



SQL-Mongo Project – IBM HR Analytics Employee Attrition & Performance

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[Contents](#)

Relational Data Model.....	3
Entity-Relationship Diagram.....	4
Physical MySQL Database.....	5
Data in the Database.....	5
Screen shot of Physical Database objects.....	6
SQL Queries.....	9
SQL Query 1.....	9
SQL Query 2.....	9
SQL Query 3.....	10
SQL Query 4.....	10
SQL Query 5.....	11
Project Phase 2.....	14
Physical Mongo Database.....	14
Assumptions/Notes About Data Set.....	14
Screen shot of Physical Database objects (Database, Collections and Attributes).....	14
Data in the Database.....	14
MongoDB Queries/Code.....	15
Mongo Query 1.....	15
Mongo Query 2.....	17
Mongo Query 3.....	18

Relational Data Model

Assumptions/Notes About Data Entities and Relationships and reasons why the data model is in 3NF.

Entities and Attributes

Employee: The central entity representing employees. Attributes include unique identifiers, demographic data, and employment-related characteristics like *EmployeeNumber*, *Age*, *Gender*, etc. All tables appear to have only columns that are directly related to an employee, so they are all functionally dependent on the primary key, **EmployeeNumber**. It is in 3NF.

Departments: Represents different departments within the organization. Contains *DepartmentID* and *Department*. “Department” is functionally dependent only on **DepartmentID** and not on any other non-primary key. It is in 3NF.

Education: Details about education credentials of employees. Contains *EducationID* and *EducationField*. *EducationField* is dependent only on **EducationID**, it satisfies the 3NF.

Jobs: Represents the various job roles within the company. This table has **JobID** and **JobRole** which suggests that **JobRole** is dependent only on **JobID**, which complies with 3NF.

Income: Contains financial details related to employees. It has attributes like *HourlyRate*, *MonthlyIncome*, *PercentSalaryHike*, etc., that are dependent only on the primary key *IncomeID* (*EmployeeNumber* is a foreign key here to link this table to Employee Table). It is in 3NF.

Relationships

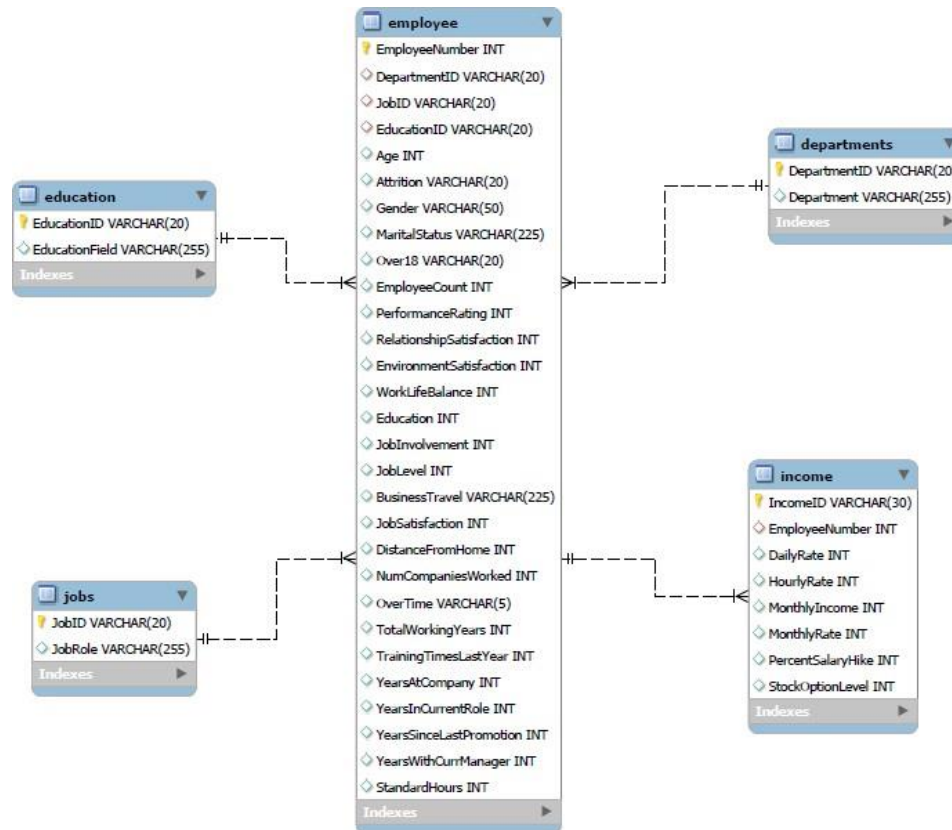
Employee - Departments: Has one-to-many relationship. Each employee is associated with one department, and each department can have multiple employees. Linked via *DepartmentID*.

