```sql
-- a) Return the shape of the table

SELECT

        (SELECT COUNT(*) FROM EmployeeHRData) AS row_count,

        (SELECT COUNT(*) FROM INFORMATION_SCHEMA.COLUMNS WHERE
TABLE_NAME='EmployeeHRData') AS column_count

-- insight: output table shows count of rows and columns in the main table
```
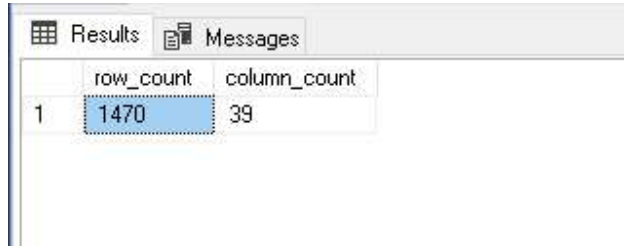
	row_count	column_count
1	1470	39

```sql
-- b) Calculate the cumulative sum of total working years for each department

SELECT Department, Total_Working_Years,

SUM(Total_Working_Years) OVER(PARTITION BY Department ORDER BY Department ROWS
BETWEEN UNBOUNDED PRECEDING AND CURRENT ROW) AS cumulative_years

FROM EmployeeHRData;

-- insight: cumulative sum of total working years, partitioned by department, is
calculated
```

	Department	Total_Working_Years	cumulative_years
1	HR	16	16
2	HR	7	23
3	HR	23	46
4	HR	30	76
5	HR	8	84
6	HR	12	96
7	HR	7	103
8	HR	9	112
9	HR	4	116
10	HR	1	117
11	HR	11	128
12	HR	8	136
13	HR	32	168
14	HR	10	178
15	HR	16	194
16	HR	23	217
17	HR	22	239
18	HR	12	251
19	HR	8	259
20	HR	4	263
21	HR	6	269
22	HR	6	275
23	HR	13	288
24	HR	7	295
25	HR	6	301
26	HR	24	325
27	HR	7	332
28	HR	6	338
29	HR	5	343
30	HR	10	353
31	HR	14	367
32	HR	10	377
33	HR	6	383
34	HR	27	410
35	HR	8	418

Query executed successfully

	Department	Total_Working_Years	cumulative_years
43	HR	1	554
44	HR	10	564
45	HR	10	574
46	HR	10	584
47	HR	3	587
48	HR	8	595
49	HR	9	604
50	HR	35	639
51	HR	14	653
52	HR	7	660
53	HR	9	669
54	HR	6	675
55	HR	10	685
56	HR	21	706
57	HR	6	712
58	HR	1	713
59	HR	2	715
60	HR	2	717
61	HR	1	718
62	HR	6	724
63	HR	4	728
64	R&D	4	4
65	R&D	1	5
66	R&D	10	15
67	R&D	5	20
68	R&D	20	40
69	R&D	11	51
70	R&D	13	64
71	R&D	5	69
72	R&D	1	70
73	R&D	1	71
74	R&D	9	80
75	R&D	1	81
76	R&D	1	82
77	R&D	6	88

```
-- c) Which gender have higher strength as workforce in each department

SELECT Department, Gender, gender_freq

FROM (

        SELECT Department, Gender, COUNT(Gender) as gender_freq, DENSE_RANK()
OVER(PARTITION BY Department ORDER BY COUNT(Gender) DESC) AS freq_ranking

        FROM EmployeeHRData

        GROUP BY Department, Gender

) AS _

WHERE freq_ranking = 1;

-- insight: found that for departments 'HR', 'R&D' and 'Sales', gender 'Male'
has higher strength in workforce
```

```
-- d) Create a new column AGE_BAND and Show Distribution of Employee's Age band
group (Below 25, 25-34, 35-44, 45-55. ABOVE 55).

ALTER TABLE EmployeeHRData ADD AGE_BAND VARCHAR(20);


UPDATE EmployeeHRData

        SET AGE_BAND =

                CASE

                        WHEN Age < 25 THEN 'Below 25'

                        WHEN Age BETWEEN 25 AND 34 THEN '25-34'

                        WHEN Age BETWEEN 35 AND 44 THEN '35-44'

                        WHEN Age BETWEEN 45 AND 55 THEN '45-55'

                        WHEN Age > 55 THEN 'ABOVE 55'

                        ELSE NULL

                END;


SELECT AGE_BAND, COUNT(*) AS age_band_distribution

FROM EmployeeHRData

GROUP BY AGE_BAND;

-- insight: altered table to add a new column and set values according to given
band groups. then used aggregate function COUNT to find distribution
```


4

```sql
-- e) Compare all marital status of employee and find the most frequent marital
status

SELECT Marital_Status, COUNT(Marital_Status) AS Marital_Status_frequency

FROM EmployeeHRData

GROUP BY Marital_Status

ORDER BY COUNT(Marital_Status) DESC;

-- insight: from the given dataset, most frequent marital status is 'Married'
with a frequency of 673
```

	Marital_Status	Marital_Status_frequency
1	Married	673
2	Single	470
3	Divorced	327

```sql
-- f) Show the Job Role with Highest Attrition Rate (Percentage)
SELECT Job_Role, attrition_count_in_dept, total_count_in_dept,
ROUND(attrition_count_in_dept*100.0/total_count_in_dept, 2) AS
attrition_percentage_in_department

FROM (

        SELECT Job_Role, COUNT(*) AS total_count_in_dept,

        SUM(

                CASE

                        WHEN Attrition = 'Yes' THEN 1

                        ELSE 0

                END

        ) as attrition_count_in_dept

        FROM EmployeeHRData

        GROUP BY Job_Role

) AS _

ORDER BY attrition_percentage_in_department DESC;

-- insight: job role with highest rate of attrition is 'Sales Representative'
```

	Job_Role	attrition_count_in_dept	total_count_in_dept	attrition_percentage_in_department
1	Sales Representative	33	83	39.760000000000
2	Laboratory Technician	62	259	23.940000000000
3	Human Resources	12	52	23.080000000000
4	Sales Executive	57	326	17.480000000000
5	Research Scientist	47	292	16.100000000000
6	Manufacturing Director	10	145	6.900000000000
7	Healthcare Representative	9	131	6.870000000000
8	Manager	5	102	4.900000000000
9	Research Director	2	80	2.500000000000

-- g) Show distribution of Employee's Promotion, Find the maximum chances of employee getting promoted.

SELECT Years_Since_Last_Promotion, COUNT(*) AS frequency

FROM EmployeeHRData

GROUP BY Years_Since_Last_Promotion

ORDER BY COUNT(*) DESC;

-- above query shows distribution of promotions based on years since last promotion.

-- from its result we see that only a few employees have not been promoted for a long time

	Years_Since_Last_Promotion	frequency
1	0	581
2	1	357
3	2	159
4	7	76
5	4	61
6	3	52
7	5	45
8	6	32
9	11	24
10	8	18
11	9	17
12	15	13
13	12	10
14	13	10
15	14	9
16	10	6

6

```sql
SELECT Years_Since_Last_Promotion, Total_Working_Years,  COUNT(*) AS frequency

FROM EmployeeHRData

WHERE Years_At_Company>0

GROUP BY Total_Working_Years, Years_Since_Last_Promotion

ORDER BY COUNT(*) DESC, Years_Since_Last_Promotion, Total_Working_Years;
```

-- from the above SQL query, it can be found that those who have worked for longer have been promoted more

	Years_Since_Last_Promotion	Total_Working_Years	frequency
1	0	10	74
2	0	1	66
3	1	6	61
4	0	5	46
5	1	10	45
6	0	7	42
7	0	6	40
8	0	8	40
9	0	9	35
10	1	9	35
11	1	8	27
12	1	5	25
13	7	10	25
14	0	4	21
15	2	4	20
16	2	2	19
17	1	4	18
18	1	7	18
19	0	12	15
20	7	8	15
21	1	3	14
22	0	3	13
23	0	11	13
24	2	3	13
25	2	6	13
26	0	16	12
27	0	18	12
28	1	11	12
29	2	7	13

-- h) Show the cumulative sum of total working years for each department.

```sql
SELECT Department, Total_Working_Years,

SUM(Total_Working_Years) OVER(PARTITION BY Department ORDER BY Department ROWS
BETWEEN UNBOUNDED PRECEDING AND CURRENT ROW) AS cumulative_years

FROM EmployeeHRData;
```

-- insight: cumulative sum of total working years, partitioned by department, is

7

calculated

	Department	Total_Working_Years	cumulative_years
1	HR	16	16
2	HR	7	23
3	HR	23	46
4	HR	30	76
5	HR	8	84
6	HR	12	96
7	HR	7	103
8	HR	9	112
9	HR	4	116
10	HR	1	117
11	HR	11	128
12	HR	8	136
13	HR	32	168
14	HR	10	178
15	HR	16	194
16	HR	23	217
17	HR	22	239
18	HR	12	251
19	HR	8	259
20	HR	4	263
21	HR	6	269
22	HR	6	275
23	HR	13	288
24	HR	7	295
25	HR	6	301
26	HR	24	325
27	HR	7	332
28	HR	6	338
29	HR	5	343
30	HR	10	353
31	HR	14	367
32	HR	10	377
33	HR	6	383
34	HR	27	410
35	HR	8	418

	Department	Total_Working_Years	cumulative_years
49	HR	9	604
50	HR	35	639
51	HR	14	653
52	HR	7	660
53	HR	9	669
54	HR	6	675
55	HR	10	685
56	HR	21	706
57	HR	6	712
58	HR	1	713
59	HR	2	715
60	HR	2	717
61	HR	1	718
62	HR	6	724
63	HR	4	728
64	R&D	4	4
65	R&D	1	5
66	R&D	10	15
67	R&D	5	20
68	R&D	20	40
69	R&D	11	51
70	R&D	13	64
71	R&D	5	69
72	R&D	1	70
73	R&D	1	71
74	R&D	9	80
75	R&D	1	81
76	R&D	1	82
77	R&D	6	88
78	R&D	7	95
79	R&D	6	101
80	R&D	4	105
81	R&D	11	116
82	R&D	8	124
83	R&D	8	132

