

## Assignment 8

-> Set operators:

=> UNION

=> INTERSECT

=> MINUS

### UNION

Q. Show all unique job titles and department locations

```
mysql> SELECT job_title AS info FROM emp
-> UNION
-> SELECT location AS info FROM dept;
+-----+
| info |
+-----+
| HR Manager |
| Recruiter |
| HR Executive |
| Finance Manager |
| Accountant |
| Financial Analyst |
| IT Manager |
| Software Engineer |
| Database Admin |
| System Analyst |
| Sales Manager |
| Sales Executive |
| Marketing Manager |
| Marketing Executive |
| Digital Marketer |
| Content Strategist |
| HR Assistant |
| Payroll Specialist |
| Finance Clerk |
| Accounts Assistant |
| IT Support |
| Network Engineer |
| Sales Assistant |
| Sales Representative |
| Sales Coordinator |
| SEO Specialist |
| Brand Strategist |
| New York |
| London |
| Ohio |
| Chicago |
| Toronto |
+-----+
32 rows in set (0.00 sec)
```

### INTERSECT

Q. Employees working in departments located in 'New York'

```
mysql> SELECT emp_name FROM emp
-> INTERSECT
-> SELECT emp_name FROM emp
-> WHERE deptId IN (SELECT deptId FROM dept WHERE location='New York');
```

emp_name
John Smith
Emma Johnson
Michael Brown
Lucas Clark
Ella Rodriguez

5 rows in set (0.00 sec)

## MINUS

Q. Departments that have no employees

```
mysql> SELECT deptName FROM dept
-> EXCEPT
-> SELECT deptName FROM dept
-> WHERE deptId IN (SELECT deptId FROM emp);
```

Empty set (0.00 sec)

## JOINS

### INNER JOIN

Q. Employee salary with department location

```
mysql> SELECT e.emp_name, e.salary, d.location
-> FROM emp e
-> INNER JOIN dept d ON e.deptId = d.deptId;
```

emp_name	salary	location
John Smith	65000.00	New York
Emma Johnson	40000.00	New York
Michael Brown	35000.00	New York
Lucas Clark	30000.00	New York
Ella Rodriguez	38000.00	New York
Olivia Davis	70000.00	London
Daniel Wilson	45000.00	London
Sophia Miller	48000.00	London
Mason Lewis	32000.00	London
Lily Walker	34000.00	London
James Taylor	80000.00	Ohio
Isabella Moore	55000.00	Ohio
William Anderson	60000.00	Ohio
Mia Thomas	52000.00	Ohio
Noah Hall	36000.00	Ohio
Grace Allen	47000.00	Ohio
Logan Young	51000.00	Ohio
Ethan Jackson	75000.00	Chicago
Ava White	40000.00	Chicago
Charlotte Martin	39000.00	Chicago
Zoe King	28000.00	Chicago
Matthew Scott	30000.00	Chicago
Aria Green	32000.00	Chicago
Benjamin Thompson	68000.00	Toronto
Amelia Garcia	17000.00	Toronto
Henry Martinez	45000.00	Toronto
Harper Robinson	43000.00	Toronto
Jack Adams	40000.00	Toronto
Scarlett Baker	46000.00	Toronto

29 rows in set (0.00 sec)

## LEFT JOIN

Q. Employees with department location (null if no department)

```
mysql> SELECT e.emp_name, d.location
-> FROM emp e
-> LEFT JOIN dept d ON e.deptId = d.deptId;
```

emp_name	location
John Smith	New York
Emma Johnson	New York
Michael Brown	New York
Olivia Davis	London
Daniel Wilson	London
Sophia Miller	London
James Taylor	Ohio
Isabella Moore	Ohio
William Anderson	Ohio
Mia Thomas	Ohio
Ethan Jackson	Chicago
Ava White	Chicago
Charlotte Martin	Chicago
Benjamin Thompson	Toronto
Amelia Garcia	Toronto
Henry Martinez	Toronto
Harper Robinson	Toronto
Lucas Clark	New York
Ella Rodriguez	New York
Mason Lewis	London
Lily Walker	London
Noah Hall	Ohio
Grace Allen	Ohio
Logan Young	Ohio
Zoe King	Chicago
Matthew Scott	Chicago
Aria Green	Chicago
Jack Adams	Toronto
Scarlett Baker	Toronto

