

MySQL basic SELECT statement - Exercises, Practice, Solution

1. Write a query to display the names (first_name, last_name) using alias name "First Name", "Last Name"

```
SELECT First_Name "First Name" , Last_Name "Last Name" FROM `employees`
```

2. Write a query to get unique department ID from employee table.

```
SELECT DISTINCT DEPARTMENT_ID FROM `employees`
```

3. Write a query to get all employee details from the employee table order by first name, descending.

```
SELECT * FROM `employees` ORDER BY FIRST_NAME DESC
```

4. Write a query to get the names (first_name, last_name), salary, PF of all the employees (PF is calculated as 15% of salary).

```
SELECT First_Name, Last_Name, salary,salary*.15PF FROM `employees`
```

5. Write a query to get the employee ID, names (first_name, last_name), salary in ascending order of salary.

```
SELECT employee_id, first_name, last_name,salary FROM `employees` ORDER BY salary
```

6. Write a query to get the total salaries payable to employees.

```
SELECT SUM(salary) FROM `employees`
```

7. Write a query to get the maximum and minimum salary from employees table.

```
SELECT MAX(salary),MIN(salary) FROM `employees`
```

8. Write a query to get the average salary and number of employees in the employees table.

```
SELECT AVG(salary),COUNT(*) FROM `employees`
```

9. Write a query to get the number of employees working with the company.

```
SELECT COUNT(*) FROM `employees`
```

10. Write a query to get the number of jobs available in the employees table.

```
SELECT COUNT(DISTINCT JOB_ID) FROM `employees`
```

11. Write a query get all first name from employees table in upper case.

```
SELECT UPPER (first_name as Name)FROM `employees`
```

12. Write a query to get the first 3 characters of first name from employees table.

```
SELECT SUBSTR(first_name,1,3) FROM `employees`
```

13. Write a query to calculate $171 \times 214 + 625$.

```
SELECT 171*214+625 result
```

14. Write a query to get the names (for example Ellen Abel, Sundar Ande etc.) of all the employees from employees table.

```
SELECT CONCAT(first_name, ' ', last_name) "Employee Name" FROM `employees`
```

15. Write a query to get first name from employees table after removing white spaces from both side.

```
SELECT TRIM(first_name) FROM `employees`
```

16. Write a query to get the length of the employee names (first_name, last_name) from employees table.

```
SELECT first_name, last_name, LENGTH(first_name) + LENGTH(last_name) 'LENGTH OF NAME' FROM `employees`
```

17. Write a query to check if the first_name fields of the employees table contains numbers.

```
SELECT * FROM employees WHERE first_name REGEXP '[0-9]';
```

18. Write a query to select first 10 records from a table.

```
SELECT employee_id, first_name FROM `employees` LIMIT 10
```

19. Write a query to get monthly salary (round 2 decimal places) of each and every employee Note : Assume the salary field provides the 'annual salary' information.

```
SELECT first_name, last_name, round(salary/12,2) as 'Monthly Salary' FROM employees;
```

MySQL Restricting and Sorting data

1. Write a query to display the name (first_name, last_name) and salary for all employees whose salary is not in the range \$10,000 through \$15,000.

```
SELECT first_name, last_name, salary FROM `employees` WHERE salary NOT BETWEEN 10000 AND 15000;
```

2. Write a query to display the name (first_name, last_name) and department ID of all employees in departments 30 or 100 in ascending order.

```
SELECT first_name, last_name, department_id FROM `employees` WHERE department_id IN (30,100) ORDER BY department_id ASC;
```

3. Write a query to display the name (first_name, last_name) and salary for all employees whose salary is not in the range \$10,000 through \$15,000 and are in department 30 or 100.

```
SELECT first_name, last_name, salary, department_id FROM `employees` WHERE salary NOT BETWEEN 10000 AND 15000 AND department_id IN (30,100);
```

4. Write a query to display the name (first_name, last_name) and hire date for all employees who were hired in 1987.

```
SELECT first_name, last_name, hire_date FROM `employees` WHERE YEAR(hire_date) LIKE '1987%'
```