Employee - Education: Has one-to-many relationship. Each employee has one educational record, and each education field can be linked to multiple employees. Linked via *EducationID*.

Employee - Jobs: Has one-to-many relationship. Each employee has one job role, and each job role can be associated with multiple employees. Linked via *JobID*.

Employee - Income: Appears to be a one-to-many relationship. Each employee can have multiple income records associated with them as mentioned in our assumptions earlier (*hourlyRate*, *Monthly etc.*). Linked via *EmployeeNumber*

Entity-Relationship Diagram



Physical MySQL Database

Assumptions/Notes About Data Set

- ❖ We have found that columns “EmployeeCount” and “StandardHours” to be constant 1 and 80 respectively. They are not contributing anything or helping with the design of the database. We decided to eliminate them.
- ❖ Also, the column “Over18” provides information that can be obtained from the “age” column. We also eliminate that information.
- ❖ The data also have “DailyRate”, “HourlyRate”, “MonthlyIncome”. Logically, one of these can be used to determine the others. However, since it wasn’t explicitly stated that there is a relationship between them, our assumption is that they are not related to each other. Meaning, the DailyRate cannot be used estimate the HourlyRate or the MonthlyIncome.

Data in the Database

Table Name	Primary Key	Foreign Key	# of Rows in Table
Departments	DepartmentID		3
Education	EducationID		6
Employee	EmployeeNumber	DepartmentID JobID EducationID	1470
Income	IncomeID	EmployeeNumber	1470
Jobs	JobID		9

Screen shot of Physical Database objects.

Departments Table

The screenshot shows the MySQL Workbench interface. On the left, the 'Schemas' pane displays the 'fall2023project' database with a 'departments' table. The 'Table: departments' pane shows the table structure with columns: DepartmentID (PK, varchar(20)), Department (varchar(255)), and a primary key constraint. The main window shows a query: `1 * SELECT * FROM fall2023project.departments;`. The 'Result Grid' displays the following data:

DepartmentID	Department
D1	Sales
D2	Human Resources
D3	Research & Developm...

The 'Output' pane shows the execution of the query, with a message: 'Error Code: 1054. Unknown column 'D1' in 'where clause''. The status bar at the bottom indicates 'Query Completed' at 4:30 PM on 11/26/2023.

Income Table

The screenshot shows the MySQL Workbench interface. On the left, the 'Schemas' pane displays the 'fall2023project' database with an 'income' table. The 'Table: income' pane shows the table structure with columns: IncomeID (PK, varchar(30)), EmployeeNumber (FK, int), DailyRate (int), HourlyRate (int), MonthlyIncome (int), MonthlyRate (int), PercentSalaryHike (int), and StockOptionLevel (int). The main window shows a query: `1 * SELECT * FROM fall2023project.income;`. The 'Result Grid' displays the following data:

IncomeID	EmployeeNumber	DailyRate	HourlyRate	MonthlyIncome	MonthlyRate	PercentSalaryHike	StockOptionLevel
IN1	1	1102	94	5993	19479	11	0
IN10	13	1299	94	5237	16577	13	2
IN100	132	489	67	2042	25043	12	1
IN1000	1408	1147	31	16799	16616	14	1
IN1001	1409	258	54	2950	17363	13	0
IN1002	1411	1462	94	3629	19106	18	0
IN1003	1412	200	60	9362	19944	11	0
IN1004	1415	949	81	3229	4910	11	1
IN1005	1417	652	100	3578	23577	12	0
IN1006	1419	332	51	7988	9769	13	0
IN1007	1420	1475	97	4284	22710	20	0
IN1008	1421	337	84	7553	22930	12	0
IN1009	1422	971	54	17328	5652	19	0
IN101	133	807	63	2073	23648	22	0
IN1010	1423	1055	76	19701	72456	21	1

The 'Output' pane shows the execution of the query, with a message: 'Error Code: 1054. Unknown column 'D1' in 'where clause''. The status bar at the bottom indicates 'Query Completed' at 4:33 PM on 11/26/2023.

Employee Table

The screenshot displays the SQL Server Enterprise interface. The left pane shows the 'Schemas' tree with 'fall2023project' expanded, listing tables like 'departments', 'education', 'employee', 'income', and 'jobs'. The 'employee' table is selected, and its columns are listed: EmployeeNumber, DepartmentID, JobID, EducationID, Age, Attrition, Gender, MaritalStatus, PerformanceRating, RelationshipSatisfaction, Environment, and TotalWorkingYears. The main pane shows the query 'SELECT * FROM fall2023project.employee;' with a result grid containing 20 rows of employee data. The bottom pane shows the 'Output' window with a list of actions and their durations.

EmployeeNumber	DepartmentID	JobID	EducationID	Age	Attrition	Gender	MaritalStatus	PerformanceRating	RelationshipSatisfaction	Environment
1	D1	J1	E1	41	Yes	Female	Single	3	1	2
2	D3	J2	E1	49	No	Male	Married	4	4	3
4	D3	J3	E3	37	Yes	Male	Single	3	2	4
5	D3	J2	E1	33	No	Female	Married	3	3	4
7	D3	J3	E2	27	No	Male	Married	3	4	1
8	D3	J3	E1	32	No	Male	Single	3	3	4
10	D3	J3	E2	59	No	Female	Married	4	1	3
11	D3	J3	E1	30	No	Male	Divorced	4	2	4
12	D3	J4	E1	38	No	Male	Single	4	2	4
13	D3	J5	E2	36	No	Male	Married	3	2	3
14	D3	J3	E2	35	No	Male	Married	3	3	1
15	D3	J3	E1	29	No	Female	Single	3	4	4
16	D3	J2	E1	31	No	Male	Divorced	3	4	1
18	D3	J3	E2	34	No	Male	Divorced	3	3	2
19	D3	J3	E1	28	Yes	Male	Single	3	2	3
20	D3	J4	E1	29	No	Female	Divorced	3	2	3

Education Table

The screenshot displays the SQL Server Enterprise interface. The left pane shows the 'Schemas' tree with 'fall2023project' expanded, listing tables like 'departments', 'education', 'employee', 'income', and 'jobs'. The 'education' table is selected, and its columns are listed: EducationID and EducationField. The main pane shows the query 'SELECT * FROM fall2023project.education;' with a result grid containing 6 rows of education data. The bottom pane shows the 'Output' window with a list of actions and their durations.

EducationID	EducationField
E1	Life Sciences
E2	Medical
E3	Other
E4	Marketing
E5	Human Resources
E6	Technical Degree

Jobs Table

The screenshot displays the Microsoft SQL Server Enterprise Edition interface. The left-hand 'SCHEMAS' pane shows the database structure, with the 'fa112023project' database selected. Under 'Tables', the 'jobs' table is highlighted. The 'Table: jobs' information pane shows its columns: 'JobID' (varchar(20), PK) and 'JobRole' (varchar(255)).

The central 'SQL: fa112023project.jobs' pane contains the following query:

```
1 * SELECT * FROM fa112023project.jobs;
```

The 'Result Grid' pane displays the data returned by the query:

JobID	JobRole
J1	Sales Executive
J2	Research Scientist
J3	Laboratory Technician
J4	Manufacturing Director
J5	Healthcare Representative
J6	Manager
J7	Human Resources
J8	Research Director
J9	Sales Representative

The bottom 'Output' pane shows the execution results of the query. It includes a table with columns for Time, Action, Message, and Duration / Fetch. The output indicates that the query successfully returned 9 rows.