29 rows in set (0.00 sec)

## RIGHT JOIN

Q. Department name and employee salary (null if no employee)

```
mysql> SELECT d.deptName, e.salary  
-> FROM emp e  
-> RIGHT JOIN dept d ON e.deptId = d.deptId;
```

deptName	salary
HR	65000.00
HR	40000.00
HR	35000.00
HR	30000.00
HR	38000.00
Finance	70000.00
Finance	45000.00
Finance	48000.00
Finance	32000.00
Finance	34000.00
IT	80000.00
IT	55000.00
IT	60000.00
IT	52000.00
IT	36000.00
IT	47000.00
IT	51000.00
Sales	75000.00
Sales	40000.00
Sales	39000.00
Sales	28000.00
Sales	30000.00
Sales	32000.00
Marketing	68000.00
Marketing	170000.00
Marketing	45000.00
Marketing	43000.00
Marketing	40000.00
Marketing	46000.00

29 rows in set (0.00 sec)

EQUI JOIN

```
mysql> SELECT e.emp_id, e.emp_name, d.location  
-> FROM emp e, dept d  
-> WHERE e.deptId = d.deptId;
```

emp_id	emp_name	location
2	John Smith	New York
3	Emma Johnson	New York
4	Michael Brown	New York
20	Lucas Clark	New York
21	Ella Rodriguez	New York
5	Olivia Davis	London
6	Daniel Wilson	London
7	Sophia Miller	London
22	Mason Lewis	London
23	Lily Walker	London
8	James Taylor	Ohio
9	Isabella Moore	Ohio
10	William Anderson	Ohio
11	Mia Thomas	Ohio
24	Noah Hall	Ohio
25	Grace Allen	Ohio
26	Logan Young	Ohio
12	Ethan Jackson	Chicago
13	Ava White	Chicago
15	Charlotte Martin	Chicago
27	Zoe King	Chicago
28	Matthew Scott	Chicago
29	Aria Green	Chicago
16	Benjamin Thompson	Toronto
17	Amelia Garcia	Toronto
18	Henry Martinez	Toronto
19	Harper Robinson	Toronto
30	Jack Adams	Toronto
31	Scarlett Baker	Toronto

```
29 rows in set (0.00 sec)
```

## ASSIGNMENT 9

-> STRING FUNCTIONS

=> LENGTH

=> CONCAT

=> UPPER

=> lower

=> SUBSTRING

=> TRIM

=> REPLACE

## LENGTH

```
mysql> SELECT emp_name, LENGTH(emp_name) AS Name_Length
-> FROM emp;
```

emp_name	Name_Length
John Smith	10
Emma Johnson	12
Michael Brown	13
Olivia Davis	12
Daniel Wilson	13
Sophia Miller	13
James Taylor	12
Isabella Moore	14
William Anderson	16
Mia Thomas	10
Ethan Jackson	13
Ava White	9
Charlotte Martin	16
Benjamin Thompson	17
Amelia Garcia	13
Henry Martinez	14
Harper Robinson	15
Lucas Clark	11
Ella Rodriguez	14
Mason Lewis	11
Lily Walker	11
Noah Hall	9
Grace Allen	11
Logan Young	11
Zoe King	8
Matthew Scott	13
Aria Green	10
Jack Adams	10
Scarlett Baker	14

```
29 rows in set (0.00 sec)
```

## CONCAT

```
mysql> SELECT CONCAT(emp_name, ' works as a ', job_title) AS Employee_Info  
-> FROM emp;
```

Employee_Info
John Smith works as a HR Manager
Emma Johnson works as a Recruiter
Michael Brown works as a HR Executive
Olivia Davis works as a Finance Manager
Daniel Wilson works as a Accountant
Sophia Miller works as a Financial Analyst
James Taylor works as a IT Manager
Isabella Moore works as a Software Engineer
William Anderson works as a Database Admin
Mia Thomas works as a System Analyst
Ethan Jackson works as a Sales Manager
Ava White works as a Sales Executive
Charlotte Martin works as a Sales Executive
Benjamin Thompson works as a Marketing Manager
Amelia Garcia works as a Marketing Executive
Henry Martinez works as a Digital Marketer
Harper Robinson works as a Content Strategist
Lucas Clark works as a HR Assistant
Ella Rodriguez works as a Payroll Specialist
Mason Lewis works as a Finance Clerk
Lily Walker works as a Accounts Assistant
Noah Hall works as a IT Support
Grace Allen works as a Network Engineer
Logan Young works as a Software Engineer
Zoe King works as a Sales Assistant
Matthew Scott works as a Sales Representative
Aria Green works as a Sales Coordinator
Jack Adams works as a SEO Specialist
Scarlett Baker works as a Brand Strategist