5. Write a query to display the first_name of all employees who have both "b" and "c" in their first name.

```
SELECT FIRST_NAME FROM `employees` WHERE first_name LIKE '%b%' and first_name LIKE '%c%';
```

6. Write a query to display the last name, job, and salary for all employees whose job is that of a Programmer or a Shipping Clerk, and whose salary is not equal to \$4,500, \$10,000, or \$15,000.

```
SELECT last_name,job_ID,salary FROM employees WHERE job_ID IN('IT_PROG','SH_CLERK')AND salary NOT IN (4500,10000,15000)
```

7. Write a query to display the last name of employees whose names have exactly 6 characters.

```
SELECT last_name FROM `employees` WHERE last_name LIKE '_____';
```

8. Write a query to display the last name of employees having 'e' as the third character.

```
SELECT last_name FROM `employees` WHERE last_name LIKE '__e%';
```

9. Write a query to display the jobs/designations available in the employees table.

```
SELECT job_id FROM `employees`;
```

10. Write a query to display the name (first_name, last_name), salary and PF (15% of salary) of all employees

```
SELECT first_name,last_name,salary,salary*.15 PF FROM `employees`;
```

11. Write a query to select all record from employees where last name in 'BLAKE', 'SCOTT', 'KING' and 'FORD'.

```
SELECT * FROM `employees` WHERE last_name IN('BLAKE','SCOTT','KING','FORD');
```

MySQL Aggregate Functions and Group by Exercises, Practice, Solution

1. Write a query to list the number of jobs available in the employees table.

```
SELECT COUNT(DISTINCT job_id) FROM `employees`;
```

2. Write a query to get the total salaries payable to employees

```
SELECT SUM(salary) FROM `employees`;
```

3. Write a query to get the minimum salary from employees table

```
SELECT MIN(salary) FROM `employees`;
```

4. Write a query to get the maximum salary of an employee working as a Programmer

```
SELECT max(salary) FROM `employees` WHERE job_id = ('IT_PROG');
```

5. Write a query to get the average salary and number of employees working the department 90.

```
SELECT AVG(salary),COUNT(employee_id) FROM `employees` WHERE department_id LIKE(90);
```

6. Write a query to get the highest, lowest, sum, and average salary of all employees.

```
SELECT ROUND (MIN(SALARY),0)AS HIGHSET,ROUND (MIN(SALARY),0)LOWEST,ROUND (AVG(SALARY),0)AVERAGE,ROUND (SUM(SALARY),0) FROM `employees`;
```

7. Write a query to get the number of employees with the same job.

```
SELECT job_id,COUNT(*) FROM `employees` GROUP BY job_id;
```

8. Write a query to get the difference between the highest and lowest salaries.

```
SELECT MAX(salary)-MIN(salary)AS DIFFERENCE FROM `employees`;
```

9. Write a query to find the manager ID and the salary of the lowest-paid employee for that manager.

	manager_id	MIN(salary)
<input type="checkbox"/> Edit Copy Delete	0	24000.00
<input type="checkbox"/> Edit Copy Delete	102	9000.00
<input type="checkbox"/> Edit Copy Delete	205	8300.00
<input type="checkbox"/> Edit Copy Delete	145	7000.00
<input type="checkbox"/> Edit Copy Delete	146	7000.00
<input type="checkbox"/> Edit Copy Delete	108	6900.00
<input type="checkbox"/> Edit Copy Delete	147	6200.00

```
SELECT manager_id,MIN(salary)FROM `employees` WHERE manager_id IS NOT NULL GROUP BY manager_id ORDER BY MIN(salary)DESC;
```

10. Write a query to get the department ID and the total salary payable in each department.

```
SELECT department_id,SUM(salary) FROM `employees` GROUP BY department_id;
```

	department_id	SUM(salary)
<input type="checkbox"/> Edit Copy Delete	0	7000.00
<input type="checkbox"/> Edit Copy Delete	10	4400.00
<input type="checkbox"/> Edit Copy Delete	20	19000.00
<input type="checkbox"/> Edit Copy Delete	30	24900.00
<input type="checkbox"/> Edit Copy Delete	40	6500.00

