

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 | 170000.00 | 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
| Oliv@ D@vis
| D@niel Wilson
| Soph@ 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;
```