Time	Action	Message	Duration / Fetch
113 16:30:37	SELECT FROM fa112023project.departments LIMIT 0, 2000	3 row(s) returned	0.000 sec / 0.000 sec
114 16:31:37	SELECT FROM fa112023project.income LIMIT 0, 2000	1470 row(s) returned	0.000 sec / 0.000 sec
115 16:33:13	SELECT FROM fa112023project.employee LIMIT 0, 2000	1470 row(s) returned	0.000 sec / 0.015 sec
116 16:33:49	SELECT FROM fa112023project.education LIMIT 0, 2000	6 row(s) returned	0.000 sec / 0.000 sec
117 16:34:49	SELECT FROM fa112023project.jobs LIMIT 0, 2000	9 row(s) returned	0.000 sec / 0.000 sec

SQL Queries

1) If the company wants to cut travel costs, which department should the company focus on?

Translation:

Select Department, Count of departments from table Employee joined with table departments matched on Employee's DepartmentID and Departments' DepartmentID where BusinessTravel is 'Travel Frequently' Group by Department.

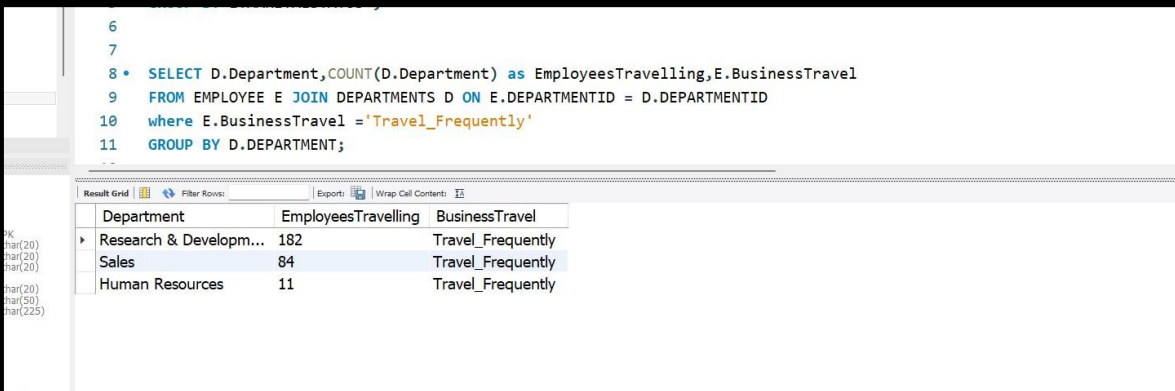
Clean up:

Select Department, Count(departments) from ~~table~~ Employee joined ~~with table~~ departments ~~matched~~ on Employee' DepartmentID ~~and~~ = Departments' DepartmentID where BusinessTravel is 'Travel Frequently' Group by Department.

Query:

```
SELECT D.Department, COUNT(D.Department) as EmployeesTravelling, E.BusinessTravel
FROM EMPLOYEE E JOIN DEPARTMENTS D ON E.DEPARTMENTID = D.DEPARTMENTID
where E.BusinessTravel = 'Travel_Frequently'
GROUP BY D.DEPARTMENT;
```

Result:



Department	EmployeesTravelling	BusinessTravel
Research & Developm...	182	Travel_Frequently
Sales	84	Travel_Frequently
Human Resources	11	Travel_Frequently

From the result we can see that the Research and Development Department has 182 Employees travelling Frequently. Therefore the company should focus on this department in order to reduce travel costs.

2) The company has been paying gas expenses for miles traveled by employees between their home and work. If they want to increase the per mile compensation, which department's employees will gain the most?