11. Write a query to get the average salary for each job ID excluding programmer.

```
SELECT job_id,AVG(salary)AS 'average_salary' FROM `employees` WHERE job_id != 'it_prog' GROUP BY job_id
```

	job_id	AVG(salary)
<input type="checkbox"/> Edit Copy Delete	AC_ACCOUNT	8300.000000
<input type="checkbox"/> Edit Copy Delete	AC_MGR	12000.000000
<input type="checkbox"/> Edit Copy Delete	AD_ASST	4400.000000
<input type="checkbox"/> Edit Copy Delete	AD_PRES	24000.000000

12. Write a query to get the total salary, maximum, minimum, average salary of employees (job ID wise), for department ID 90 only.

```
SELECT job_id,department_id,SUM(salary),MAX(salary),MIN(salary),AVG(salary)FROM `employees` WHERE department_id=90 GROUP BY job_id
```

	job_id	SUM(salary)	AVG(salary)	MAX(salary)	MIN(salary)
<input type="checkbox"/> Edit Copy Delete	AD_PRES	24000.00	24000.000000	24000.00	24000.00
<input type="checkbox"/> Edit Copy Delete	AD_VP	34000.00	17000.000000	17000.00	17000.00

13. Write a query to get the job ID and maximum salary of the employees where maximum salary is greater than or equal to \$4000.

```
SELECT job_id,MAX(salary)FROM `employees` GROUP BY job_id HAVING MAX(salary)>=4000
```

				job_id	MAX(salary)
<input type="checkbox"/>				AC_ACCOUNT	8300.00
<input type="checkbox"/>				AC_MGR	12000.00
<input type="checkbox"/>				AD_ASST	4400.00
<input type="checkbox"/>				AD_PRES	24000.00
<input type="checkbox"/>				AD_VP	17000.00

14. Write a query to get the average salary for all departments employing more than 10 employees.

```
SELECT department_id,AVG(salary) FROM `employees` GROUP BY department_id HAVING COUNT(*)>10;
```

department_id	AVG(salary)	COUNT(*)
50	3475.555556	45
80	8955.882353	34

MySQL Subquery - Exercises, Practice, Solution














- Write a query to find the name (first_name, last_name) and the salary of the employees who have a higher salary than the employee whose last_name='Bull'.

```
SELECT FIRST_NAME, LAST_NAME, SALARY FROM employees WHERE SALARY > (SELECT salary FROM employees WHERE last_name = 'Bull');
```

				FIRST_NAME	LAST_NAME	SALARY
<input type="checkbox"/>				Steven	King	24000.00
<input type="checkbox"/>				Neena	Kochhar	17000.00
<input type="checkbox"/>				Lex	De Haan	17000.00
<input type="checkbox"/>				Alexander	Hunold	9000.00
<input type="checkbox"/>				Bruce	Ernst	6000.00













- Write a query to find the name (first_name, last_name) of all employees who works in the IT department.

```
SELECT first_name,last_name FROM `employees` WHERE DEPARTMENT_ID IN(SELECT department_id FROM departments WHERE department_name = 'it');
```

				first_name	last_name
<input type="checkbox"/>				Alexander	Hunold
<input type="checkbox"/>				Bruce	Ernst
<input type="checkbox"/>				David	Austin
<input type="checkbox"/>				Valli	Pataballa
<input type="checkbox"/>				Diana	Lorentz
















3. Write a query to find the name (first_name, last_name) of the employees who have a manager and worked in a USA based department.

```
SELECT first_name, last_name FROM employees WHERE manager_id IN (select employee_id FROM employees WHERE department_id IN (SELECT department_id FROM departments WHERE location_id IN (select location_id from locations where country_id='US')))
```

				first_name	last_name
<input type="checkbox"/>				Neena	Kochhar
<input type="checkbox"/>				Lex	De Haan
<input type="checkbox"/>				Alexander	Hunold
<input type="checkbox"/>				Bruce	Ernst