-- i) Find the rank of employees within each department based on their monthly income

SELECT Employee_Number, emp_no, Department, Monthly_Income, DENSE_RANK()
OVER(PARTITION BY Department ORDER BY Monthly_Income DESC) as ranked

FROM EmployeeHRData;

-- insight: employees ranked within their departments based on monthly income

-- STAFF-1338, STAFF-259, STAFF-1282 have been ranked 1 in departments HR, R&D, Sales respectively

	Employee_Number	emp_no	Department	Monthly_Income	ranked
1	1338	STAFF-1338	HR	19717	1
2	1625	STAFF-1625	HR	19658	2
3	1973	STAFF-1973	HR	19636	3
4	734	STAFF-734	HR	19189	4
5	731	STAFF-731	HR	19141	5
6	140	STAFF-140	HR	18844	6
7	644	STAFF-644	HR	18200	7
8	148	STAFF-148	HR	17328	8
9	1408	STAFF-1408	HR	16799	9
10	1550	STAFF-1550	HR	16437	10
11	1352	STAFF-1352	HR	14026	11
12	698	STAFF-698	HR	10725	12
13	1098	STAFF-1098	HR	10482	13
14	590	STAFF-590	HR	9950	14
15	1744	STAFF-1744	HR	9756	15
16	2040	STAFF-2040	HR	8837	16
17	1419	STAFF-1419	HR	7988	17
18	1722	STAFF-1722	HR	6430	18
19	424	STAFF-424	HR	6410	19
20	760	STAFF-760	HR	6389	20
21	184	STAFF-184	HR	6347	21
22	1231	STAFF-1231	HR	6272	22
23	1563	STAFF-1563	HR	6077	23
24	665	STAFF-665	HR	5985	24
25	1642	STAFF-1642	HR	5743	25
26	909	STAFF-909	HR	5204	26
27	103	STAFF-103	HR	5021	27
28	869	STAFF-869	HR	4936	28
29	1289	STAFF-1289	HR	4490	29
30	1164	STAFF-1164	HR	4323	30
31	1794	STAFF-1794	HR	4071	31
32	1890	STAFF-1890	HR	3886	32
33	847	STAFF-847	HR	3737	33
34	1207	STAFF-1207	HR	3600	34
35	1778	STAFF-1778	HR	3539	35

	Employee_Number	emp_no	Department	Monthly_Income	ranked
61	133	STAFF-133	HR	2073	61
62	1499	STAFF-1499	HR	2064	62
63	1714	STAFF-1714	HR	1555	63
64	259	STAFF-259	R&D	19999	1
65	1035	STAFF-1035	R&D	19973	2
66	1191	STAFF-1191	R&D	19943	3
67	226	STAFF-226	R&D	19926	4
68	787	STAFF-787	R&D	19859	5
69	1255	STAFF-1255	R&D	19740	6
70	1423	STAFF-1423	R&D	19701	7
71	1867	STAFF-1867	R&D	19665	8
72	1069	STAFF-1069	R&D	19627	9
73	1128	STAFF-1128	R&D	19626	10
74	1595	STAFF-1595	R&D	19613	11
75	549	STAFF-549	R&D	19566	12
76	58	STAFF-58	R&D	19545	13
77	162	STAFF-162	R&D	19537	14
78	671	STAFF-671	R&D	19513	15
79	638	STAFF-638	R&D	19502	16
80	352	STAFF-352	R&D	19436	17
81	2022	STAFF-2022	R&D	19431	18
82	999	STAFF-999	R&D	19419	19
83	522	STAFF-522	R&D	19406	20
84	1866	STAFF-1866	R&D	19392	21
85	1789	STAFF-1789	R&D	19328	22
86	444	STAFF-444	R&D	19272	23
87	825	STAFF-825	R&D	19246	24
88	1061	STAFF-1061	R&D	19237	25
89	319	STAFF-319	R&D	19232	26
90	336	STAFF-336	R&D	19202	27
91	531	STAFF-531	R&D	19197	28
92	1288	STAFF-1288	R&D	19190	29
93	1336	STAFF-1336	R&D	19187	30
94	1941	STAFF-1941	R&D	19161	31
95	385	STAFF-385	R&D	19144	32

	Employee_Number	emp_no	Department	Monthly_Income	ranked
1...	1433	STAFF-1433	R&D	1261	888
1...	30	STAFF-30	R&D	1232	889
1...	1270	STAFF-1270	R&D	1223	890
1...	1974	STAFF-1974	R&D	1129	891
1...	243	STAFF-243	R&D	1102	892
1...	1012	STAFF-1012	R&D	1051	893
1...	701	STAFF-701	R&D	1009	894
1...	1282	STAFF-1282	Sales	19847	1
1...	1038	STAFF-1038	Sales	19845	2
1...	1740	STAFF-1740	Sales	19833	3
1...	1578	STAFF-1578	Sales	19586	4
1...	323	STAFF-323	Sales	19517	5
1...	1591	STAFF-1591	Sales	19331	6
1...	329	STAFF-329	Sales	19068	7
1...	38	STAFF-38	Sales	18947	8
1...	1277	STAFF-1277	Sales	18824	9
1...	1280	STAFF-1280	Sales	18789	10
1...	1029	STAFF-1029	Sales	18303	11
1...	1267	STAFF-1267	Sales	18213	12
1...	558	STAFF-558	Sales	18041	13
1...	1938	STAFF-1938	Sales	17875	14
1...	1045	STAFF-1045	Sales	17650	15
1...	1602	STAFF-1602	Sales	17567	16
1...	1124	STAFF-1124	Sales	17465	17
1...	992	STAFF-992	Sales	17444	18
1...	1204	STAFF-1204	Sales	17048	19
1...	158	STAFF-158	Sales	16959	20
1...	363	STAFF-363	Sales	16872	21
1...	776	STAFF-776	Sales	16856	22
1...	597	STAFF-597	Sales	16835	23
1...	1527	STAFF-1527	Sales	16606	24
1...	625	STAFF-625	Sales	16595	25
1...	851	STAFF-851	Sales	16307	26
1...	1824	STAFF-1824	Sales	16291	27
1...	327	STAFF-327	Sales	16064	28

```
-- j) Calculate the running total of 'Total Working Years' for each employee
within each department and age band.

SELECT emp_no, Employee_Number, Department, CF_age_band, Total_Working_Years,

SUM(Total_Working_Years) OVER(PARTITION BY Department, CF_age_band ORDER BY
Department, CF_age_band ROWS BETWEEN UNBOUNDED PRECEDING AND CURRENT ROW) AS
running_total

FROM EmployeeHRData

-- running total based on total_working_years for employees within each
department and age_band found
```

	emp_no	Employee_N...	Departm...	CF_age_b...	Total_W...	runnin...
1	STAFF-177	177	HR	25 - 34	8	8
2	STAFF-184	184	HR	25 - 34	12	20
3	STAFF-424	424	HR	25 - 34	9	29
4	STAFF-590	590	HR	25 - 34	11	40
5	STAFF-608	608	HR	25 - 34	8	48
6	STAFF-847	847	HR	25 - 34	4	52
7	STAFF-869	869	HR	25 - 34	6	58
8	STAFF-910	910	HR	25 - 34	7	65
9	STAFF-1207	1207	HR	25 - 34	5	70
10	STAFF-1289	1289	HR	25 - 34	14	84
11	STAFF-1987	1987	HR	25 - 34	6	90
12	STAFF-1461	1461	HR	25 - 34	8	98
13	STAFF-1858	1858	HR	25 - 34	3	101
14	STAFF-1865	1865	HR	25 - 34	1	102
15	STAFF-1419	1419	HR	25 - 34	10	112
16	STAFF-1499	1499	HR	25 - 34	6	118
17	STAFF-1747	1747	HR	25 - 34	6	124
18	STAFF-1944	1944	HR	25 - 34	1	125
19	STAFF-1467	1467	HR	25 - 34	2	127
20	STAFF-1842	1842	HR	25 - 34	2	129
21	STAFF-1818	1818	HR	25 - 34	6	135
22	STAFF-1844	1844	HR	25 - 34	4	139
23	STAFF-1550	1550	HR	35 - 44	21	21
24	STAFF-1890	1890	HR	35 - 44	10	31
25	STAFF-1683	1683	HR	35 - 44	8	39
26	STAFF-2040	2040	HR	35 - 44	9	48
27	STAFF-1642	1642	HR	35 - 44	14	62
28	STAFF-1972	1972	HR	35 - 44	7	69
29	STAFF-1778	1778	HR	35 - 44	10	79
30	STAFF-1794	1794	HR	35 - 44	19	98
31	STAFF-1805	1805	HR	35 - 44	13	111
32	STAFF-1722	1722	HR	35 - 44	10	121
33	STAFF-1563	1563	HR	35 - 44	10	131
34	STAFF-1231	1231	HR	35 - 44	10	141
35	STAFF-1408	1408	HR	35 - 44	21	162