Translation:

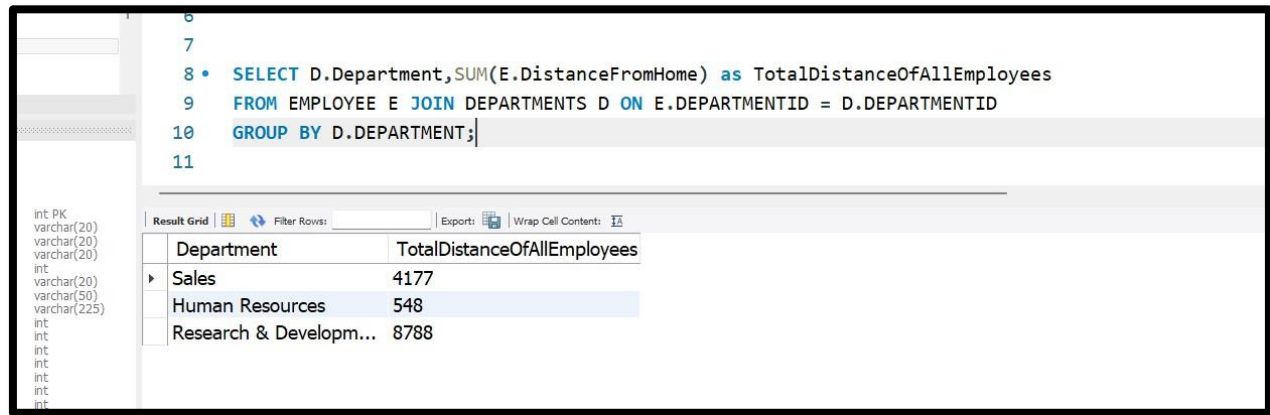
Select Department, Sum of DistanceFromHome as TotalDistanceofAllEmployees from table Employee joined with table departments matched on Employee' DepartmentID = Departments' DepartmentID Group by Departments.

Cleanup:

Select Department, Sumof(DistanceFromHome) as TotalDistanceofAllEmployees from ~~table~~ Employee joined ~~with table~~ departments ~~matched~~ on Employee.DepartmentID = Departments.DepartmentID Group by Departments.

Query:

```
SELECT D.Department,SUM(E.DistanceFromHome) as TotalDistanceOfAllEmployees
FROM EMPLOYEE E JOIN DEPARTMENTS D ON E.DEPARTMENTID = D.DEPARTMENTID
GROUP BY D.DEPARTMENT;
```

Result:


Department	TotalDistanceOfAllEmployees
Sales	4177
Human Resources	548
Research & Development	8788

Here we see that the total distance of all employees in the Research and Development Department is more than the other 2 departments. Hence if there is an increase in per mile compensation , then this department's employees will be benefited the most.

3) A press article in a business magazine has said that at this company, married men have higher performance ratings than divorced or single men. What initial finding can you obtain from the data to help articulate the company's response in this regard?

Translation:

Select Count of PerformanceRating , MaritalStatus from table Employee where PerformanceRating >'3' and Gender ='Male' Group by MaritalStatus Order by PerformanceRating.

Clean up:

Select Count of (PerformanceRating) , MaritalStatus from table Employee where PerformanceRating >'3' and Gender ='Male' Group by MaritalStatus Order by PerformanceRating.

Query:

```
SELECT COUNT(E.PERFORMANCERATING) HighPerformance , E.MaritalStatus
FROM EMPLOYEE E
WHERE E.PERFORMANCERATING >'3'
And E.Gender= 'Male'
GROUP BY E.MARITALSTATUS
ORDER BY HighPerformance ;
```

Result:

7	
8	• SELECT COUNT(E.PERFORMANCERATING) HighPerformance , E.MaritalStatus
9	FROM EMPLOYEE E
10	WHERE E.PERFORMANCERATING > '3'
11	And E.Gender='Male'
12	GROUP BY E.MARITALSTATUS
13	ORDER BY HighPerformance ;
14	

HighPerformance	MaritalStatus
29	Divorced
44	Single
59	Married

Here we see that the 59 Married Men have a high performance rating as compared to the Single and Divorced men who are lesser. Therefore we can agree to the article about married men having higher performance rating from the initial findings.