4. Write a query to find the name (first_name, last_name) of the employees who are managers.

```
SELECT first_name, last_name FROM `employees` WHERE (employee_id IN (SELECT MANAGER_ID FROM employees));
```

				first_name	last_name
<input type="checkbox"/>				Steven	King
<input type="checkbox"/>				Neena	Kochhar
<input type="checkbox"/>				Lex	De Haan
<input type="checkbox"/>				Alexander	Hunold
<input type="checkbox"/>				Nancy	Greenberg

5. Write a query to find the name (first_name, last_name), and salary of the employees whose salary is greater than the average salary.

```
SELECT FIRST_NAME, LAST_NAME, SALARY FROM `employees` WHERE salary > (SELECT AVG(salary) FROM employees);
```


				FIRST_NAME	LAST_NAME	SALARY
<input type="checkbox"/>				Steven	King	24000.00
<input type="checkbox"/>				Neena	Kochhar	17000.00
<input type="checkbox"/>				Lex	De Haan	17000.00
<input type="checkbox"/>				Alexander	Hunold	9000.00
<input type="checkbox"/>				Nancy	Greenberg	12000.00

6. Write a query to find the name (first_name, last_name), and salary of the employees whose salary is equal to the minimum salary for their job grade.

```
SELECT first_name, last_name, salary FROM employees WHERE employees.salary = (SELECT min_salary FROM jobs WHERE employees.job_id = jobs.job_id);
```

				first_name	last_name	salary
<input type="checkbox"/>				Karen	Colmenares	2500.00
<input type="checkbox"/>				Martha	Sullivan	2500.00
<input type="checkbox"/>				Randall	Perkins	2500.00






















7. Write a query to find the name (first_name, last_name), and salary of the employees who earns more than the average salary and works in any of the IT departments

```
SELECT FIRST_NAME, LAST_NAME, SALARY FROM `employees` WHERE DEPARTMENT_ID in (SELECT DEPARTMENT_ID FROM departments WHERE department_name LIKE 'IT%') AND salary > (SELECT AVG(salary) FROM employees)
```

				FIRST_NAME	LAST_NAME	SALARY
<input type="checkbox"/>				Alexander	Hunold	9000.00

8. Write a query to find the name (first_name, last_name), and salary of the employees who earns more than the earning of Mr. Bell.

```
SELECT first_name, last_name, salary FROM `employees` WHERE SALARY > (SELECT salary FROM employees WHERE last_name='bell') ORDER BY FIRST_NAME;
```

				first_name	last_name	salary
<input type="checkbox"/>	 Edit	 Copy	 Delete	Adam	Fripp	8200.00
<input type="checkbox"/>	 Edit	 Copy	 Delete	Alberto	Errazuriz	12000.00
<input type="checkbox"/>	 Edit	 Copy	 Delete	Alexander	Hunold	9000.00
<input type="checkbox"/>	 Edit	 Copy	 Delete	Alexis	Bull	4100.00
<input type="checkbox"/>	 Edit	 Copy	 Delete	Allan	McEwen	9000.00
<input type="checkbox"/>	 Edit	 Copy	 Delete	Alyssa	Hutton	8800.00
<input type="checkbox"/>	 Edit	 Copy	 Delete	Amit	Banda	6200.00

9. Write a query to find the name (first_name, last_name), and salary of the employees who earn the same salary as the minimum salary for all departments.

```
SELECT * FROM employees WHERE salary = (SELECT MIN(salary) FROM employees );
```

			EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPART
<input type="checkbox"/>	Edit	Copy	Delete	132	TJ	Olson	TJOLSON	650.124.8234	1987-07-19	ST_CLERK	2100.00	0.00	121

10. Write a query to find the name (first_name, last_name), and salary of the employees whose salary is greater than the average salary of all departments.

```
SELECT * FROM `employees` WHERE salary > ALL (SELECT AVG(salary) FROM employees GROUP BY DEPARTMENT_ID);
```

			EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTME
<input type="checkbox"/>	Edit	Copy	Delete	100	Steven	King	SKING	515.123.4567	1987-06-17	AD_PRES	24000.00	0.00	0