	emp_no	Employee_N...	Departm...	CF_age_b...	Total_W...	runnin...
43	STAFF-731	731	HR	35 - 44	23	259
44	STAFF-734	734	HR	35 - 44	22	281
45	STAFF-760	760	HR	35 - 44	12	293
46	STAFF-470	470	HR	35 - 44	4	297
47	STAFF-133	133	HR	35 - 44	7	304
48	STAFF-103	103	HR	45 - 54	16	16
49	STAFF-148	148	HR	45 - 54	23	39
50	STAFF-698	698	HR	45 - 54	16	55
51	STAFF-644	644	HR	45 - 54	32	87
52	STAFF-1049	1049	HR	45 - 54	6	93
53	STAFF-1352	1352	HR	45 - 54	33	126
54	STAFF-1314	1314	HR	45 - 54	10	136
55	STAFF-1625	1625	HR	45 - 54	27	163
56	STAFF-1744	1744	HR	45 - 54	9	172
57	STAFF-1973	1973	HR	Over 55	35	35
58	STAFF-1338	1338	HR	Over 55	36	71
59	STAFF-140	140	HR	Over 55	30	101
60	STAFF-321	321	HR	Over 55	7	108
61	STAFF-566	566	HR	Under 25	1	1
62	STAFF-1746	1746	HR	Under 25	3	4
63	STAFF-1714	1714	HR	Under 25	1	5
64	STAFF-1960	1960	R&D	25 - 34	6	6
65	STAFF-1522	1522	R&D	25 - 34	11	17
66	STAFF-1807	1807	R&D	25 - 34	11	28
67	STAFF-1504	1504	R&D	25 - 34	8	36
68	STAFF-1433	1433	R&D	25 - 34	1	37
69	STAFF-2064	2064	R&D	25 - 34	6	43
70	STAFF-1459	1459	R&D	25 - 34	10	53
71	STAFF-1537	1537	R&D	25 - 34	7	60
72	STAFF-2027	2027	R&D	25 - 34	4	64
73	STAFF-1604	1604	R&D	25 - 34	1	65
74	STAFF-1464	1464	R&D	25 - 34	7	72
75	STAFF-1939	1939	R&D	25 - 34	8	80
76	STAFF-1421	1421	R&D	25 - 34	9	89
77	STAFF-1692	1692	R&D	25 - 34	1	90

-- k) For each employee who left, calculate the number of years they worked before leaving

--   and compare it with the average years worked by employees in the same department.

SELECT *,

CASE

        WHEN Years_At_Company<Avg_Years_At_Department THEN 'LESSER'

13

```sql
        WHEN Years_At_Company>Avg_Years_At_Department THEN 'GREATER'

        ELSE 'Equal'

END AS comparison

FROM (

        SELECT Employee_Number, emp_no, Years_At_Company, mainTable.Department,
avgYearsTable.avgAtDept AS Avg_Years_At_Department

        FROM EmployeeHRData AS mainTable

        JOIN (

                SELECT Department, AVG(Years_At_Company) AS avgAtDept

                FROM EmployeeHRData

                GROUP BY Department

        ) AS avgYearsTable

        ON avgYearsTable.Department = mainTable.Department

        WHERE Attrition = 'Yes'

) AS _

ORDER BY Employee_Number;

-- insight: SQL query compares an ex-employee's years at company with average of
years at company

-- LESSER if they have worked for a period less than average, and vice-versa
```

	Employee_Number	emp_no	Years_At_Company	Department	Avg_Years_At_Department	comparison
1	1	STAFF-1	6	Sales	7	LESSER
2	4	STAFF-4	0	R&D	6	LESSER
3	19	STAFF-19	4	R&D	6	LESSER
4	27	STAFF-27	5	Sales	7	LESSER
5	31	STAFF-31	4	R&D	6	LESSER
6	33	STAFF-33	10	R&D	6	GREATER
7	42	STAFF-42	1	Sales	7	LESSER
8	45	STAFF-45	2	R&D	6	LESSER
9	47	STAFF-47	3	Sales	7	LESSER
10	55	STAFF-55	1	R&D	6	LESSER
11	58	STAFF-58	22	R&D	6	GREATER
12	64	STAFF-64	1	R&D	6	LESSER
13	65	STAFF-65	2	R&D	6	LESSER
14	90	STAFF-90	1	R&D	6	LESSER
15	118	STAFF-...	9	Sales	7	GREATER
16	133	STAFF-...	3	HR	7	LESSER
17	137	STAFF-...	1	R&D	6	LESSER
18	142	STAFF-...	6	Sales	7	LESSER
19	147	STAFF-...	9	R&D	6	GREATER
20	161	STAFF-...	5	R&D	6	LESSER
21	163	STAFF-...	7	Sales	7	Equal
22	165	STAFF-...	40	R&D	6	GREATER
23	167	STAFF-...	0	Sales	7	LESSER
24	175	STAFF-...	2	Sales	7	LESSER
25	179	STAFF-...	4	R&D	6	LESSER
26	190	STAFF-...	5	R&D	6	LESSER
27	235	STAFF-...	0	Sales	7	LESSER
28	243	STAFF-...	1	R&D	6	LESSER
29	248	STAFF-...	4	Sales	7	LESSER
30	261	STAFF-...	1	R&D	6	LESSER
31	282	STAFF-...	1	R&D	6	LESSER
32	283	STAFF-...	10	Sales	7	GREATER
33	291	STAFF-...	14	Sales	7	GREATER
34	297	STAFF-...	5	R&D	6	LESSER

```
-- 1) Rank the departments by the average monthly income of employees who have
left.

SELECT Department, AVG(Monthly_Income) AS dept_avg_monthly_income, DENSE_RANK()
OVER(ORDER BY AVG(Monthly_Income) DESC) AS ranks

FROM EmployeeHRData

WHERE Attrition = 'Yes'

GROUP BY Department;
```

15

-- insight: ranking department by average of monthly income of ex-employees,
'Sales' department is rank 1 followed by 'R&D' at 2 and 'HR' at 3

-- m) Find the if there is any relation between Attrition Rate and Marital
Status of Employee.

```sql
SELECT

        attritionTable.Attrition,

        attritionTable.Marital_Status,

        attritionTable.frequency,

        ROUND((attritionTable.frequency*
100.0/totalEmployeeTable.total_freq_per_Marital_Status), 2) AS Attrition_Rate

FROM (

        SELECT Attrition, Marital_Status, COUNT(*) AS frequency

        FROM EmployeeHRData

        GROUP BY Attrition, Marital_Status
--      ORDER BY Marital_Status

) AS attritionTable

JOIN (

        SELECT Marital_Status, COUNT(*) AS total_freq_per_Marital_Status

        FROM EmployeeHRData

        GROUP BY Marital_Status

) AS totalEmployeeTable

ON attritionTable.Marital_Status = totalEmployeeTable.Marital_Status

ORDER BY attritionTable.Marital_Status
```

-- insight: Employees who fall under the categories of 'Married' and 'Divorced'
have a lower attrition rate(10-12.5%), than compared to 'Single's(~25%)

-- n) Show the Department with Highest Attrition Rate (Percentage)

SELECT TOP 1 dept_attrition_table.Department, per_dept_attrition,
per_dept_employees, ROUND(per_dept_attrition*100.0/per_dept_employees, 2) AS
dept_attrition_percentage

FROM (

      SELECT Department, COUNT(*) AS per_dept_attrition

      FROM EmployeeHRData

      WHERE Attrition = 'Yes'

      GROUP BY Department

) AS dept_attrition_table

JOIN (

      SELECT Department, COUNT(*) AS per_dept_employees

      FROM EmployeeHRData

      GROUP BY Department

) AS dept_employees_table

ON dept_attrition_table.Department = dept_employees_table.Department

ORDER BY dept_attrition_percentage DESC;

-- insight: Department with highest attrition percentage is 'Sales'(~21%)

-- o) Calculate the moving average of monthly income over the past 3 employees
for each job role.

17

```sql
SELECT emp_no, Employee_Number, Job_Role, Monthly_Income,

AVG(Monthly_Income) OVER(PARTITION BY Job_Role ORDER BY Employee_Number ROWS
BETWEEN 2 PRECEDING AND CURRENT ROW) AS moving_avg_past3_employees

FROM EmployeeHRData;

-- insight: calculated moving average of monthly income over past 3 employees,
for each job role
```

	emp_no	Emplo...	Job_Role	Monthly_In...	moving_avg_pas...
1	STAFF-13	13	Healthcare Repres...	5237	5237
2	STAFF-36	36	Healthcare Repres...	10248	7742
3	STAFF-40	40	Healthcare Repres...	6465	7316
4	STAFF-70	70	Healthcare Repres...	9884	8865
5	STAFF-83	83	Healthcare Repres...	10096	8815
6	STAFF-117	117	Healthcare Repres...	4152	8044
7	STAFF-119	119	Healthcare Repres...	13503	9250
8	STAFF-124	124	Healthcare Repres...	10673	9442
9	STAFF-139	139	Healthcare Repres...	5163	9779
10	STAFF-145	145	Healthcare Repres...	7484	7773
11	STAFF-165	165	Healthcare Repres...	10312	7653
12	STAFF-223	223	Healthcare Repres...	9439	9078
13	STAFF-258	258	Healthcare Repres...	13734	11161
14	STAFF-282	282	Healthcare Repres...	6673	9948
15	STAFF-287	287	Healthcare Repres...	4876	8427
16	STAFF-288	288	Healthcare Repres...	9396	6981
17	STAFF-343	343	Healthcare Repres...	10938	8403
18	STAFF-367	367	Healthcare Repres...	5582	8638
19	STAFF-369	369	Healthcare Repres...	4000	6840
20	STAFF-372	372	Healthcare Repres...	13496	7692
21	STAFF-390	390	Healthcare Repres...	4741	7412
22	STAFF-393	393	Healthcare Repres...	5745	7994
23	STAFF-412	412	Healthcare Repres...	5661	5382
24	STAFF-417	417	Healthcare Repres...	9613	7006
25	STAFF-422	422	Healthcare Repres...	5660	6978
26	STAFF-431	431	Healthcare Repres...	13964	9745
27	STAFF-451	451	Healthcare Repres...	9985	9869
28	STAFF-477	477	Healthcare Repres...	6781	10243
29	STAFF-482	482	Healthcare Repres...	6755	7840
30	STAFF-491	491	Healthcare Repres...	10496	8010
31	STAFF-496	496	Healthcare Repres...	6540	7930
32	STAFF-499	499	Healthcare Repres...	10965	9333
33	STAFF-526	526	Healthcare Repres...	4522	7342
34	STAFF-551	551	Healthcare Repres...	4523	6670
35	STAFF-586	586	Healthcare Repres...	7632	5559