4) The HR department feels they have the highest job satisfaction while Research & Development department feels their department has the highest environment satisfaction. Who is right?

Translation:

Select Department, Count of JobSatisfaction as NoOfEmployeesSatisfied from table Employee joined with table departments matched on Employee' DepartmentID = Departments' DepartmentID where JobSatisfaction > 2 Group by Department

UNION

Select Department, Count of EnvironmentSatisfaction as NoOfEmployeesSatisfied from table Employee joined with table departments matched on Employee' DepartmentID = Departments' DepartmentID where EnvironmentSatisfaction > 2 Group by Departments

Clean up:

Select Department, Count of (JobSatisfaction) as NoOfEmployeesSatisfied from table Employee joined with table departments matched on Employee.DepartmentID = Departments.DepartmentID where JobSatisfaction > 2 Group by Department

UNION

Select Department, Count of (EnvironmentSatisfaction) as NoOfEmployeesSatisfied from table Employee joined with table departments matched on Employee.DepartmentID = Departments.DepartmentID where EnvironmentSatisfaction > 2 Group by Department

Query:

SELECT D.Department, COUNT(E.JobSatisfaction) as NoOfEmployeesSatisfied
FROM EMPLOYEE E JOIN DEPARTMENTS D ON E.DEPARTMENTID = D.DEPARTMENTID
where E.JobSatisfaction > 2
GROUP BY D.DEPARTMENT

UNION

SELECT D.Department, COUNT(E.EnvironmentSatisfaction) as NoOfEmployeesSatisfiedEnvironment
FROM EMPLOYEE E JOIN DEPARTMENTS D ON E.DEPARTMENTID = D.DEPARTMENTID
where E.EnvironmentSatisfaction > 2
GROUP BY D.DEPARTMENT;

Result:

```
8 • SELECT D.Department,COUNT(E.JobSatisfaction) as NoOfEmployeesSatisfied
9 FROM EMPLOYEE E JOIN DEPARTMENTS D ON E.DEPARTMENTID = D.DEPARTMENTID
10 where E.JobSatisfaction > 2
11 GROUP BY D.DEPARTMENT
12 UNION
13 SELECT D.Department,COUNT(E.EnvironmentSatisfaction) as NoOfEmployeesSatisfiedEnvironment
14 FROM EMPLOYEE E JOIN DEPARTMENTS D ON E.DEPARTMENTID = D.DEPARTMENTID
15 where E.EnvironmentSatisfaction > 2
16 GROUP BY D.DEPARTMENT;
```

Department	NoOfEmployeesSatisfied
Sales	274
Human Resources	32
Research & Developm...	595
Sales	262
Human Resources	40
Research & Developm...	597

From the outlook , We can see that There are more number of people with job satisfaction in the other 2 departments when compared to HR department whereas in terms of Environment Satisfaction , Research & Development department have the most. Therefore, from the argument, We can say that the Research & Development department are right.

5) A press article in a business magazine has said that at this company, single women in Sales have worked at the company longer than divorced or married women.
What initial finding can you obtain from the data to help articulate the company's response in this regard?

Translation:

Select Sum(YearsAtCompany) as SumOfYearsWorked , MaritalStatus from table Employee joined with Departments table matched on Employee's DepartmentID = Departments' DepartmentID where Gender is 'female' and department ='Sales' Group by MaritalStatus.