11. Write a query to find the name (first_name, last_name) and salary of the employees who earn a salary that is higher than the salary of all the Shipping Clerk (JOB_ID = 'SH_CLERK'). Sort the results of the salary of the lowest to highest.

```
SELECT FIRST_NAME, LAST_NAME, JOB_ID, salary FROM `employees` WHERE salary > ALL (SELECT salary FROM employees WHERE JOB_ID = 'sh_clerk' ORDER BY SALARY DESC);
```

			first_name	last_name	job_id	salary
<input type="checkbox"/>	Edit	Copy	Delete	Steven	King	AD_PRES 24000.00
<input type="checkbox"/>	Edit	Copy	Delete	Neena	Kochhar	AD_VP 17000.00
<input type="checkbox"/>	Edit	Copy	Delete	Lex	De Haan	AD_VP 17000.00
<input type="checkbox"/>	Edit	Copy	Delete	John	Russell	SA_MAN 14000.00
<input type="checkbox"/>	Edit	Copy	Delete	Karen	Partners	SA_MAN 13500.00
<input type="checkbox"/>	Edit	Copy	Delete	Michael	Hartstein	MK_MAN 13000.00

12. Write a query to find the name (first_name, last_name) of the employees who are not supervisors.

```
SELECT b.first_name,b.last_name FROM employees b WHERE NOT EXISTS (SELECT 'X' FROM
a WHERE a.manager_id = b.employee_id);
```

			first_name	last_name
<input type="checkbox"/>	Edit	Copy	Delete	Bruce Ernst
<input type="checkbox"/>	Edit	Copy	Delete	David Austin
<input type="checkbox"/>	Edit	Copy	Delete	Valli Pataballa
<input type="checkbox"/>	Edit	Copy	Delete	Diana Lorentz











13. Write a query to display the employee ID, first name, last name, and department names of all employees.

```
SELECT employee_id, first_name, last_name, (SELECT department_name FROM departments d WHERE e.d
e.department_id = d.department_id) department FROM employees e ORDER BY department;
```

employee_id	first_name	last_name	department
178	Kimberely	Grant	NULL
206	William	Gietz	Accounting
205	Shelley	Higgins	Accounting
200	Jennifer	Whalen	Administration
100	Steven	King	Executive
102	Lex	De Haan	Executive

14. Write a query to display the employee ID, first name, last name, salary of all employees whose salary is above average for their departments.

```
SELECT employee_id,FIRST_NAME,LAST_NAME FROM `employees` WHERE SALARY>(SELECT AVG(salary
)FROM employees WHERE DEPARTMENT_ID=employees.DEPARTMENT_ID);
```

				employee_id	FIRST_NAME	LAST_NAME
<input type="checkbox"/>		Edit		Copy		Delete
				100	Steven	King
<input type="checkbox"/>		Edit		Copy		Delete
				101	Neena	Kochhar
<input type="checkbox"/>		Edit		Copy		Delete
				102	Lex	De Haan
<input type="checkbox"/>		Edit		Copy		Delete
				103	Alexander	Hunold
<input type="checkbox"/>		Edit		Copy		Delete
				108	Nancy	Greenberg

15. Write a query to fetch even numbered records from employees table.;

```
SET @i = 0;
SELECT i, employee_id FROM (SELECT @i := @i + 1 AS i, employee_id FROM employees) a WHERE MOD(a.i, 2) = 0;
```

i	employee_id
2	101
4	103
6	105
8	107

16. Write a query to find the 5th maximum salary in the employees table.

```
SELECT DISTINCT salary FROM employees ORDER BY salary DESC LIMIT 1 OFFSET 4;
```

	salary
<input type="checkbox"/>	Edit Copy Delete 13000.00

17. Write a query to find the 4th minimum salary in the employees table.

```
SELECT DISTINCT salary FROM employees ORDER BY salary ASC LIMIT 1 OFFSET 3;
```

	salary
<input type="checkbox"/>	Edit Copy Delete 2500.00

18. Write a query to select last 10 records from a table

```
SELECT * FROM (SELECT * FROM employees ORDER BY employee_id DESC LIMIT 10) sub ORDER BY employee_id ASC;
```