	emp_no	Emplo...	Job_Role	Monthly_In...	moving_avg_pas...
118	STAFF-1829	1829	Healthcare Repres...	4448	6629
119	STAFF-1859	1859	Healthcare Repres...	6384	5781
120	STAFF-1903	1903	Healthcare Repres...	5033	5288
121	STAFF-1922	1922	Healthcare Repres...	5399	5605
122	STAFF-1954	1954	Healthcare Repres...	5373	5268
123	STAFF-1955	1955	Healthcare Repres...	6667	5813
124	STAFF-1970	1970	Healthcare Repres...	5968	6002
125	STAFF-1971	1971	Healthcare Repres...	7510	6715
126	STAFF-1981	1981	Healthcare Repres...	4617	6031
127	STAFF-1993	1993	Healthcare Repres...	8633	6920
128	STAFF-2009	2009	Healthcare Repres...	4878	6042
129	STAFF-2026	2026	Healthcare Repres...	6306	6605
130	STAFF-2049	2049	Healthcare Repres...	5689	5624
131	STAFF-2062	2062	Healthcare Repres...	9991	7328
132	STAFF-103	103	Human Resources	5021	5021
133	STAFF-133	133	Human Resources	2073	3547
134	STAFF-177	177	Human Resources	2942	3345
135	STAFF-184	184	Human Resources	6347	3787
136	STAFF-321	321	Human Resources	2267	3852
137	STAFF-424	424	Human Resources	6410	5008
138	STAFF-470	470	Human Resources	2696	3791
139	STAFF-566	566	Human Resources	2564	3890
140	STAFF-590	590	Human Resources	9950	5070
141	STAFF-608	608	Human Resources	2741	5085
142	STAFF-665	665	Human Resources	5985	6225
143	STAFF-698	698	Human Resources	10725	6483
144	STAFF-760	760	Human Resources	6389	7699
145	STAFF-829	829	Human Resources	2143	6419
146	STAFF-847	847	Human Resources	3737	4089
147	STAFF-869	869	Human Resources	4936	3605
148	STAFF-878	878	Human Resources	2342	3671
149	STAFF-909	909	Human Resources	5204	4160
150	STAFF-910	910	Human Resources	2277	3274
151	STAFF-1049	1049	Human Resources	2177	3219
152	STAFF-1098	1098	Human Resources	10482	4978

	emp_no	Emplo...	Job_Role	Monthly_In...	moving_avg_pas...
178	STAFF-1865	1865	Human Resources	2804	2615
179	STAFF-1890	1890	Human Resources	3886	3132
180	STAFF-1944	1944	Human Resources	2863	3184
181	STAFF-1972	1972	Human Resources	2991	3246
182	STAFF-1987	1987	Human Resources	2187	2680
183	STAFF-2040	2040	Human Resources	8837	4671
184	STAFF-4	4	Laboratory Techni...	2090	2090
185	STAFF-7	7	Laboratory Techni...	3468	2779
186	STAFF-8	8	Laboratory Techni...	3068	2875
187	STAFF-10	10	Laboratory Techni...	2670	3068
188	STAFF-11	11	Laboratory Techni...	2693	2810
189	STAFF-14	14	Laboratory Techni...	2426	2596
190	STAFF-15	15	Laboratory Techni...	4193	3104
191	STAFF-18	18	Laboratory Techni...	2661	3093
192	STAFF-19	19	Laboratory Techni...	2028	2960
193	STAFF-22	22	Laboratory Techni...	2935	2541
194	STAFF-39	39	Laboratory Techni...	2496	2486
195	STAFF-41	41	Laboratory Techni...	2206	2545
196	STAFF-53	53	Laboratory Techni...	1951	2217
197	STAFF-54	54	Laboratory Techni...	2341	2166
198	STAFF-55	55	Laboratory Techni...	2293	2195
199	STAFF-57	57	Laboratory Techni...	4011	2881
200	STAFF-63	63	Laboratory Techni...	2269	2857
201	STAFF-64	64	Laboratory Techni...	5381	3887
202	STAFF-65	65	Laboratory Techni...	3441	3697
203	STAFF-75	75	Laboratory Techni...	4014	4278
204	STAFF-76	76	Laboratory Techni...	5915	4456
205	STAFF-79	79	Laboratory Techni...	2406	4111
206	STAFF-97	97	Laboratory Techni...	3038	3786
207	STAFF-104	104	Laboratory Techni...	5126	3523
208	STAFF-116	116	Laboratory Techni...	2075	3413
209	STAFF-132	132	Laboratory Techni...	2042	3081
210	STAFF-137	137	Laboratory Techni...	2926	2347
211	STAFF-144	144	Laboratory Techni...	2871	2613
212	STAFF-147	147	Laboratory Techni...	6074	3957

Query executed successfully.

20

	emp_no	Emplo...	Job_Role	Monthly_In...	moving_avg_pas...
436	STAFF-2003	2003	Laboratory Techni...	2660	2881
437	STAFF-2010	2010	Laboratory Techni...	2837	2501
438	STAFF-2012	2012	Laboratory Techni...	2406	2634
439	STAFF-2032	2032	Laboratory Techni...	2339	2527
440	STAFF-2053	2053	Laboratory Techni...	4025	2923
441	STAFF-2061	2061	Laboratory Techni...	2571	2978
442	STAFF-2068	2068	Laboratory Techni...	4404	3666
443	STAFF-23	23	Manager	15427	15427
444	STAFF-32	32	Manager	19094	17260
445	STAFF-38	38	Manager	18947	17822
446	STAFF-84	84	Manager	14756	17599
447	STAFF-140	140	Manager	18844	17515
448	STAFF-148	148	Manager	17328	16976
449	STAFF-153	153	Manager	11631	15934
450	STAFF-158	158	Manager	16959	15306
451	STAFF-199	199	Manager	17181	15257
452	STAFF-226	226	Manager	19926	18022
453	STAFF-253	253	Manager	19033	18713
454	STAFF-259	259	Manager	19999	19652
455	STAFF-264	264	Manager	16792	18608
456	STAFF-298	298	Manager	13591	16794
457	STAFF-319	319	Manager	19232	16538
458	STAFF-323	323	Manager	19517	17446
459	STAFF-327	327	Manager	16064	18271
460	STAFF-329	329	Manager	19068	18216
461	STAFF-336	336	Manager	19202	18111
462	STAFF-363	363	Manager	16872	18380
463	STAFF-374	374	Manager	19045	18373
464	STAFF-376	376	Manager	11849	15922
465	STAFF-381	381	Manager	11996	14296
466	STAFF-410	410	Manager	16015	13286
467	STAFF-428	428	Manager	11878	13296
468	STAFF-429	429	Manager	17068	14987
469	STAFF-444	444	Manager	19272	16072
470	STAFF-473	473	Manager	12504	16281

-- p) Identify employees with outliers in monthly income within each job role.

--   [Condition : Monthly_Income < Q1 - (Q3 - Q1) * 1.5 OR Monthly_Income > Q3 + (Q3 - Q1)]

SELECT emp_no, Job_Role, Monthly_Income

```sql
FROM (

    SELECT *,

    PERCENTILE_CONT(0.25) WITHIN GROUP(ORDER BY Monthly_Income)
OVER(PARTITION BY Job_Role) AS q1,

    PERCENTILE_CONT(0.75) WITHIN GROUP(ORDER BY Monthly_Income)
OVER(PARTITION BY Job_Role) AS q3

    FROM EmployeeHRData

) AS _

WHERE Monthly_Income<q1-1.5*(q3-q1) OR Monthly_Income>q3+1.5*(q3-q1)

ORDER BY Job_Role;

-- insight: The SQL quey shows details of staff in each job role, whose monthly
income is outlier within the given data
```

	emp_no	Job_Role	Monthly_Income
1	STAFF-1985	Laboratory Technician	6323
2	STAFF-1737	Laboratory Technician	6472
3	STAFF-1315	Laboratory Technician	6674
4	STAFF-1132	Laboratory Technician	6782
5	STAFF-944	Laboratory Technician	7403
6	STAFF-1516	Manager	11244
7	STAFF-613	Manager	11557
8	STAFF-153	Manager	11631
9	STAFF-376	Manager	11849
10	STAFF-428	Manager	11878
11	STAFF-1048	Manager	11904
12	STAFF-1321	Manager	11916
13	STAFF-381	Manager	11996
14	STAFF-96	Research Scientist	6220
15	STAFF-679	Research Scientist	6322
16	STAFF-347	Research Scientist	6545
17	STAFF-691	Research Scientist	6646
18	STAFF-1830	Research Scientist	6854
19	STAFF-1847	Research Scientist	6962
20	STAFF-86	Research Scientist	9724
21	STAFF-131	Sales Executive	13872
22	STAFF-1056	Sales Representative	1052
23	STAFF-1876	Sales Representative	1081
24	STAFF-1928	Sales Representative	1091
25	STAFF-1273	Sales Representative	1118
26	STAFF-411	Sales Representative	1200
27	STAFF-738	Sales Representative	3875
28	STAFF-330	Sales Representative	3931
29	STAFF-1439	Sales Representative	4400
30	STAFF-1710	Sales Representative	4502
31	STAFF-1835	Sales Representative	5405
32	STAFF-783	Sales Representative	6632

-- q) Gender distribution within each job role, show each job role with its gender domination.