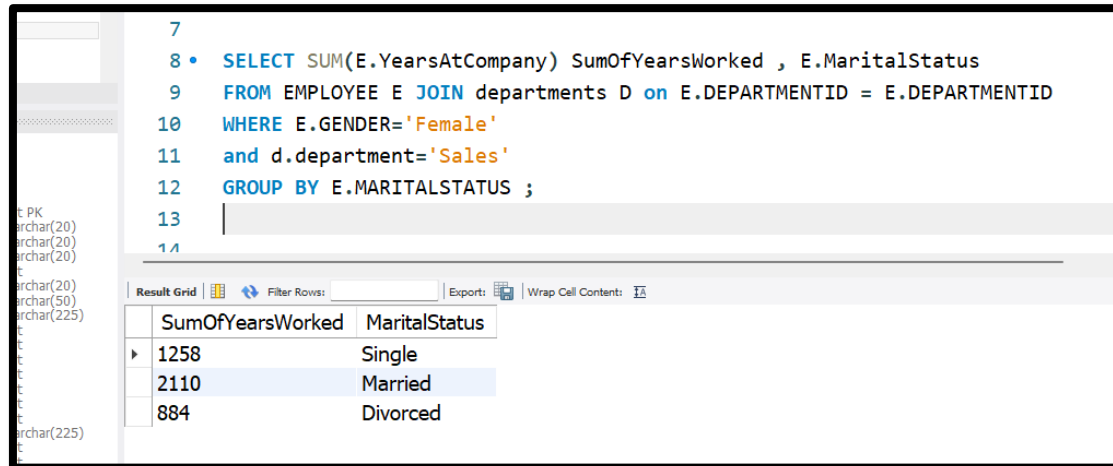
Clean up:

Select Sum(YearsAtCompany) as SumOfYearsWorked , MaritalStatus from ~~table~~ Employee joined with Departments ~~table matched~~ on Employee.DepartmentID = Departments.DepartmentID where Gender is ='female' and department='Sales' Group by MaritalStatus.

Query:

```
SELECT SUM(E.YearsAtCompany) SumOfYearsWorked , E.MaritalStatus
FROM EMPLOYEE E JOIN departments D on E.DEPARTMENTID = E.DEPARTMENTID
WHERE E.GENDER='Female'
and d.department='Sales'
GROUP BY E.MARITALSTATUS ;
```

Result:



The screenshot shows a SQL query editor with a query that calculates the sum of years worked for female employees in the Sales department, grouped by marital status. Below the query, the results are displayed in a table with two columns: SumOfYearsWorked and MaritalStatus. The results show that married women have the highest sum of years worked (2110), followed by single women (1258) and divorced women (884).

```
7
8 • SELECT SUM(E.YearsAtCompany) SumOfYearsWorked , E.MaritalStatus
9 FROM EMPLOYEE E JOIN departments D on E.DEPARTMENTID = E.DEPARTMENTID
10 WHERE E.GENDER='Female'
11 and d.department='Sales'
12 GROUP BY E.MARITALSTATUS ;
13
```