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
197	Kevin	Feeney	KFEENEY	650.507.9822	1987-09-22	SH_CLERK	3000.00	0.00	124	50
198	Donald	OConnell	DOCONNEL	650.507.9833	1987-09-23	SH_CLERK	2600.00	0.00	124	50
199	Douglas	Grant	DGRANT	650.507.9844	1987-09-24	SH_CLERK	2600.00	0.00	124	50
200	Jennifer	Whalen	JWHALEN	515.123.4444	1987-09-25	AD_ASST	4400.00	0.00	101	10
201	Michael	Hartstein	MHARTSTE	515.123.5555	1987-09-26	MK_MAN	13000.00	0.00	100	20
202	Pat	Fay	PFAY	603.123.6666	1987-09-27	MK_REP	6000.00	0.00	201	20
203	Susan	Mavris	SMAVRIS	515.123.7777	1987-09-28	HR_REP	6500.00	0.00	101	40
204	Hermann	Baer	HBAER	515.123.8888	1987-09-29	PR_REP	10000.00	0.00	101	70
205	Shelley	Higgins	SHIGGINS	515.123.8080	1987-09-30	AC_MGR	12000.00	0.00	101	110
206	William	Gietz	WGIEZT	515.123.8181	1987-10-01	AC_ACCOUNT	8300.00	0.00	205	110

19. Write a query to list the department ID and name of all the departments where no employee is working.

```
SELECT * FROM departments WHERE department_id NOT IN (select department_id FROM employees);
```

	DEPARTMENT_ID	DEPARTMENT_NAME	MANAGER_ID	LOCATION_ID
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	120	Treasury	0	1700
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	130	Corporate Tax	0	1700
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	140	Control And Credit	0	1700
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	150	Shareholder Services	0	1700

20. Write a query to get 3 maximum salaries.

```
SELECT DISTINCT salary FROM employees ORDER BY salary DESC LIMIT 3;
```

	salary
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	24000.00
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	17000.00
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	14000.00

21. Write a query to get 3 minimum salaries.

```
SELECT DISTINCT salary FROM employees ORDER BY salary ASC LIMIT 3;
```

	salary
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	2100.00
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	2200.00
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	2400.00

22. Write a query to get nth max salaries of employees.

```
SELECT * FROM employees emp1 WHERE (1) = ( SELECT COUNT(DISTINCT(emp2.salary)) FROM employees emp2 WHERE emp2.salary > emp1.salary);
```

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	101	Neena	Kochhar	NKOCHHAR	515.123.4568	1987-06-18	AD_VP	17000.00	0.00	100	90
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	102	Lex	De Haan	LDEHAAN	515.123.4569	1987-06-19	AD_VP	17000.00	0.00	100	90

MySQL JOINS - Exercises, Practice, Solution

1. Write a query to find the addresses (location_id, street_address, city, state_province, country_name) of all the departments.

Hint : Use NATURAL JOIN.

```
SELECT location_id, street_address, city, state_province, country_name FROM locations NATURAL JOIN countries;
```

location_id	street_address	city	state_province	country_name
1000	1297 Via Cola di Rie	Roma		Italy
1100	93091 Calle della Testa	Venice		Italy
1200	2017 Shinjuku-ku	Tokyo	Tokyo Prefecture	Japan
1300	9450 Kamiya-cho	Hiroshima		Japan
1400	2014 Jabberwocky Rd	Southlake	Texas	United States of America
1500	2011 Interiors Blvd	South San Francisco	California	United States of America
1600	2007 Zagora St	South Brunswick	New Jersey	United States of America
1700	2004 Charade Rd	Seattle	Washington	United States of America

2. Write a query to find the name (first_name, last name), department ID and name of all the employees.

```
SELECT first_name, last_name, department_id, department_name FROM employees JOIN departments USING (department_id);
```

first_name	last_name	department_id	department_name
Steven	King	90	Executive
Neena	Kochhar	90	Executive
Lex	De Haan	90	Executive
Alexander	Hunold	60	IT
Bruce	Ernst	60	IT