--   [Male_Domination or Female_Domination]

SELECT *,

CASE

        WHEN Gender='Male' THEN 'Male_Domination'

23

```sql
        WHEN Gender='Female' THEN 'Female_Domination'

END AS dominating_gender_in_job_role

FROM (

        SELECT Job_Role, Gender, COUNT(*) AS frequency, DENSE_RANK()
OVER(PARTITION BY Job_Role ORDER BY Gender DESC) AS ranking

        FROM EmployeeHRData

        GROUP BY Job_Role, Gender

) AS _

WHERE ranking = 1;

-- insight: all 9 job roles, are found to be dominated by men
```

	Job_Role	Gender	frequency	ranking	dominating_gender_in_job_role
1	Healthcare Representative	Male	80	1	Male_Domination
2	Human Resources	Male	36	1	Male_Domination
3	Laboratory Technician	Male	174	1	Male_Domination
4	Manager	Male	55	1	Male_Domination
5	Manufacturing Director	Male	73	1	Male_Domination
6	Research Director	Male	47	1	Male_Domination
7	Research Scientist	Male	178	1	Male_Domination
8	Sales Executive	Male	194	1	Male_Domination
9	Sales Representative	Male	45	1	Male_Domination

```sql
-- r) Percent rank of employees based on training times last year

SELECT emp_no, Training_Times_Last_Year,

PERCENT_RANK() OVER(ORDER BY Training_Times_Last_Year) AS percent_rank

FROM EmployeeHRData;

-- insight: PERCENT_RANK() function was used to find percent rank of employees
based on the number of times they had training last year.

-- results are shown in the below table
```

	emp_no	Training_Times_La...	percent_rank
1	STAFF-1	0	0
2	STAFF-56	0	0
3	STAFF-58	0	0
4	STAFF-90	0	0
5	STAFF-125	0	0
6	STAFF-178	0	0
7	STAFF-246	0	0
8	STAFF-275	0	0
9	STAFF-353	0	0
10	STAFF-361	0	0
11	STAFF-392	0	0
12	STAFF-401	0	0
13	STAFF-439	0	0
14	STAFF-449	0	0
15	STAFF-494	0	0
16	STAFF-532	0	0
17	STAFF-657	0	0
18	STAFF-700	0	0
19	STAFF-773	0	0
20	STAFF-826	0	0
21	STAFF-901	0	0
22	STAFF-913	0	0
23	STAFF-991	0	0
24	STAFF-1003	0	0
25	STAFF-1006	0	0
26	STAFF-1022	0	0
27	STAFF-1069	0	0
28	STAFF-1107	0	0
29	STAFF-1108	0	0
30	STAFF-1133	0	0
31	STAFF-1156	0	0
32	STAFF-1162	0	0
33	STAFF-1312	0	0
34	STAFF-1340	0	0
35	STAFF-1344	0	0

	emp_no	Training_Times_La...	percent_rank
49	STAFF-1973	0	0
50	STAFF-1824	0	0
51	STAFF-1747	0	0
52	STAFF-2064	0	0
53	STAFF-1467	0	0
54	STAFF-1933	0	0
55	STAFF-1421	1	0.0367597004765146
56	STAFF-1457	1	0.0367597004765146
57	STAFF-1966	1	0.0367597004765146
58	STAFF-1854	1	0.0367597004765146
59	STAFF-1790	1	0.0367597004765146
60	STAFF-1996	1	0.0367597004765146
61	STAFF-1908	1	0.0367597004765146
62	STAFF-1971	1	0.0367597004765146
63	STAFF-1707	1	0.0367597004765146
64	STAFF-1523	1	0.0367597004765146
65	STAFF-1798	1	0.0367597004765146
66	STAFF-1694	1	0.0367597004765146
67	STAFF-1997	1	0.0367597004765146
68	STAFF-1757	1	0.0367597004765146
69	STAFF-2041	1	0.0367597004765146
70	STAFF-1377	1	0.0367597004765146
71	STAFF-1929	1	0.0367597004765146
72	STAFF-1367	1	0.0367597004765146
73	STAFF-1120	1	0.0367597004765146
74	STAFF-1126	1	0.0367597004765146
75	STAFF-1103	1	0.0367597004765146
76	STAFF-1048	1	0.0367597004765146
77	STAFF-1084	1	0.0367597004765146
78	STAFF-1098	1	0.0367597004765146
79	STAFF-1036	1	0.0367597004765146
80	STAFF-1042	1	0.0367597004765146
81	STAFF-1011	1	0.0367597004765146
82	STAFF-997	1	0.0367597004765146
83	STAFF-983	1	0.0367597004765146

	emp_no	Training_Times_La...	percent_rank
121	STAFF-104	1	0.0367597004765146
122	STAFF-61	1	0.0367597004765146
123	STAFF-73	1	0.0367597004765146
124	STAFF-16	1	0.0367597004765146
125	STAFF-20	1	0.0367597004765146
126	STAFF-31	2	0.0850918992511913
127	STAFF-35	2	0.0850918992511913
128	STAFF-38	2	0.0850918992511913
129	STAFF-47	2	0.0850918992511913
130	STAFF-18	2	0.0850918992511913
131	STAFF-8	2	0.0850918992511913
132	STAFF-22	2	0.0850918992511913
133	STAFF-11	2	0.0850918992511913
134	STAFF-12	2	0.0850918992511913
135	STAFF-63	2	0.0850918992511913
136	STAFF-64	2	0.0850918992511913
137	STAFF-60	2	0.0850918992511913
138	STAFF-57	2	0.0850918992511913
139	STAFF-45	2	0.0850918992511913
140	STAFF-55	2	0.0850918992511913
141	STAFF-91	2	0.0850918992511913
142	STAFF-86	2	0.0850918992511913
143	STAFF-88	2	0.0850918992511913
144	STAFF-68	2	0.0850918992511913
145	STAFF-77	2	0.0850918992511913
146	STAFF-79	2	0.0850918992511913
147	STAFF-80	2	0.0850918992511913
148	STAFF-83	2	0.0850918992511913
149	STAFF-84	2	0.0850918992511913
150	STAFF-72	2	0.0850918992511913
151	STAFF-103	2	0.0850918992511913
152	STAFF-98	2	0.0850918992511913
153	STAFF-100	2	0.0850918992511913
154	STAFF-110	2	0.0850918992511913
155	STAFF-120	2	0.0850918992511913

	emp_no	Training_Times_La...	percent_rank
651	STAFF-1960	2	0.0850918992511913
652	STAFF-1692	2	0.0850918992511913
653	STAFF-1939	2	0.0850918992511913
654	STAFF-1624	2	0.0850918992511913
655	STAFF-1792	2	0.0850918992511913
656	STAFF-1464	2	0.0850918992511913
657	STAFF-1569	2	0.0850918992511913
658	STAFF-1494	2	0.0850918992511913
659	STAFF-1797	2	0.0850918992511913
660	STAFF-1821	2	0.0850918992511913
661	STAFF-1869	2	0.0850918992511913
662	STAFF-1420	2	0.0850918992511913
663	STAFF-1458	2	0.0850918992511913
664	STAFF-1489	2	0.0850918992511913
665	STAFF-1758	2	0.0850918992511913
666	STAFF-1905	2	0.0850918992511913
667	STAFF-1684	2	0.0850918992511913
668	STAFF-1645	2	0.0850918992511913
669	STAFF-1968	2	0.0850918992511913
670	STAFF-1667	2	0.0850918992511913
671	STAFF-1878	2	0.0850918992511913
672	STAFF-1702	2	0.0850918992511913
673	STAFF-1862	3	0.457454050374404
674	STAFF-1733	3	0.457454050374404
675	STAFF-2055	3	0.457454050374404
676	STAFF-1868	3	0.457454050374404
677	STAFF-1844	3	0.457454050374404
678	STAFF-2027	3	0.457454050374404
679	STAFF-1604	3	0.457454050374404
680	STAFF-1649	3	0.457454050374404
681	STAFF-1818	3	0.457454050374404
682	STAFF-1691	3	0.457454050374404
683	STAFF-1780	3	0.457454050374404
684	STAFF-1876	3	0.457454050374404
685	STAFF-1907	3	0.457454050374404

	emp_no	Training_Times_La...	percent_rank
1...	STAFF-4	3	0.457454050374404
1...	STAFF-5	3	0.457454050374404
1...	STAFF-7	3	0.457454050374404
1...	STAFF-23	3	0.457454050374404
1...	STAFF-24	3	0.457454050374404
1...	STAFF-10	3	0.457454050374404
1...	STAFF-49	3	0.457454050374404
1...	STAFF-51	3	0.457454050374404
1...	STAFF-52	3	0.457454050374404
1...	STAFF-53	3	0.457454050374404
1...	STAFF-39	3	0.457454050374404
1...	STAFF-32	3	0.457454050374404
1...	STAFF-36	4	0.791695030633084
1...	STAFF-27	4	0.791695030633084
1...	STAFF-28	4	0.791695030633084
1...	STAFF-19	4	0.791695030633084
1...	STAFF-62	4	0.791695030633084
1...	STAFF-95	4	0.791695030633084
1...	STAFF-106	4	0.791695030633084
1...	STAFF-116	4	0.791695030633084
1...	STAFF-121	4	0.791695030633084
1...	STAFF-194	4	0.791695030633084
1...	STAFF-239	4	0.791695030633084
1...	STAFF-303	4	0.791695030633084
1...	STAFF-277	4	0.791695030633084
1...	STAFF-351	4	0.791695030633084
1...	STAFF-389	4	0.791695030633084
1...	STAFF-396	4	0.791695030633084
1...	STAFF-373	4	0.791695030633084
1...	STAFF-385	4	0.791695030633084
1...	STAFF-423	4	0.791695030633084
1...	STAFF-454	4	0.791695030633084
1...	STAFF-450	4	0.791695030633084
1...	STAFF-440	4	0.791695030633084
1...	STAFF-495	4	0.791695030633084

