  EMPLOYEE\_TITLE CHAR(25),  AFFECTED\_FROM DATETIME,  FOREIGN KEY (EMPLOYEE\_REF\_ID)  REFERENCES Employee(EMPLOYEE\_ID)  ON DELETE CASCADE  );  INSERT INTO Title  (EMPLOYEE\_REF\_ID, EMPLOYEE\_TITLE, AFFECTED\_FROM) VALUES  (001, 'Manager', '2016-02-20 00:00:00'),  (002, 'Executive', '2016-06-11 00:00:00'),  (008, 'Executive', '2016-06-11 00:00:00'),  (005, 'Manager', '2016-06-11 00:00:00'),  (004, 'Assistant Manager', '2016-06-11 00:00:00'),  (007, 'Executive', '2016-06-11 00:00:00'),  (006, 'Lead', '2016-06-11 00:00:00'),  (003, 'Lead', '2016-06-11 00:00:00'); |

# Tasks

## SELECTing data

* Display the entire table containing the details of all the Employees  
    
  **QUERY:**

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| --- |
| SELECT \* FROM Employee |

**OUTPUT:**

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| --- |
|  |

* Write a query to fetch “FIRST\_NAME” from the Employees table in the UPPER CASE  
    
  **QUERY:**

|  |
| --- |
| SELECT UPPER(first\_name) FROM Employee |

**OUTPUT:**

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| --- |
|  |

## GROUPing them together

* Write a query to fetch the number of Employees for each department in the descending order  
    
  **QUERY:**

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| --- |
| SELECT COUNT(\*) as Number, Department FROM Employee  GROUP BY Department  ORDER BY Number DESC |

**OUTPUT:**

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## Using WHERE somewhere

* Write a query to fetch the names of the Employees with salaries >= 90000 and <= 200000  
    
  **QUERY:**

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| --- |
| SELECT CONCAT(first\_name, ' ', last\_name) as Name, Salary FROM Employee  WHERE salary >= 90000 AND salary <= 200000 |

**OUTPUT:**

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| --- |
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## JOINing the tables

* Write a query to print details of Employees who are also “Managers”  
    
  **QUERY:**

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| --- |
| SELECT \* FROM Employee JOIN Title ON employee\_id = employee\_ref\_id  WHERE employee\_title = "manager" |

**OUTPUT:**

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| --- |
|  |

## COPYing

* Write an SQL query to clone a new table from another table  
    
  **QUERY:**

|  |
| --- |
| CREATE TABLE Employee\_Copy SELECT \* FROM Employee; |

**OUTPUT:**

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| --- |
|  |

## Aliasing

* Find the average salary of employees in each department and name the AVG(SALARY) column as “AverageSalary”  
    
  **QUERY:**

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| --- |
| SELECT AVG(Salary) as AverageSalary, Department  FROM Employee GROUP BY Department |

**OUTPUT:**

|  |
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## Some other stuff

* Write an SQL query to show the second-highest salary from a table  
    
  **QUERY:**

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| --- |
| SELECT MAX(Salary) AS SecondHighest FROM Employee  WHERE Salary NOT IN (SELECT MAX(Salary) FROM Employee) |

**OUTPUT:**

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| --- |
|  |

* Write an SQL query to show one row twice in results from a table

**QUERY:**

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| --- |
| SELECT \* FROM Employee WHERE Employee\_ID = 1  UNION ALL  SELECT \* FROM Employee WHERE Employee\_ID = 1 |

**OUTPUT:**

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|  |

* Write an SQL query to fetch the departments that have less than five people in it  
    
  **QUERY:**

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| --- |
| SELECT Department, COUNT(\*) as Number FROM Employee  GROUP BY Department  HAVING Number < 5 |

**OUTPUT:**

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|  |

* Write an SQL query to fetch the last five records from a table  
    
  **QUERY:**

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| --- |
| SELECT \* FROM Employee ORDER BY Employee\_ID DESC LIMIT 5 |

**OUTPUT:**

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