

## 9 • SELECT

```

10     COUNT(*) - COUNT(Department) as null_department,
11     COUNT(*) - COUNT(JobRole) as null_jobrole,
12     COUNT(*) - COUNT(MonthlyIncome) as null_income,
13     COUNT(*) - COUNT(YearsAtCompany) as null_years,
14     COUNT(DISTINCT Department) as unique_departments,
15     COUNT(DISTINCT JobRole) as unique_jobroles,
16     COUNT(DISTINCT EducationField) as unique_edufields

```

Result Grid     Filter Rows: <input type="text"/>   Export:    Wrap Cell Content:						
null_department	null_jobrole	null_income	null_years	unique_departments	unique_jobroles	unique_edufields
0	0	0	0	3	9	6

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator: ibm hr employees x

Limit to 1000 rows

1 -- Initial Data Quality Check  
 2 • SELECT  
 3 COUNT(\*) as total\_employees,  
 4 SUM(CASE WHEN Attrition = 'Yes' THEN 1 ELSE 0 END) as attrition\_count,  
 5 ROUND(AVG(CASE WHEN Attrition = 'Yes' THEN 1 ELSE 0 END) \* 100, 2) as attrition\_rate  
 6 FROM employees;  
 7  
 8 -- Check for Null values  
 9 --

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

total_employees	attrition_count	attrition_rate
1470	237	16.12

Administration Schemas

Information

Connection Details

Name: Local instance  
 MySQL80  
 Host: localhost  
 Port: 3306  
 Login: root  
 User: root@localhost  
 Current User: root@localhost  
 SSL: SSL not used  
 cipher:  
 Server: MySQL  
 Product: Community

Result 24 x

Output

Action Output

#	Time	Action	Message	D
197	21:48:53	SELECT Department, JobRole, Gender, MaritalStatus, EducationField, CAST...	226 row(s) returned	0.1
198	13:51:59	SELECT COUNT(*) as total_employees, SUM(CASE WHEN Attrition = 'Yes' THEN 1 E...	1 row(s) returned	0.1

**Result Grid**

	total_employees	attrition_count	attrition_rate
▶	1470	237	16.12

  

**Output**

Action Output

#	Time	Action	Message
✓ 197	21:48:53	SELECT Department, JobRole, Gender, MaritalStatus, EducationField, CAST...	226 row(s) returned
✓ 198	13:51:59	SELECT COUNT(*) as total_employees, SUM(CASE WHEN Attrition = "Yes" THEN 1 E...	1 row(s) returned

  

**ibm hr employees**

```

8      -- Check for Null values
9      • SELECT
10         COUNT(*) - COUNT(Department) as null_department,
11         COUNT(*) - COUNT(JobRole) as null_jobrole,
12         COUNT(*) - COUNT(MonthlyIncome) as null_income,
13         COUNT(*) - COUNT(YearsAtCompany) as null_years,
14         COUNT(DISTINCT Department) as unique_departments,
15         COUNT(DISTINCT JobRole) as unique_jobroles,
--

```

**Result Grid**

	null_department	null_jobrole	null_income	null_years	unique_departments	unique_jobroles	unique_edufields
▶	0	0	0	0	3	9	6



ibm hr employees x

Limit to 1000 rows

```

37 • SELECT
38     Department,
39     COUNT(*) as total_employees,
40     SUM(CASE WHEN Attrition = 'Yes' THEN 1 ELSE 0 END) as attrition_count,
41     ROUND(AVG(CASE WHEN Attrition = 'Yes' THEN 1 ELSE 0 END) * 100, 2) as attrition_rate,
42     ROUND(AVG(JobSatisfaction), 2) as avg_job_satisfaction,
43     ROUND(AVG(MonthlyIncome), 2) as avg_monthly_income
44 FROM employees

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: [IA](#)

	Department	total_employees	attrition_count	attrition_rate	avg_job_satisfaction	avg_monthly_income
▶	Sales	446	92	20.63	2.75	6959.17
	Human Resources	63	12	19.05	2.60	6654.51
	Research & Development	961	133	13.84	2.73	6281.25

-- Create backup table