	emp_no	Training_Times_La...	percent_rank
1437	STAFF-1092	6	0.95643294758339
1438	STAFF-1131	6	0.95643294758339
1439	STAFF-1201	6	0.95643294758339
1440	STAFF-1242	6	0.95643294758339
1441	STAFF-1243	6	0.95643294758339
1442	STAFF-1356	6	0.95643294758339
1443	STAFF-1358	6	0.95643294758339
1444	STAFF-1315	6	0.95643294758339
1445	STAFF-1311	6	0.95643294758339
1446	STAFF-1322	6	0.95643294758339
1447	STAFF-1283	6	0.95643294758339
1448	STAFF-1297	6	0.95643294758339
1449	STAFF-1955	6	0.95643294758339
1450	STAFF-1662	6	0.95643294758339
1451	STAFF-1651	6	0.95643294758339
1452	STAFF-1969	6	0.95643294758339
1453	STAFF-1411	6	0.95643294758339
1454	STAFF-1804	6	0.95643294758339
1455	STAFF-1653	6	0.95643294758339
1456	STAFF-1989	6	0.95643294758339
1457	STAFF-1799	6	0.95643294758339
1458	STAFF-1812	6	0.95643294758339
1459	STAFF-1560	6	0.95643294758339
1460	STAFF-1698	6	0.95643294758339
1461	STAFF-1982	6	0.95643294758339
1462	STAFF-1952	6	0.95643294758339
1463	STAFF-1515	6	0.95643294758339
1464	STAFF-2021	6	0.95643294758339
1465	STAFF-1638	6	0.95643294758339
1466	STAFF-2009	6	0.95643294758339
1467	STAFF-1956	6	0.95643294758339
1468	STAFF-1665	6	0.95643294758339
1469	STAFF-1768	6	0.95643294758339
1470	STAFF-1783	6	0.95643294758339

```sql
-- s) Divide employees into 5 groups based on training times last year [Use
NTILE ()]

SELECT emp_no, Job_Role, Training_Times_Last_Year,

NTILE(5) OVER(ORDER BY Training_Times_Last_Year) AS group_by_training_times_ly

FROM EmployeeHRData;
```

30

```
-- used NTILE function to group employees into 5 groups based on training times
of previous year
```

	emp_no	Job_Role	Trainin...	group_by_tr...
1	STAFF-1	Sales Executive	0	1
2	STAFF-56	Sales Executive	0	1
3	STAFF-58	Research Director	0	1
4	STAFF-90	Research Scientist	0	1
5	STAFF-125	Sales Executive	0	1
6	STAFF-178	Manufacturing Director	0	1
7	STAFF-246	Research Scientist	0	1
8	STAFF-275	Manufacturing Director	0	1
9	STAFF-353	Research Scientist	0	1
10	STAFF-361	Sales Executive	0	1
11	STAFF-392	Laboratory Technician	0	1
12	STAFF-401	Sales Executive	0	1
13	STAFF-439	Research Scientist	0	1
14	STAFF-449	Sales Executive	0	1
15	STAFF-494	Sales Representative	0	1
16	STAFF-532	Sales Executive	0	1
17	STAFF-657	Research Scientist	0	1
18	STAFF-700	Research Scientist	0	1
19	STAFF-773	Research Scientist	0	1
20	STAFF-826	Research Scientist	0	1
21	STAFF-901	Research Director	0	1
22	STAFF-913	Research Scientist	0	1
23	STAFF-991	Research Scientist	0	1
24	STAFF-1003	Sales Executive	0	1
25	STAFF-1006	Research Scientist	0	1
26	STAFF-1022	Healthcare Represe...	0	1
27	STAFF-1069	Research Director	0	1
28	STAFF-1107	Laboratory Technician	0	1
29	STAFF-1108	Research Scientist	0	1
30	STAFF-1133	Manufacturing Director	0	1
31	STAFF-1156	Laboratory Technician	0	1
32	STAFF-1162	Research Scientist	0	1
33	STAFF-1312	Healthcare Represe...	0	1
34	STAFF-1340	Research Scientist	0	1
35	STAFF-1344	Healthcare Represe...	0	1

	emp_no	Job_Role	Trainin...	group_by_tr...
277	STAFF-565	Research Scientist	2	1
278	STAFF-558	Manager	2	1
279	STAFF-569	Manager	2	1
280	STAFF-571	Laboratory Technician	2	1
281	STAFF-574	Manufacturing Director	2	1
282	STAFF-575	Research Director	2	1
283	STAFF-577	Laboratory Technician	2	1
284	STAFF-586	Healthcare Represe...	2	1
285	STAFF-587	Healthcare Represe...	2	1
286	STAFF-590	Human Resources	2	1
287	STAFF-582	Manager	2	1
288	STAFF-584	Laboratory Technician	2	1
289	STAFF-595	Sales Executive	2	1
290	STAFF-597	Manager	2	1
291	STAFF-600	Sales Executive	2	1
292	STAFF-608	Human Resources	2	1
293	STAFF-611	Manufacturing Director	2	1
294	STAFF-612	Research Director	2	1
295	STAFF-648	Sales Representative	2	2
296	STAFF-643	Laboratory Technician	2	2
297	STAFF-644	Manager	2	2
298	STAFF-650	Sales Executive	2	2
299	STAFF-604	Sales Executive	2	2
300	STAFF-615	Sales Executive	2	2
301	STAFF-625	Manager	2	2
302	STAFF-631	Sales Executive	2	2
303	STAFF-635	Manufacturing Director	2	2
304	STAFF-669	Sales Representative	2	2
305	STAFF-671	Manager	2	2
306	STAFF-679	Research Scientist	2	2
307	STAFF-680	Research Scientist	2	2
308	STAFF-682	Sales Executive	2	2
309	STAFF-686	Laboratory Technician	2	2
310	STAFF-689	Manufacturing Director	2	2
311	STAFF-699	Manufacturing Director	2	2

	emp_no	Job_Role	Trainin...	group_by_tr...
574	STAFF-1787	Sales Executive	2	2
575	STAFF-1739	Sales Executive	2	2
576	STAFF-1951	Sales Executive	2	2
577	STAFF-2013	Sales Representative	2	2
578	STAFF-1945	Sales Executive	2	2
579	STAFF-1514	Manufacturing Director	2	2
580	STAFF-1558	Research Scientist	2	2
581	STAFF-1803	Healthcare Represe...	2	2
582	STAFF-1770	Research Director	2	2
583	STAFF-1631	Manufacturing Director	2	2
584	STAFF-1435	Laboratory Technician	2	2
585	STAFF-1533	Laboratory Technician	2	2
586	STAFF-2014	Research Scientist	2	2
587	STAFF-1981	Healthcare Represe...	2	2
588	STAFF-1677	Manager	2	2
589	STAFF-1623	Research Scientist	2	3
590	STAFF-1417	Laboratory Technician	2	3
591	STAFF-2048	Research Scientist	2	3
592	STAFF-1545	Manufacturing Director	2	3
593	STAFF-1883	Laboratory Technician	2	3
594	STAFF-2007	Research Scientist	2	3
595	STAFF-1472	Research Director	2	3
596	STAFF-1754	Sales Executive	2	3
597	STAFF-1501	Healthcare Represe...	2	3
598	STAFF-1766	Healthcare Represe...	2	3
599	STAFF-1927	Sales Executive	2	3
600	STAFF-1992	Laboratory Technician	2	3
601	STAFF-1460	Healthcare Represe...	2	3
602	STAFF-2049	Healthcare Represe...	2	3
603	STAFF-1704	Research Scientist	2	3
604	STAFF-1496	Manufacturing Director	2	3
605	STAFF-1539	Research Director	2	3
606	STAFF-2020	Research Scientist	2	3
607	STAFF-2053	Laboratory Technician	2	3
608	STAFF-1591	Manager	2	3

33

	emp_no	Job_Role	Trainin...	group_by_tr...
868	STAFF-1355	Sales Executive	3	3
869	STAFF-1350	Research Scientist	3	3
870	STAFF-1361	Laboratory Technician	3	3
871	STAFF-1371	Sales Executive	3	3
872	STAFF-1225	Research Scientist	3	3
873	STAFF-1244	Research Scientist	3	3
874	STAFF-1228	Manufacturing Director	3	3
875	STAFF-1231	Human Resources	3	3
876	STAFF-1233	Sales Executive	3	3
877	STAFF-1219	Laboratory Technician	3	3
878	STAFF-1220	Sales Executive	3	3
879	STAFF-1215	Manager	3	3
880	STAFF-1211	Sales Executive	3	3
881	STAFF-1206	Research Scientist	3	3
882	STAFF-1190	Sales Representative	3	3
883	STAFF-1184	Healthcare Represe...	3	4
884	STAFF-1179	Sales Executive	3	4
885	STAFF-1180	Research Scientist	3	4
886	STAFF-1171	Sales Executive	3	4
887	STAFF-1165	Sales Executive	3	4
888	STAFF-1166	Research Director	3	4
889	STAFF-1163	Sales Executive	3	4
890	STAFF-1157	Sales Executive	3	4
891	STAFF-1137	Sales Executive	3	4
892	STAFF-1138	Sales Executive	3	4
893	STAFF-1140	Manufacturing Director	3	4
894	STAFF-1148	Laboratory Technician	3	4
895	STAFF-1121	Manufacturing Director	3	4
896	STAFF-1124	Manager	3	4
897	STAFF-1114	Sales Executive	3	4
898	STAFF-1116	Manager	3	4
899	STAFF-1109	Manager	3	4
900	STAFF-1038	Manager	3	4
901	STAFF-1106	Laboratory Technician	3	4
902	STAFF-1062	Healthcare Represe...	3	4

	emp_no	Job_Role	Trainin...	group_by_tr...
1...	STAFF-39	Laboratory Technician	3	4
1...	STAFF-32	Manager	3	4
1...	STAFF-36	Healthcare Represe...	4	4
1...	STAFF-27	Sales Representative	4	4
1...	STAFF-28	Research Director	4	4
1...	STAFF-19	Laboratory Technician	4	4
1...	STAFF-62	Sales Executive	4	4
1...	STAFF-95	Research Scientist	4	4
1...	STAFF-106	Sales Executive	4	4
1...	STAFF-116	Laboratory Technician	4	4
1...	STAFF-121	Sales Executive	4	4
1...	STAFF-194	Research Scientist	4	4
1...	STAFF-239	Laboratory Technician	4	4
1...	STAFF-303	Sales Executive	4	4
1...	STAFF-277	Research Scientist	4	4
1...	STAFF-351	Laboratory Technician	4	5
1...	STAFF-389	Laboratory Technician	4	5
1...	STAFF-396	Research Director	4	5
1...	STAFF-373	Laboratory Technician	4	5
1...	STAFF-385	Research Director	4	5
1...	STAFF-423	Research Scientist	4	5
1...	STAFF-454	Laboratory Technician	4	5
1...	STAFF-450	Research Scientist	4	5
1...	STAFF-440	Research Scientist	4	5
1...	STAFF-495	Research Scientist	4	5
1...	STAFF-379	Research Scientist	4	5
1...	STAFF-471	Laboratory Technician	4	5
1...	STAFF-522	Research Director	4	5
1...	STAFF-514	Research Scientist	4	5
1...	STAFF-543	Manufacturing Director	4	5
1...	STAFF-551	Healthcare Represe...	4	5
1...	STAFF-554	Sales Representative	4	5
1...	STAFF-591	Laboratory Technician	4	5
1...	STAFF-647	Laboratory Technician	4	5
1...	STAFF-653	Sales Executive	4	5

