Practical Assignment 4: Perform the following SQL queries on the database created in Assignment 1.

Implementation of relational operators in SQL Boolean operators and pattern matching Arithmetic operations and built in functions Group functions
Processing Date and Time functions

Complex queries and set operators

mysql> use COMPANY
Database changed
mysql> sologt * from

mysql> select * from emp;

+				+	+-		+-			+-		-+
	EMPNO	ENAME	JOB	MGR		HIREDATE		SAL	COMM		DEPTNO	
+		+	·	+	+-		+-			+-		-+
	7369	Smith	Clerk	7902		2010-12-17		800	NULL		20	
	7499	Allen	Salesman	7698		2011-02-20		1600	300		30	
	7521	Ward	Salesman	7698		2011-02-22		1250	500		30	
	7566	Jones	Manager	7839		2011-04-02		2975	NULL		20	
	7654	Martin	Salesman	7698		2011-09-28		1250	1400		30	
	7698	Blake	Manager	7838		2011-05-01		2850	NULL		30	
	7782	Clark	Manager	7838		2011-06-09		2450	NULL		10	
	7788	Scott	Analyst	7566		2012-12-09		3000	NULL		20	
	7839	King	President	NULL		2011-11-17		5000	NULL		10	
	7844	Turner	Salesman	7698		2011-09-08		1500	0		30	
	7876	Adams	Clerk	7698		2013-01-12		1100	NULL		20	
	7876	Adams	Clerk	7698		2013-01-12		1100	NULL		20	
+		<u> </u>		+	+-		+-			+-		-+

12 rows in set (0.00 sec)

mysql> select count(*),avg(sal),deptno from emp where deptno=20;

+-----+-----+-----+ | count(*) | avg(sal) | deptno | +-----+-----+ | 5 | 1795.0000 | 20 | +-----+

1 row in set (0.01 sec)

mysql> select ename, sal, ((sal*10)/100) as PF from emp;

+----+ | ename | sal | PF | +----+ | Smith | 800 | 80.0000 | | Allen | 1600 | 160.0000 | | Ward | 1250 | 125.0000 | | Jones | 2975 | 297.5000 | | Martin | 1250 | 125.0000 | | Blake | 2850 | 285.0000 | | Clark | 2450 | 245.0000 | | Scott | 3000 | 300.0000 | | King | 5000 | 500.0000 | | Turner | 1500 | 150.0000 | | Adams | 1100 | 110.0000 | | Adams | 1100 | 110.0000 | +----+

12 rows in set (0.01 sec)

mysql> select ename from emp where (1995-year(hiredate) >= 14); Empty set (0.01 sec)

mysql> select * from emp order by sal; +----+

mysq1> se	eiect ^ i.	rom emb orde		- <i>i</i> 	+ 	L	L
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	Smith	Clerk	7902	2010-12-17	800	NULL	20
7876	Adams	Clerk	7698	2013-01-12	1100	NULL	20
7876	Adams	Clerk	7698	2013-01-12	1100	NULL	20
7521	Ward	Salesman	7698	2011-02-22	1250	500	30
7654	Martin	Salesman	7698	2011-09-28	1250	1400	30
7844	Turner	Salesman	7698	2011-09-08	1500	0	30
7499	Allen	Salesman	7698	2011-02-20	1600	300	30
7782	Clark	Manager	7838	2011-06-09	2450	NULL	10
7698	Blake	Manager	7838	2011-05-01	2850	NULL	30
7566	Jones	Manager	7839	2011-04-02	2975	NULL	20
7788	Scott	Analyst	7566	2012-12-09	3000	NULL	20
7839	King	President	NULL	2011-11-17	5000	NULL	10
+	+	+	++		+	+	++

12 rows in set (0.00 sec)

mysql> select * from emp order by sal desc;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
+	King King Scott Jones Blake Clark Allen Turner Ward Martin Adams Adams Smith	President Analyst Manager Manager Manager Salesman Salesman Salesman Clerk Clerk Clerk	+	2011-11-17 2011-12-09 2011-04-02 2011-05-01 2011-06-09 2011-02-20 2011-09-08 2011-02-22 2011-09-28 2013-01-12 2013-01-12	+	+	10 20 20 30 10 30 30 30 30 20 20

