

**Laboratory Assignments**  
**Subject: Introduction to Databases**  
**Subject code: CSE 3151**

**Assignment 3: Practicing SQL queries using SQL operators, Aggregate and Scalar functions**

**Objective of this Assignment:**

- To solve simple queries using SQL operators, Aggregate functions and Scalar functions over tables based on assignment 1.

**1. Write the SQL Expressions for the following queries using suitable SQL operators .**

- a) Display the Course\_ids, Titles and Credits of course that are offered in any of the departments namely: Physics, Music, Finance and Biology.
- b) Display records of the instructors whose name starts with “K” and who get salary more than 65000.
- c) Display name, department, gross salary and net salary of instructors with 105% DA, 20% HRA, 30% IT. (gross salary = salary + DA + HRA, net salary = gross salary – IT).
- d) Display records of the Instructors with salary range 60000 to 80000.
- e) Display the records of the instructors having the second letter in their name as ‘r’.
- f) Display the names of the instructors of Comp.Sci. Department in the descending order of their salary.
- g) Update all records of Instructor table with a salary hike of 15%.
- h) Update the records with a salary hike of 3% for Comp.Sci. Dept instructors having salary less than 70000.
- i) Display the annual salary of each instructor.
- j) Update the title of the course having title 'Game Design' to 'Game Theory'.
- k) Delete the instructor records of History department.
- l) Delete the course records of the courses having course\_id starting with 'BIO'

**2. Write the SQL Expressions for the following queries using suitable SQL aggregate function.**

- a) Display the Avg. salary of instructors of Physics department.
- b) Display the Dept\_ name and Average salary paid to instructor of each department
- c) Display the ID, Name & Department of the instructor drawing the highest salary.
- d) Display the number of instructors available in Comp. Sci. Department.
- e) Display the total credits of all courses offered in Comp.Sci. Department.
- f) Display the number of instructors and total salary drawn by Physics and Comp.Sci. departments.
- g) Display the total credits of Comp.Sci. and Biology departments from course table.
- h) Display building wise total budget values.
- i) Display the number of instructors of each department.
- j) Display the number of instructors of each department sorted in high to low.
- k) Display the number of courses offered semester wise.
- l) Display the name of departments having number of instructors less than 2;
- m) List the number of instructors of each department having 2 or more than 2 instructors except Finance department, sorted in high to low order of their number.
- n) Display the Dept\_ name that has paid total salary more than 50000.
- o) Display the total budget for the building built by Watson.
- p) Display the highest salary of the instructor of Comp.Sci. Department.

**3. Write the SQL Expressions for the following queries using suitable SQL scalar function.**

- a) Display your name with first letter being capital, where the entered name is in lower case.
- b) Display 2nd- 6th characters of your name.
- c) Find length of your full university name.
- d) Display all the Instructor names with its first letter in upper case.
- e) List the department name of each instructor as a three letter code.
- f) Display the month of the joining of each instructor.
- g) Display the date of joining of each instructor in dd/mm/yy format.
- h) Display the experience of each instructor in terms of months.
- i) Display the experience of each instructor in term of years and months.

- j) Display the date of the next Friday after today's date.
- k) Display the day of joining of each instructor.
- l) Display the date corresponding to 15 days after today's date.
- m) Display the value 94204.27348 truncated up to 2 digits after decimal point.
- n) Display the value of the expression  $5 + 8^9$
- o) Find out the square root of 6464312.
- p) Display the string "HELLO ITER" in lower case with a column heading lower case.