```

CREATE TABLE employees_backup AS SELECT * FROM
employees;

```

ibm hr employees x

Limit to 1000 rows

```

48 -- Salary Analysis
49 • SELECT
50     JobRole,
51     Department,
52     COUNT(*) as employee_count,
53     ROUND(AVG(MonthlyIncome), 2) as avg_monthly_income,
54     ROUND(MIN(MonthlyIncome), 2) as min_monthly_income,
55     ROUND(MAX(MonthlyIncome), 2) as max_monthly_income,

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: [IA](#)

	JobRole	Department	employee_count	avg_monthly_income	min_monthly_income	max_monthly_income	avg_salary_hike
▶	Manager	Human Resources	11	18088.64	14026	19717	14.55
	Manager	Research & Development	54	17130.33	11244	19999	14.93
	Manager	Sales	37	16986.97	11557	19847	15.62
	Research Director	Research & Development	80	16033.55	11031	19973	14.95
	Healthcare Representative	Research & Development	131	7528.76	4000	13966	15.45
	Manufacturing Director	Research & Development	145	7295.14	4011	13973	15.59
	Sales Executive	Sales	326	6924.28	4001	13872	14.89
	Human Resources	Human Resources	52	4235.75	1555	10725	14.81
	Research Scientist	Research & Development	292	3239.97	1009	9724	15.45
	Lab Assistant	Research & Development	268	2237.17	1103	7403	15.05

```

61  -- Experience and Tenure Analysis
62  •  SELECT
63      JobRole,
64      ROUND(AVG(TotalWorkingYears), 2) as avg_total_experience,
65      ROUND(AVG(YearsAtCompany), 2) as avg_company_tenure,
66      ROUND(AVG(YearsInCurrentRole), 2) as avg_role_tenure,
67      ROUND(AVG(YearsSinceLastPromotion), 2) as avg_years_since_promotion,
68      ROUND(AVG(YearsWithCurrManager), 2) as avg_years_with_manager

```

Result Grid   Filter Rows:   Export:   Wrap Cell Content:						
	JobRole	avg_total_experience	avg_company_tenure	avg_role_tenure	avg_years_since_promotion	avg_years_with_manager
▶	Manager	24.55	14.43	6.45	4.83	6.27
	Research Director	21.40	10.94	6.29	3.19	6.08
	Healthcare Representative	14.07	8.37	4.86	2.97	4.57
	Manufacturing Director	12.79	7.60	4.97	2.12	4.94
	Sales Executive	11.10	7.50	4.86	2.48	4.68
	Human Resources	8.17	5.33	3.13	1.27	3.17
	Research Scientist	7.72	5.11	3.27	1.51	3.21
	Laboratory Technician	7.66	5.02	3.20	1.42	3.30
	Sales Representative	4.67	2.92	2.01	1.06	1.66

```

73  -- Satisfaction Metrics Analysis
74  •  SELECT
75      Department,
76      JobRole,
77      ROUND(AVG(JobSatisfaction), 2) as avg_job_satisfaction,
78      ROUND(AVG(EnvironmentSatisfaction), 2) as avg_env_satisfaction,
79      ROUND(AVG(WorkLifeBalance), 2) as avg_work_life_balance,
80      ROUND(AVG(RelationshipSatisfaction), 2) as avg_relationship_satisfaction

