**Department of Computer Science and Engineering**

| **Course Code: CSE 370** | **Credits: 3.0** |
| --- | --- |
| **Course Name: Database Systems** | **Semester: Fall 23** |

**Lab 02 : SQL Subqueries & Aggregate Functions  
Activity List**

* **All commands are shown in the red boxes .**
* **In the green box write the appropriate query/answer.**
* **All new queries should be typed in command window after mysql>**
* **Start by connecting to server using: mysql –u root –p [password:root]**
* **For more MySQL queries, go to** [**www.w3schools.com/sql**](http://www.w3schools.com/sql) **or google it!**



| **Std\_ID** | **Name** | **Major** | **Days\_present** | **Project\_marks** | **CGPA** | **Sub\_date** |
| --- | --- | --- | --- | --- | --- | --- |
| s001 | Abir | CS | 10 | 18.5 | 3.91 | 2018-09-15 |
| s002 | Nafis | CS | 12 | 20 | 3.86 | 2018-08-15 |
| s003 | Tasneem | CS | 8 | 18 | 3.57 | 2018-09-18 |
| s005 | Arafat | CSE | 11 | 20 | 4.0 | 2018-09-13 |
| s006 | Tasneem | CSE | 12 | 17.5 | 3.7 | 2018-08-15 |
| s007 | Muhtadi | ECE | 10 | 19 | 3.67 | 2018-09-16 |

**Task 1: Aggregate Functions, Group By and Having:**







* How will you retrieve the last submission date? 





* What is the purpose of the group by keyword? In the above command if we group by sub\_date, instead of major, what will be the output?











* The having and where clause both are used to specify a condition when selecting rows. What is the different between them?



**Task 2: Sub Queries/Nested Queries, Any and All:**

* Think about how you can retrieve the name of students who got the highest project marks. Try out your query, did you get the “correct” response according to the table?







* Why is the “in” operator used in the above command instead of “=”?





* Did you understand the role of “any” and “all” in the above queries? Explain below.



* Retrieve the name of the students who have received marks greater than at least 1 student doing the same major as them.[Hint: see next command]

**Task 3: Correlated Subqueries and Exists:** 



* L1 and L2 are temporary aliases and create two separate instances for Lab\_grades, why are they required?







* Please identify the difference between the above two queries. [Hint: 1 asks for unique-only 1 student got highest and the other doesn’t]















* The statement below is the general format for a “Select” statement. State what each of the keywords (marked in blue) are used for.



**Task 4: Take a Quiz**

Go to <https://sqlzoo.net/wiki/Nested_SELECT_Quiz> to test your understanding of the queries taught in class.