3. Write a query to find the name (first_name, last_name), job, department ID and name of the employees who works in London.

```
SELECT e.first_name, e.last_name, e.job_id, e.department_id, d.department_name FROM employees e JOIN departments d ON (e.department_id = d.department_id) JOIN locations l ON (d.location_id = l.location_id) WHERE LOWER(l.city) = 'London';
```

first_name	last_name	job_id	department_id	department_name
Susan	Mavris	HR_REP	40	Human Resources

4. Write a query to find the employee id, name (last_name) along with their manager_id and name (last_name).

```
SELECT e.employee_id 'Emp_Id', e.last_name 'Employee', m.employee_id 'man_Id', m.last_name 'Manager' FROM employees e JOIN employees m ON (e.MANAGER_ID = m.EMPLOYEE_ID);
```

Emp_Id	Employee	man_Id	Manager
101	Kochhar	100	King
102	De Haan	100	King
103	Hunold	102	De Haan
104	Ernst	103	Hunold
105	Austin	103	Hunold
106	Pataballa	103	Hunold

5. Write a query to find the name (first_name, last_name) and hire date of the employees who was hired after 'Jones'.

```
SELECT e.first_name, e.last_name, e.hire_date FROM employees e JOIN employees A ON (A.last_name = 'Jones') WHERE A.hire_date < e.hire_date;
```

first_name	last_name	hire_date
Alana	Walsh	1987-09-21
Kevin	Feeney	1987-09-22
Donald	OConnell	1987-09-23
Douglas	Grant	1987-09-24
Jennifer	Whalen	1987-09-25
Michael	Hartstein	1987-09-26
Pat	Fay	1987-09-27
Susan	Mavris	1987-09-28
Hermann	Baer	1987-09-29
Shelley	Higgins	1987-09-30
William	Gietz	1987-10-01

6. Write a query to get the department name and number of employees in the department.

```
SELECT department_name AS 'Department Name', COUNT(*) AS 'NO Employees' FROM departments INNER JOIN employees ON (employees.DEPARTMENT_ID = departments.DEPARTMENT_ID) GROUP BY (departments.DEPARTMENT_ID) ORDER BY department_name;
```

Department Name	NO Employees
Accounting	2
Administration	1
Executive	3
Finance	6
Human Resources	1
IT	5
Marketing	2

7. Write a query to find the employee ID, job title, number of days between ending date and starting date for all jobs in department 90.

```
SELECT employee_id, job_title, end_date - start_date days FROM job_history NATURAL JOIN jobs WHERE department_id = 90;
```

employee_id	job_title	days
200	Administration Assistant	59700
200	Public Accountant	40530

8. Write a query to display the department ID and name and first name of manager.

```
SELECT d.department_id,d.department_name,d.manager_id,e.first_name FROM `departments` d INNER JOIN employees e ON(d.manager_id= e.employee_id);
```

department_id	department_name	manager_id	first_name
10	Administration	200	Jennifer
20	Marketing	201	Michael
30	Purchasing	114	Den
40	Human Resources	203	Susan
50	Shipping	121	Adam
60	IT	103	Alexander

9. Write a query to display the department name, manager name, and city.

```
SELECT d.department_name,e.first_name,l.city FROM departments d JOIN employees e ON(d.manager_id=e.employee_id) JOIN locations l USING (location_id);
```

department_name	first_name	city
Administration	Jennifer	Seattle
Marketing	Michael	Toronto
Purchasing	Den	Seattle
Human Resources	Susan	London
Shipping	Adam	South San Francisco

10. Write a query to display the job title and average salary of employees.

```
SELECT job_title,AVG(salary) FROM `employees` NATURAL JOIN jobs GROUP BY JOB_TITLE;
```

job_title	AVG(salary)
Accountant	7920.000000
Accounting Manager	12000.000000
Administration Assistant	4400.000000
Administration Vice President	17000.000000
Finance Manager	12000.000000
Human Resources Representative	6500.000000
Marketing Manager	13000.000000
Marketing Representative	6000.000000
President	24000.000000
Programmer	5760.000000

11. Write a query to display job title, employee name, and the difference between salary of the employee and minimum salary for the job.

```
SELECT job_title,first_name,salary-min_salary FROM `employees` NATURAL JOIN jobs;
```

job_title	first_name	salary-min_salary
President	Steven	4000.00
Administration Vice President	Neena	2000.00
Administration Vice President	Lex	2000.00
Programmer	Alexander	5000.00
Programmer	Bruce	2000.00

