

# SQL CASE STUDY

## DATA IN MOTION HUMAN RESOURCES



<https://d-i-motion.com/lessons/kedeishas-banking-services/>

# SQL Case Study 2: Human Resources

**Question 1:. Find the longest ongoing project for each department.**

```
95
96  -- Solution 1
97 • SELECT D.name1 as Departments,P.name1,P.start_date,P.end_date, P.department_id
98  from Departments D inner join Projects P
99  on D.id=P.department_id
100 WHERE CURDATE() between start_date and end_date
101 order by department_id;
102
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

	Departments	name1	start_date	end_date	department_id
▶	HR	HR Project 1	2023-01-01	2023-06-30	1
	IT	IT Project 1	2023-02-01	2023-07-31	2
	Sales	Sales Project 1	2023-03-01	2023-08-31	3

```
104  -- Solution 2
105
106 • select D.name1 as Departments,P.name1,P.start_date,P.end_date, P.department_id
107  from Departments D inner join Projects P
108  on D.id=P.department_id
109  where curdate() >= start_date and
110         curdate() <= end_date;
111
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

	Departments	name1	start_date	end_date	department_id
▶	HR	HR Project 1	2023-01-01	2023-06-30	1
	IT	IT Project 1	2023-02-01	2023-07-31	2
	Sales	Sales Project 1	2023-03-01	2023-08-31	3

# Question 2:. Find all employees who are not managers.

```
111
112  -- 2. Find all employees who are not managers.
113
114  -- Solution 1
115 • select * from employees |
116     where id not in (select id from departments);
117
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

	id	name1	hire_date	job_title	department_id
▶	4	Bob Miller	2021-04-30	HR Associate	1
	5	Charlie Brown	2022-10-01	IT Associate	2
	6	Dave Davis	2023-03-15	Sales Associate	3
*	NULL	NULL	NULL	NULL	NULL

```
117
118  -- Solution 2 |
119 • select E.*, M.manager_id
120     from employees E
121     left JOIN Departments M ON E.id = M.id
122     where manager_id is null;
123
```




Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

	id	name1	hire_date	job_title	department_id	manager_id
▶	4	Bob Miller	2021-04-30	HR Associate	1	NULL
	5	Charlie Brown	2022-10-01	IT Associate	2	NULL
	6	Dave Davis	2023-03-15	Sales Associate	3	NULL

# Question 3: Find all employees who have been hired after the start of a project in their department.

```
125
126 -- Solution 1
127 • select E.*,P.start_date,P.end_date from Employees E inner join Projects P
128 on E.department_id=P.department_id
129 where hire_date >= start_date and hire_date <= end_date;
130
131 -- Solution 2
132 • select E.*,P.start_date,P.end_date from Employees E inner join Projects P
133 on E.department_id=P.department_id
134 where hire_date between start_date and end_date;
135
```

<

Result Grid |  Filter Rows:  | Export:  | Wrap Cell Content: 

	id	name1	hire_date	job_title	department_id	start_date	end_date
▶	6	Dave Davis	2023-03-15	Sales Associate	3	2023-03-01	2023-08-31

## Question 4:. Rank employees within each department based on their hire date (earliest hire gets the highest rank)

```
136  -- 4. Rank employees within each department based on their hire date (earliest hire gets the highest rank).
137
138  with cte as (
139      select *,
140      rank() over(partition by department_id order by hire_date) as Highest_rank
141  from employees)
142  select * from cte
143  where Highest_rank =1;
144
```

<

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

	id	name1	hire_date	job_title	department_id	Highest_rank
▶	1	John Doe	2018-06-20	HR Manager	1	1
	2	Jane Smith	2019-07-15	IT Manager	2	1
	3	Alice Johnson	2020-01-10	Sales Manager	3	1

# Question 5:. Find the duration between the hire date of each employee and the hire date of the next employee hired in the same department.

```
146
147 -- 5. Find the duration between the hire date of each employee and the hire date of
148 -- the next employee hired in the same department.
149
150 with cte as (
151     select *, datediff(curdate(), Hire_Date) as No_of_days_Different,
152     row_number() over(partition by department_id order by hire_date) RW
153     from employees)
154 , cte1 as (select *,
155     lead(No_of_days_Different) over(partition by department_id order by hire_date) as next_employee_days
156     from cte)
157 select *, No_of_days_Different-next_employee_days as No_of_days_diff_between_employees_days
158 from cte1
159 where next_employee_days is not null;
160
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

	id	name1	hire_date	job_title	department_id	No_of_days_Different	RW	next_employee_days	No_of_days_diff_between_employees_days
▶	1	John Doe	2018-06-20	HR Manager	1	1812	1	767	1045
	2	Jane Smith	2019-07-15	IT Manager	2	1422	1	248	1174
	3	Alice Johnson	2020-01-10	Sales Manager	3	1243	1	83	1160