29 rows in set (0.00 sec)

## UPPER

```
mysql> SELECT UPPER(emp_name) AS Upper_Name  
-> FROM emp;
```

Upper_Name
JOHN SMITH
EMMA JOHNSON
MICHAEL BROWN
OLIVIA DAVIS
DANIEL WILSON
SOPHIA MILLER
JAMES TAYLOR
ISABELLA MOORE
WILLIAM ANDERSON
MIA THOMAS
ETHAN JACKSON
AVA WHITE
CHARLOTTE MARTIN
BENJAMIN THOMPSON
AMELIA GARCIA
HENRY MARTINEZ
HARPER ROBINSON
LUCAS CLARK
ELLA RODRIGUEZ
MASON LEWIS
LILY WALKER
NOAH HALL
GRACE ALLEN
LOGAN YOUNG
ZOE KING
MATTHEW SCOTT
ARIA GREEN
JACK ADAMS
SCARLETT BAKER

```
29 rows in set (0.00 sec)
```

LOWER



```
mysql> SELECT LOWER(job_title) AS Lower_Job  
-> FROM emp;
```

Lower_Job
hr manager
recruiter
hr executive
finance manager
accountant
financial analyst
it manager
software engineer
database admin
system analyst
sales manager
sales executive
sales executive
marketing manager
marketing executive
digital marketer
content strategist
hr assistant
payroll specialist
finance clerk
accounts assistant
it support
network engineer
software engineer
sales assistant
sales representative
sales coordinator
seo specialist
brand strategist

29 rows in set (0.00 sec)

## SUBSTRING

```
mysql> SELECT SUBSTRING(emp_name, 1, 3) AS Short_Name  
-> FROM emp;
```

Short_Name
Joh
Emm
Mic
Oli
Dan
Sop
Jam
Isa
Wil
Mia
Eth
Ava
Cha
Ben
Ame
Hen
Har
Luc
Ell
Mas
Lil
Noa
Gra
Log
Zoe
Mat
Ari
Jac
Sca

```
+-----+  
29 rows in set (0.00 sec)
```

## REPLACE

```
mysql> SELECT REPLACE(emp_name, 'a', '@') AS Replaced_Name  
-> FROM emp;
```

Replaced_Name
John Smith
Emm@ Johnson
Mich@el Brown
Olivi@ D@vis
D@niel Wilson
Sophi@ Miller
J@mes T@ylor
Is@bell@ Moore
Willi@m Anderson
Mi@ Thom@s
Eth@n J@ckson
Av@ White
Ch@rlotte M@rtin
Benj@min Thompson
Ameli@ G@rci@
Henry M@rtinez
H@rper Robinson
Luc@s Cl@rk
Ell@ Rodriguez
M@son Lewis
Lily W@lker
No@h H@ll
Gr@ce Allen
Log@n Young
Zoe King
M@tthew Scott
Ari@ Green
J@ck Ad@ms
Sc@rlett B@ker

```
29 rows in set (0.00 sec)
```

## Assignment 10

-> TCL Commands

=> COMMIT

=> ROLLBACK

=> SAVEPOINT

-COMMIT

START TRANSACTION;

INSERT INTO emp (empId, emp\_name, deptId, salary)

VALUES (105, 'Ravi', 2, 55000);

UPDATE emp SET salary = salary + 5000 WHERE empId = 102;

COMMIT;

-ROLLBACK

START TRANSACTION;

DELETE FROM emp WHERE empId = 104;

ROLLBACK;

-SAVEPOINT

START TRANSACTION;

UPDATE emp SET salary = salary + 2000 WHERE deptId = 1;

SAVEPOINT sp1;

```
UPDATE emp SET salary = salary + 3000 WHERE deptId = 2;  
SAVEPOINT sp2;  
ROLLBACK TO sp1;  
COMMIT;
```