12 rows in set (0.00 sec)

mysql> select * from emp;

+		+		+-		+-		+-		+-		+	+
į	EMPNO	ENAME	JOB		MGR		HIREDATE		SAL		COMM	İ	DEPTNO
+		+		+-		+-		+-		+-		+	+
	7369	Smith	Clerk		7902		2010-12-17		800		NULL		20
	7499	Allen	Salesman		7698		2011-02-20		1600		300		30
	7521	Ward	Salesman		7698		2011-02-22		1250		500		30
	7566	Jones	Manager		7839		2011-04-02		2975		NULL		20
	7654	Martin	Salesman		7698		2011-09-28		1250		1400		30
	7698	Blake	Manager		7838		2011-05-01		2850		NULL		30
	7782	Clark	Manager		7838		2011-06-09		2450		NULL		10
	7788	Scott	Analyst		7566		2012-12-09		3000		NULL		20
	7839	King	President		NULL		2011-11-17		5000		NULL		10
	7844	Turner	Salesman		7698		2011-09-08		1500		0		30
	7876	Adams	Clerk		7698		2013-01-12		1100		NULL		20
	7876	Adams	Clerk		7698		2013-01-12		1100		NULL		20
+		+		+-		+-		+-		+-		+	+

mysql> select ename, sal, ((sal*10)/100) as PF, ((sal*50)/100) as HRA, ((sal*30)/100) as DA, (sal+

((sal*10)/100)+((sal*50)/100)+((sal*30)/100)) as Gross from emp order by Gross;

ename	sal	PF	HRA	DA 	Gross
+	800 1100 1100 1250 1250 1500 1600 2450 2850 2975 3000 5000	80.0000 110.0000 110.0000 125.0000 125.0000 150.0000 160.0000 245.0000 285.0000 297.5000 300.0000	400.0000 550.0000 550.0000 625.0000 750.0000 800.0000 1225.0000 1425.0000 1487.5000 1500.0000 2500.0000	240.0000 330.0000 330.0000 375.0000 375.0000 450.0000 480.0000 735.0000 855.0000 892.5000 900.0000	1520.0000 2090.0000 2090.0000 2375.0000 2375.0000 2850.0000 3040.0000 4655.0000 5415.0000 5652.5000 5700.0000

12 rows in set (0.00 sec)

mysql> select count(*),deptno from emp group by deptno;

```
+-----+
| count(*) | deptno |
+-----+
| 5 | 20 |
| 5 | 30 |
| 2 | 10 |
```

3 rows in set (0.00 sec)

mysql> select deptno,sum(sal) as Total_Sal_Payable from emp group by
deptno;

+		+		+
	deptno	 -	Total_Sal_Payable	 -
	20		8975	
	30		8450	
	10		7450	
т.		ъ.		

3 rows in set (0.00 sec)

mysql> select job as Job, count(empno) as Num_Of_Emp from emp group by job
order by count(empno) desc;

+-		+-	+
	Job		Num_Of_Emp
+-		+-	+
	Salesman		4
	Clerk		3
	Manager		3
	Analyst		1
	President		1
+-		+-	+

5 rows in set (0.01 sec)

mysql> select * from emp;

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
+-	7369 7499 7521 7566 7654 7698 7782 7788 7839 7844 7876	Smith Allen Ward Jones Martin Blake Clark Scott King Turner Adams Adams	Clerk Salesman Salesman Manager Salesman Manager Manager Analyst President Salesman Clerk Clerk	7902 7698 7698 7698 7839 7698 7838 7838 7566 NULL 7698	2010-12-17 2011-02-20 2011-02-22 2011-04-02 2011-09-28 2011-05-01 2011-06-09 2012-12-09 2011-11-17 2011-09-08 2013-01-12	800 1600 1250 2975 1250 2850 2450 3000 5000 1500 1100	NULL 300 300 500 140	20 30 30 20 30 30 10 20 10 20 20

12 rows in set (0.00 sec)

mysql> select job as Job, sum(sal) as Total, max(sal) as Max, min(sal) as
Min, avg(sal) as Average

from emp group by job;