-- t) Categorize employees based on training times last year as - Frequent Trainee, Moderate Trainee, Infrequent Trainee.

SELECT *,

CASE

35

```sql
        WHEN category=1 THEN 'Infrequent Trainee'

        WHEN category=2 THEN 'Moderate Trainee'

        WHEN category=3 THEN 'Frequent Trainee'

END AS categorized_by_training_ly

FROM (

        SELECT emp_no, Employee_Number, Job_Role, Training_Times_Last_Year,

        NTILE(3) OVER(ORDER BY Training_Times_Last_Year) AS category

        FROM EmployeeHRData

) AS _

ORDER BY Employee_Number;

-- insight: above SQL query categorized employees based on training times of
previous year
```

	emp_no	Employee_Number	Job_Role	Training_Times...	category	categorized_by_training_ly
1	STAFF-1	1	Sales Executive	0	1	Infrequent Trainee
2	STAFF-2	2	Research Scientist	3	3	Frequent Trainee
3	STAFF-4	4	Laboratory Technician	3	3	Frequent Trainee
4	STAFF-5	5	Research Scientist	3	3	Frequent Trainee
5	STAFF-7	7	Laboratory Technician	3	3	Frequent Trainee
6	STAFF-8	8	Laboratory Technician	2	1	Infrequent Trainee
7	STAFF-10	10	Laboratory Technician	3	3	Frequent Trainee
8	STAFF-11	11	Laboratory Technician	2	1	Infrequent Trainee
9	STAFF-12	12	Manufacturing Direc...	2	1	Infrequent Trainee
10	STAFF-13	13	Healthcare Represe...	3	3	Frequent Trainee
11	STAFF-14	14	Laboratory Technician	5	3	Frequent Trainee
12	STAFF-15	15	Laboratory Technician	3	3	Frequent Trainee
13	STAFF-16	16	Research Scientist	1	1	Infrequent Trainee
14	STAFF-18	18	Laboratory Technician	2	1	Infrequent Trainee
15	STAFF-19	19	Laboratory Technician	4	3	Frequent Trainee
16	STAFF-20	20	Manufacturing Direc...	1	1	Infrequent Trainee
17	STAFF-21	21	Research Scientist	5	3	Frequent Trainee
18	STAFF-22	22	Laboratory Technician	2	1	Infrequent Trainee
19	STAFF-23	23	Manager	3	3	Frequent Trainee
20	STAFF-24	24	Research Scientist	3	3	Frequent Trainee
21	STAFF-26	26	Manufacturing Direc...	5	3	Frequent Trainee
22	STAFF-27	27	Sales Representative	4	3	Frequent Trainee
23	STAFF-28	28	Research Director	4	3	Frequent Trainee
24	STAFF-30	30	Research Scientist	6	3	Frequent Trainee
25	STAFF-31	31	Research Scientist	2	1	Infrequent Trainee
26	STAFF-32	32	Manager	3	3	Frequent Trainee
27	STAFF-33	33	Research Scientist	5	3	Frequent Trainee
28	STAFF-35	35	Sales Executive	2	1	Infrequent Trainee
29	STAFF-36	36	Healthcare Represe...	4	3	Frequent Trainee
30	STAFF-38	38	Manager	2	1	Infrequent Trainee
31	STAFF-39	39	Laboratory Technician	3	3	Frequent Trainee
32	STAFF-40	40	Healthcare Represe...	5	3	Frequent Trainee
33	STAFF-41	41	Laboratory Technician	5	3	Frequent Trainee
34	STAFF-42	42	Sales Representative	6	3	Frequent Trainee
35	STAFF-45	45	Research Scientist	2	1	Infrequent Trainee

	emp_no	Employee_Number	Job_Role	Training_Times...	category	categorized_by_training_ly
600	STAFF-...	829	Human Resources	2	1	Infrequent Trainee
601	STAFF-...	830	Manufacturing Direc...	3	2	Moderate Trainee
602	STAFF-...	832	Laboratory Technician	6	3	Frequent Trainee
603	STAFF-...	833	Manufacturing Direc...	4	3	Frequent Trainee
604	STAFF-...	834	Research Scientist	3	2	Moderate Trainee
605	STAFF-...	836	Manufacturing Direc...	3	2	Moderate Trainee
606	STAFF-...	837	Healthcare Represe...	3	2	Moderate Trainee
607	STAFF-...	838	Research Scientist	3	2	Moderate Trainee
608	STAFF-...	840	Sales Executive	3	2	Moderate Trainee
609	STAFF-...	842	Sales Executive	3	2	Moderate Trainee
610	STAFF-...	843	Research Director	3	2	Moderate Trainee
611	STAFF-...	844	Research Director	3	2	Moderate Trainee
612	STAFF-...	845	Manufacturing Direc...	3	2	Moderate Trainee
613	STAFF-...	846	Sales Executive	2	1	Infrequent Trainee
614	STAFF-...	847	Human Resources	1	1	Infrequent Trainee
615	STAFF-...	848	Research Scientist	2	1	Infrequent Trainee
616	STAFF-...	850	Research Scientist	6	3	Frequent Trainee
617	STAFF-...	851	Manager	2	1	Infrequent Trainee
618	STAFF-...	852	Healthcare Represe...	2	1	Infrequent Trainee
619	STAFF-...	854	Research Scientist	3	2	Moderate Trainee
620	STAFF-...	855	Sales Executive	5	3	Frequent Trainee
621	STAFF-...	856	Research Scientist	3	2	Moderate Trainee
622	STAFF-...	857	Sales Executive	1	1	Infrequent Trainee
623	STAFF-...	859	Sales Executive	3	2	Moderate Trainee
624	STAFF-...	861	Research Scientist	3	2	Moderate Trainee
625	STAFF-...	862	Sales Executive	3	2	Moderate Trainee
626	STAFF-...	864	Sales Executive	2	1	Infrequent Trainee
627	STAFF-...	865	Research Scientist	3	2	Moderate Trainee
628	STAFF-...	867	Manufacturing Direc...	3	2	Moderate Trainee
629	STAFF-...	868	Sales Executive	2	1	Infrequent Trainee
630	STAFF-...	869	Human Resources	6	3	Frequent Trainee
631	STAFF-...	872	Manufacturing Direc...	2	1	Infrequent Trainee
632	STAFF-...	874	Laboratory Technician	2	1	Infrequent Trainee
633	STAFF-...	875	Research Scientist	2	1	Infrequent Trainee
634	STAFF-...	878	Human Resources	3	2	Moderate Trainee

-- u) Categorize employees as 'High', 'Medium', or 'Low' performers based on their performance rating, using a CASE WHEN statement.

SELECT emp_no, Performance_Rating,

CASE

    WHEN performance_percentile=1 THEN 'Low'

    WHEN performance_percentile=2 THEN 'Medium'

    WHEN performance_percentile=3 THEN 'High'

END AS performance_band

```
FROM (

        SELECT emp_no, Employee_Number, Performance_Rating, NTILE(3) OVER(ORDER
BY Performance_Rating) AS performance_percentile

        FROM EmployeeHRData

) AS _

ORDER BY Employee_Number;

-- insight: above sql query was used to categorize employees using performance
ratings
```

	emp_no	Performance_R...	performance_band
1	STAFF-1	3	Low
2	STAFF-2	4	High
3	STAFF-4	3	Low
4	STAFF-5	3	Low
5	STAFF-7	3	Low
6	STAFF-8	3	Low
7	STAFF...	4	High
8	STAFF...	4	High
9	STAFF...	4	High
10	STAFF...	3	Low
11	STAFF...	3	Low
12	STAFF...	3	Low
13	STAFF...	3	Low
14	STAFF...	3	Low
15	STAFF...	3	Low
16	STAFF...	3	Low
17	STAFF...	3	Low
18	STAFF...	3	Low
19	STAFF...	3	Low
20	STAFF...	3	Low
21	STAFF...	3	Low
22	STAFF...	4	High
23	STAFF...	3	Low
24	STAFF...	3	Low
25	STAFF...	3	Low
26	STAFF...	3	Low
27	STAFF...	4	High
28	STAFF...	3	Low
29	STAFF...	3	Low
30	STAFF...	3	Low
31	STAFF...	3	Low
32	STAFF...	3	Low
33	STAFF...	3	Low
34	STAFF...	3	Low
35	STAFF...	3	Low

```sql
-- v) Use a CASE WHEN statement to categorize employees into 'Poor', 'Fair',
'Good', or 'Excellent'  work-life balance

--      based on their work-life balance score.

SELECT emp_no, Employee_Number, Work_Life_Balance,

CASE

        WHEN Work_Life_Balance=1 THEN 'Poor'

        WHEN Work_Life_Balance=2 THEN 'Fair'

        WHEN Work_Life_Balance=3 THEN 'Good'

        WHEN Work_Life_Balance=4 THEN 'Excellent'

END AS wlb_category

FROM EmployeeHRData;

-- insight: above SQL query was used to categorize each employee based on work-
life balance score
```