```

Result Grid   Filter Rows:   Export:   Wrap Cell Content:						
	Department	JobRole	avg_job_satisfaction	avg_env_satisfaction	avg_work_life_balance	avg_relationship_satisfaction
▶	Human Resources	Manager	2.82	3.09	2.91	2.55
	Human Resources	Human Resources	2.56	2.60	2.92	2.96
	Research & Development	Healthcare Representative	2.79	2.77	2.70	2.69
	Research & Development	Research Scientist	2.77	2.73	2.68	2.71
	Research & Development	Research Director	2.70	2.50	2.86	2.69
	Research & Development	Laboratory Technician	2.69	2.72	2.72	2.69
	Research & Development	Manufacturing Director	2.68	2.92	2.77	2.72
	Research & Development	Manager	2.65	2.80	2.76	2.85
	Sales	Manager	2.76	2.62	2.76	2.84
	Sales	Sales Executive	2.75	2.67	2.80	2.70

Result 1 x

```

15
16 -- Work-Life Balance Impact
17 • SELECT
18     WorkLifeBalance,
19     COUNT(*) as employee_count,
20     ROUND(AVG(CASE WHEN Attrition = 'Yes' THEN 1 ELSE 0 END) * 100, 2) as attrition_rate,
21     ROUND(AVG(JobSatisfaction), 2) as avg_job_satisfaction,
22     ROUND(AVG(MonthlyIncome), 2) as avg_monthly_income,
23     ROUND(AVG(TotalWorkingYears), 2) as avg_working_years

```

WorkLifeBalance	employee_count	attrition_rate	avg_job_satisfaction	avg_monthly_income	avg_working_years
1	80	31.25	2.65	5887.14	10.68
2	344	16.86	2.84	6461.81	11.55
3	893	14.22	2.69	6532.23	11.23
4	153	17.65	2.75	6746.35	11.31

```

126 ORDER BY WorkLifeBalance;
127
128 -- Career Development Analysis
129 • SELECT
130     Department,
131     JobLevel,
132     ROUND(AVG(TrainingTimesLastYear), 2) as avg_training_times,
133     ROUND(AVG(YearsSinceLastPromotion), 2) as avg_years_since_promotion,
134     COUNT(*) as employee_count,
135     SUM(CASE WHEN Attrition = 'Yes' THEN 1 ELSE 0 END) as attrition_count
136 FROM employees
137 GROUP BY Department, JobLevel

```

Department	JobLevel	avg_training_times	avg_years_since_promotion	employee_count	attrition_count
Human Resources	1	2.67	1.21	33	10
Human Resources	2	2.62	1.15	13	0
Human Resources	3	1.83	1.83	6	2
Human Resources	4	3.00	2.75	4	0
Human Resources	5	2.29	5.00	7	0

Result 5 x

ibm hr employees

Limit to 1000 rows

```

140 -- Create view for dashboard reporting
141 • CREATE VIEW vw_employee_summary AS
142 SELECT
143     Department,
144     JobRole,
145     COUNT(*) as total_employees,
146     ROUND(AVG(MonthlyIncome), 2) as avg_salary,
147     ROUND(AVG(YearsAtCompany), 2) as avg_tenure,
148     ROUND(AVG(JobSatisfaction), 2) as avg_satisfaction,
149     SUM(CASE WHEN Attrition = 'Yes' THEN 1 ELSE 0 END) as attrition_count,
150     ROUND(AVG(CASE WHEN Attrition = 'Yes' THEN 1 ELSE 0 END) * 100, 2) as attrition_rate
151 FROM employees
152 GROUP BY Department, JobRole;

-- Export summary for visualization
SELECT
    Department,
    JobRole,
    Gender,
    MaritalStatus,
    EducationField,
    AVG(MonthlyIncome) as avg_income,
    AVG(YearsAtCompany) as avg_tenure,
    AVG(JobSatisfaction) as avg_satisfaction,
    COUNT(*) as employee_count,
    SUM(CASE WHEN Attrition = 'Yes' THEN 1 ELSE 0 END) as attrition_count
FROM employees
GROUP BY Department, JobRole, Gender, MaritalStatus, EducationField
ORDER BY Department, JobRole;

SELECT
    Department,
    JobRole,

```