+		+-		+-		+-		+-		+
	Job		Total		Max		Min		Average	
+		+-		+-		+-		+-		+
	Clerk		3000		1100		800		1000.0000	
	Salesman		5600		1600		1250		1400.0000	
	Manager		8275		2975		2450		2758.3333	
	Analyst		3000		3000		3000		3000.0000	
	President		5000		5000		5000		5000.0000	
+		+-		+-		+-		+-		+

5 rows in set (0.01 sec)

mysql> select deptno, sum(sal), max(sal), min(sal), avg(sal) from emp where deptno = 20;

+	deptno	sum(sal)	max(sal)	1	++ avg(sal)
	20			•	1795.0000

1 row in set (0.00 sec)

mysql> select job as Job, sum(sal) as Total, max(sal) as Max, min(sal) as
Min, avg(sal) as

Average,deptno as Dept from emp where deptno=20 group by job having avg(sal)>1000;

Job		Total	İ	Max	İ	Min		Average	İ	Dept
Manager	İ	2975	İ	2975	İ	2975		2975.0000	•	

2 rows in set (0.00 sec)

mysql> select * from emp;

+				т
EMPNO 1	ENAME JOB	MGR H	HIREDATE SAL	COMM DEPTNO
+	+	+_		++

```
| 7369 | Smith | Clerk | 7902 | 2010-12-17 | 800 | NULL |
                                                        20 |
  7499 | Allen | Salesman | 7698 | 2011-02-20 | 1600 | 300 |
7521 | Ward | Salesman | 7698 | 2011-02-22 | 1250 | 500 |
                                                         30 I
7566 | Jones | Manager | 7839 | 2011-04-02 | 2975 | NULL |
                                                        20 |
7654 | Martin | Salesman | 7698 | 2011-09-28 | 1250 | 1400 |
 7698 | Blake | Manager | 7838 | 2011-05-01 | 2850 | NULL |
7782 | Clark | Manager | 7838 | 2011-06-09 | 2450 | NULL |
7788 | Scott | Analyst | 7566 | 2012-12-09 | 3000 | NULL |
7839 | King | President | NULL | 2011-11-17 | 5000 | NULL |
                                                        10 |
7844 | Turner | Salesman | 7698 | 2011-09-08 | 1500 | 0 |
                                                         30 |
| 7876 | Adams | Clerk | 7698 | 2013-01-12 | 1100 | NULL | 7876 | Adams | Clerk | 7698 | 2013-01-12 | 1100 | NULL |
+----+----+-----+------+
12 rows in set (0.00 sec)
mysql> select max(sal) from emp where job='Salesman';
+----+
| max(sal) |
+----+
1600 |
+----+
1 row in set (0.00 sec)
mysql> select count(*) from emp;
+----+
| count(*) |
+----+
12 |
+----+
1 row in set (0.01 sec)
mysql> select count(distinct(job)) from emp;
| count(distinct(job)) |
+----+
+----+
1 row in set (0.00 sec)
mysql> select sum(sal) from emp;
+----+
| sum(sal) |
+----+
| 24875 |
+----+
1 row in set (0.00 sec)
mysql> select max(sal), min(sal), avg(sal) from emp;
+----+
| max(sal) | min(sal) | avg(sal) |
+----+
| 5000 | 800 | 2072.9167 |
+----+
1 row in set (0.00 sec)
mysql> select * from emp;
+----+
| EMPNO | ENAME | JOB | MGR | HIREDATE | SAL | COMM | DEPTNO |
```

7369 Smith	Clerk	7902	2010-12-17	800	NULL	20
7499 Allen	Salesman	7698	2011-02-20	1600	300	30
7521 Ward	Salesman	7698	2011-02-22	1250	500	30
7566 Jones	Manager	7839	2011-04-02	2975	NULL	20
7654 Martin	Salesman	7698	2011-09-28	1250	1400	30
7698 Blake	Manager	7838	2011-05-01	2850	NULL	30
7782 Clark	Manager	7838	2011-06-09	2450	NULL	10
7788 Scott	Analyst	7566	2012-12-09	3000	NULL	20
7839 King	President	NULL	2011-11-17	5000	NULL	10
7844 Turner	Salesman	7698	2011-09-08	1500	0	30
7876 Adams	Clerk	7698	2013-01-12	1100	NULL	20
7876 Adams	Clerk	7698	2013-01-12	1100	NULL	20