	emp_no	Employee_Number	Work_Life_Balance	wlb_category
1	STAFF-1	1	1	Poor
2	STAFF-2	2	3	Good
3	STAFF-4	4	3	Good
4	STAFF-5	5	3	Good
5	STAFF-7	7	3	Good
6	STAFF-8	8	2	Fair
7	STAFF...	10	2	Fair
8	STAFF...	11	3	Good
9	STAFF...	12	3	Good
10	STAFF...	13	2	Fair
11	STAFF...	14	3	Good
12	STAFF...	15	3	Good
13	STAFF...	16	2	Fair
14	STAFF...	18	3	Good
15	STAFF...	19	3	Good
16	STAFF...	20	3	Good
17	STAFF...	21	2	Fair
18	STAFF...	22	2	Fair
19	STAFF...	23	3	Good
20	STAFF...	24	3	Good
21	STAFF...	26	2	Fair
22	STAFF...	27	3	Good
23	STAFF...	28	3	Good
24	STAFF...	30	3	Good
25	STAFF...	31	3	Good
26	STAFF...	32	2	Fair
27	STAFF...	33	3	Good
28	STAFF...	35	3	Good
29	STAFF...	36	3	Good
30	STAFF...	38	2	Fair
31	STAFF...	39	3	Good
32	STAFF...	40	4	Excellent
33	STAFF...	41	3	Good
34	STAFF...	42	4	Excellent
35	STAFF...	45	2	Fair

-- w) Group employees into 3 groups based on their stock option level using the [NTILE] function.

SELECT emp_no, Stock_Option_Level, NTILE(3) OVER(ORDER BY Stock_Option_Level) AS group_num

FROM EmployeeHRData;

-- insight: above SQL query was used to group employees into 3 distinct groups based on their Stock_Option_Level value

41

	emp_no	Stock_Option_Level	group_num
1	STAFF-1	0	1
2	STAFF-4	0	1
3	STAFF-5	0	1
4	STAFF-8	0	1
5	STAFF-12	0	1
6	STAFF-15	0	1
7	STAFF-19	0	1
8	STAFF-27	0	1
9	STAFF-28	0	1
10	STAFF-30	0	1
11	STAFF-31	0	1
12	STAFF-23	0	1
13	STAFF-24	0	1
14	STAFF-33	0	1
15	STAFF-38	0	1
16	STAFF-39	0	1
17	STAFF-40	0	1
18	STAFF-41	0	1
19	STAFF-47	0	1
20	STAFF-49	0	1
21	STAFF-55	0	1
22	STAFF-56	0	1
23	STAFF-57	0	1
24	STAFF-58	0	1
25	STAFF-60	0	1
26	STAFF-61	0	1
27	STAFF-62	0	1
28	STAFF-63	0	1
29	STAFF-64	0	1
30	STAFF-65	0	1
31	STAFF-73	0	1
32	STAFF-79	0	1
33	STAFF-85	0	1
34	STAFF-81	0	1
35	STAFF-91	0	1

	emp_no	Stock_Option_Level	group_num
613	STAFF-1716	0	2
614	STAFF-1624	0	2
615	STAFF-1818	0	2
616	STAFF-1783	0	2
617	STAFF-1933	0	2
618	STAFF-1494	0	2
619	STAFF-1967	0	2
620	STAFF-1649	0	2
621	STAFF-1684	0	2
622	STAFF-1968	0	2
623	STAFF-1862	0	2
624	STAFF-1797	0	2
625	STAFF-1420	0	2
626	STAFF-1458	0	2
627	STAFF-1489	0	2
628	STAFF-1758	0	2
629	STAFF-1868	0	2
630	STAFF-1667	0	2
631	STAFF-1878	0	2
632	STAFF-1702	1	2
633	STAFF-1905	1	2
634	STAFF-1821	1	2
635	STAFF-2055	1	2
636	STAFF-1464	1	2
637	STAFF-1767	1	2
638	STAFF-1569	1	2
639	STAFF-1486	1	2
640	STAFF-2023	1	2
641	STAFF-1562	1	2
642	STAFF-1457	1	2
643	STAFF-1714	1	2
644	STAFF-1960	1	2
645	STAFF-2032	1	2
646	STAFF-1807	1	2
647	STAFF-1572	1	2

	emp_no	Stock_Option_Level	group_num
967	STAFF-894	1	2
968	STAFF-895	1	2
969	STAFF-887	1	2
970	STAFF-869	1	2
971	STAFF-880	1	2
972	STAFF-881	1	2
973	STAFF-882	1	2
974	STAFF-855	1	2
975	STAFF-857	1	2
976	STAFF-859	1	2
977	STAFF-861	1	2
978	STAFF-862	1	2
979	STAFF-864	1	2
980	STAFF-865	1	2
981	STAFF-843	1	3
982	STAFF-844	1	3
983	STAFF-813	1	3
984	STAFF-851	1	3
985	STAFF-847	1	3
986	STAFF-848	1	3
987	STAFF-829	1	3
988	STAFF-830	1	3
989	STAFF-836	1	3
990	STAFF-837	1	3
991	STAFF-827	1	3
992	STAFF-816	1	3
993	STAFF-820	1	3
994	STAFF-823	1	3
995	STAFF-824	1	3
996	STAFF-805	1	3
997	STAFF-807	1	3
998	STAFF-808	1	3
999	STAFF-809	1	3
1...	STAFF-800	1	3
1...	STAFF-791	1	3

```
-- x) Find key reasons for Attrition in Company

SELECT (Environment_Satisfaction+Job_Satisfaction+Relationship_Satisfaction) AS
satisfaction_factor, Education, COUNT(*) AS attrition_frequency

FROM EmployeeHRData

WHERE Attrition='YES'

GROUP BY Education,
(Environment_Satisfaction+Job_Satisfaction+Relationship_Satisfaction)
```

44

```
ORDER BY COUNT(*) DESC, satisfaction_factor, Education;

-- insight: Employees with a lower level of education or low
'satisfaction_factor' have a higher chance of leaving,

-- but those with a higher level of education are much less likely to leave

-- also, with a high value of 'satisfaction_factor' , they are less likely to
leave inspite of education level
```

	satisfaction_factor	Education	attrition_frequency
1	8	Bachelor's Degree	21
2	7	Master's Degree	18
3	6	Bachelor's Degree	17
4	9	Bachelor's Degree	15
5	7	Associates Degree	12
6	10	Bachelor's Degree	12
7	5	Bachelor's Degree	10
8	7	Bachelor's Degree	10
9	9	Master's Degree	10
10	4	Bachelor's Degree	8
11	6	High School	7
12	6	Master's Degree	7
13	8	Associates Degree	7
14	8	Master's Degree	7
15	9	Associates Degree	6
16	11	Master's Degree	6
17	10	High School	5
18	3	Associates Degree	4
19	5	Associates Degree	4
20	5	High School	4
21	9	High School	4
22	10	Master's Degree	4
23	11	Associates Degree	4
24	11	Bachelor's Degree	4
25	11	High School	4
26	5	Master's Degree	3
27	7	High School	3
28	8	High School	3
29	10	Associates Degree	3
30	3	Bachelor's Degree	2
31	4	Associates Degree	2
32	6	Associates Degree	2
33	3	Master's Degree	1
34	4	Master's Degree	1
35	5	Doctoral Degree	1

```
SELECT CF_age_band, Gender, Marital_Status, COUNT(*) AS frequency
```

```sql
FROM EmployeeHRData

WHERE Attrition='YES'

GROUP BY CF_age_band, Gender, Marital_Status

ORDER BY CF_age_band;
```

-- from the above SQL query, we conclude that those who are in age range of 25 to 34 leave the most

-- inspite of age group, single males have higher chance of attrition

	CF_age_band	Gender	Marital_Status	frequency
1	25 - 34	Female	Divorced	6
2	25 - 34	Female	Married	12
3	25 - 34	Female	Single	25
4	25 - 34	Male	Divorced	8
5	25 - 34	Male	Married	27
6	25 - 34	Male	Single	34
7	35 - 44	Female	Divorced	3
8	35 - 44	Female	Married	5
9	35 - 44	Female	Single	6
10	35 - 44	Male	Divorced	11
11	35 - 44	Male	Married	13
12	35 - 44	Male	Single	13
13	45 - 54	Female	Married	7
14	45 - 54	Female	Single	2
15	45 - 54	Male	Divorced	3
16	45 - 54	Male	Married	6
17	45 - 54	Male	Single	7
18	Over 55	Female	Married	3
19	Over 55	Male	Divorced	1
20	Over 55	Male	Married	2
21	Over 55	Male	Single	5
22	Under 25	Female	Married	4
23	Under 25	Female	Single	14
24	Under 25	Male	Divorced	1
25	Under 25	Male	Married	5
26	Under 25	Male	Single	14

```sql
SELECT Percent_Salary_Hike, COUNT(*) AS frequency

FROM EmployeeHRData

WHERE Attrition='YES'
```

```sql
GROUP BY Percent_Salary_Hike

ORDER BY frequency DESC;
```

-- using the above query, it can be clearly seen that employees with a lesser salary hike are have a higher chance of attrition

	Percent_Salary_Hike	frequency
1	11	41
2	13	34
3	12	33
4	14	24
5	15	18
6	16	14
7	17	14
8	18	13
9	22	12
10	19	9
11	20	7
12	23	6
13	24	6
14	21	5
15	25	1