12. Write a query to display the job history that were done by any employee who is currently drawing more than 10000 of salary.

```
SELECT jh.* FROM `job_history`jh JOIN employees e ON(jh.employee_id=e.employee_id)WHERE salary>10000;
```

EMPLOYEE_ID	START_DATE	END_DATE	JOB_ID	DEPARTMENT_ID
102	1993-01-13	1998-07-24	IT_PROG	60
101	1989-09-21	1993-10-27	AC_ACCOUNT	110
101	1993-10-28	1997-03-15	AC_MGR	110
201	1996-02-17	1999-12-19	MK_REP	20
114	1998-03-24	1999-12-31	ST_CLERK	50

13. Write a query to display department name, name (first_name, last_name), hire date, salary of the manager for all managers whose experience is more than 15 years.

```
SELECT first_name,last_name,hire_date,salary,(datediff(now(),hire_date))/365 Experience FROM `departments` d JOIN employees e ON (d.MANAGER_ID=e.EMPLOYEE_ID)WHERE (datediff(now(),hire_date))/365>15;
```

first_name	last_name	hire_date	salary	Experience
Steven	King	1987-06-17	24000.00	36.3342
Alexander	Hunold	1987-06-20	9000.00	36.3260
Nancy	Greenberg	1987-06-25	12000.00	36.3123
Den	Raphaely	1987-07-01	11000.00	36.2959
Adam	Fripp	1987-07-08	8200.00	36.2767
John	Russell	1987-08-01	14000.00	36.2110
Jennifer	Whalen	1987-09-25	4400.00	36.0603
Michael	Hartstein	1987-09-26	13000.00	36.0575

MySQL Date and Time - Exercises, Practice, Solution

1. Write a query to display the first day of the month (in datetime format) three months before the current month.

```
SELECT DATE_SUB(DATE_FORMAT(CURDATE(), '%Y-%m-01'), INTERVAL 3 MONTH) AS first_day_of_previous_month;
```

first_day_of_previous_month

2023-07-01

2. Write a query to display the last day of the month (in datetime format) three months before the current month.

```
SELECT DATE_SUB(DATE_FORMAT(CURDATE(), '%Y-%m-31'), INTERVAL 3 MONTH) AS first_day_of_previous_month;
```

last_day_of_previous_month

2023-07-31

3. Write a query to get the distinct Mondays from hire_date in employees tables.

```
SELECT DISTINCT (STR_TO_DATE (CONCAT(YEARWEEK(hire_date), '1'), '%x%v%w')) FROM employees;  
(STR_TO_DATE (CONCAT(YEARWEEK(hire_date), '1'), '%x%v%w'))
```

1987-06-08

1987-06-15

1987-06-22

1987-06-29

1987-07-06

1987-07-13

1987-07-20

1987-07-27

1987-08-03

1987-08-10

4. Write a query to get the first day of the current year.

```
SELECT DATE_FORMAT(CURDATE(), '%Y-01-01') AS first_day_of_current_year;
```

first_day_of_current_year

2023-01-01

5. Write a query to get the last day of the current year.

```
SELECT DATE_FORMAT(CURDATE(), '%Y-01-31') AS first_day_of_current_year;
```

first_day_of_current_year

2023-01-31

6. Write a query to calculate the age in year.

```
SELECT TIMESTAMPDIFF(YEAR, '1967-06-08', CURRENT_DATE) AS age;
```

age

56

7. Write a query to get the current date in the following format.

```
SELECT DATE_FORMAT(CURDATE(), '%M %d, %Y') AS 'Current_date';
```

Current_date

October 08, 2023

8. Write a query to get the current date in Thursday September 2014 format.

```
SELECT DATE_FORMAT(NOW(), '%W %M %Y');
```

DATE_FORMAT(NOW(), '%W %M %Y')

Sunday October 2023

9. Write a query to extract the year from the current date.

```
SELECT extract(year FROM now());
```

extract(year FROM now())

2023