**Branch :- Computer Sci. & Engg. Class :- III Year**

**Subject :- DBMS Sem :- V**

**Teacher Manual**

**PRACTICAL NO 5**

**AIM**: To Study and implement aggregation functions.

**S/W REQUIRED: MYSQL 8.0 Command line client**

Sample Database Considered is:

1. classroom(building, room\_number, capacity)

2. department(dept\_name, building, budget)

3. course(course\_id, title, dept name, credits)

4. instructor(inst\_id, name, dept name, salary)

5. section(course\_id, sec id, semester, year, building, room number, time slot\_id)

6. teaches(inst\_id, course\_id, sec-id, semester, year)

7. student(stu\_id, name, dept\_name, tot\_cred)

8. takes(stu\_id, course\_id, sec-id, semester, year, grade)

9. advisor(s\_id, i\_id)

10. prereq(course\_id, prereq\_id)

Queries:Study and implement aggregation functions.

1. Find the average salary of instructors in the computer science department.
2. Find the total number of instructors who teach a course in the spring 2010.
3. Find the total number of tuples in the course relation.
4. Find the average salary in each department.
5. Find the names and average salaries of all departments whose average salary is greater than 42000.
6. Find the maximum salary of instructors in the physics department.
7. Find the minimum salary of instructors in the computer science department.
8. Find the total number of departments in the course relation.

Solution to Queries:

1. Find the average salary of instructors in the computer science department.

mysql> select avg(salary) from instructor where dept\_name='computerscience';

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

| avg(salary) |

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

| 70000.000000 |

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

1 row in set (0.65 sec)

1. Find the total number of instructors who teach a course in the spring 2010.

mysql> select count(distinct id) from teaches where semester='spring' and year=2010;

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

| count(distinct id) |

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

| 1 |

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

1 row in set (0.20 sec)

1. Find the total number of tuples in the course relation.

mysql> select count(\*) from course;

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

| count(\*) |

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

| 8 |

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

1 row in set (0.21 sec)

1. Find the average salary in each department of instructor.

mysql> select dept\_name,avg(salary) from instructor group by dept\_name;

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

| dept\_name | avg(salary) |

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

| biology | 59666.666667 |

| Computerscience | 70000.000000 |

| finance | 90000.000000 |

| history | 60000.000000 |

| music | 40000.000000 |

| physics | 393666.666667 |

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

6 rows in set (0.03 sec)

1. Find the names and average salaries of all departments whose average salary is greater than 42000.

mysql> select dept\_name,avg(salary) from instructor group by dept\_name having avg(salary)>42000;

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

| dept\_name | avg(salary) |

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

| biology | 59666.666667 |

| Computerscience | 70000.000000 |

| finance | 90000.000000 |

| history | 60000.000000 |

| physics | 393666.666667 |

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

5 rows in set (0.03 sec)

1. Find the maximum budget from department.

mysql> select max(budget) from department ;

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

| max(budget) |

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

| 120000 |

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

1 row in set (0.02 sec)

1. Find the minimum budget from department.

mysql> select min(budget) from department;

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

| min(budget) |

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

| 9000 |

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

1 row in set (0.01 sec)

1. Find the total number of departments in the course relation.

mysql> select count(distinct dept\_name) from course;

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

| count(distinct dept\_name) |

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

| 2 |

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

1 row in set (0.02 sec)

**CONCLUSION:** Thusvarious SQL queries are executed.