SumOfYearsWorked	MaritalStatus
1258	Single
2110	Married
884	Divorced

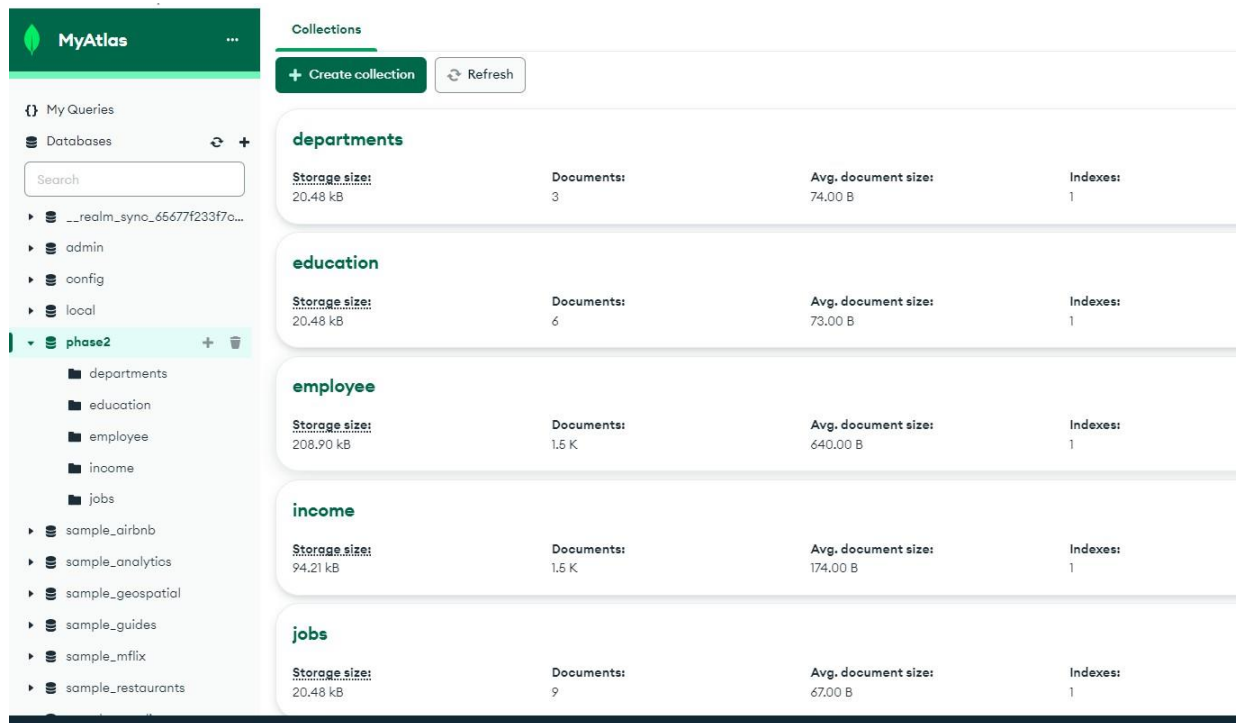
From the result we can see that Married women in Sales have the most number of years worked whereas single women in Sales are the second most. We can say that Single Women of Sales department have worked more years than divorced women in Sales but not more than Married women in Sales department.

Project Phase 2

For Phase 2, we have chosen to import our data into MongoDB and write 3 queries from there.

Data imported in MongoDB

The Data is imported in a database named “phase2” with the different tables: “departments”, “education”. “employee”, “income”, and “jobs”. We will use this database to answer three questions.



The screenshot displays the MongoDB Atlas interface. On the left, a sidebar shows the 'My Queries' and 'Databases' sections. The 'Databases' section is expanded, showing a list of databases including 'phase2'. The 'phase2' database is selected, and its collections are listed: 'departments', 'education', 'employee', 'income', and 'jobs'. The main panel shows the 'Collections' tab for the 'phase2' database. It lists the following collections with their respective storage sizes, document counts, average document sizes, and index counts:

Collection Name	Storage size	Documents	Avg. document size	Indexes
departments	20.48 kB	3	74.00 B	1
education	20.48 kB	6	73.00 B	1
employee	208.90 kB	1.5 K	640.00 B	1
income	94.21 kB	1.5 K	174.00 B	1
jobs	20.48 kB	9	67.00 B	1

MongoDB Queries.

Query 1:

The company has been paying gas expenses for miles traveled by employees between their home and work. If they want to increase the per mile compensation, which department's employees will gain the most?

Translation:

Show the average distance from home of all employees group by department.

MongoDB scripts:

```
db.employee.aggregate([
{
$group: {
_id: "$DepartmentID",
AverageDistanceFromHome: { $avg: "$DistanceFromHome" }
},
{
$lookup: {
from: "departments",
localField: "_id",
foreignField:
"DepartmentID", as:
"departmentDetails"
},
{
$unwind: "$departmentDetails"
},
{
$project: {
_id: 0,
Department:
"$departmentDetails.Department",
AverageDistanceFromHome: 1
},
{
$sort: { Department: 1 }
}
])
```

Results:

```
      _id: 0,
      Department: "$departmentDetails.Department",
      AverageDistanceFromHome: 1
    }
  },
  {
    $sort: { Department: 1 }
  }
])
< {
  AverageDistanceFromHome: 8.698412698412698,
  Department: 'Human Resources'
}
{
  AverageDistanceFromHome: 9.144640998959417,
  Department: 'Research & Development'
}
{
  AverageDistanceFromHome: 9.365470852017937,
  Department: 'Sales'
}
Atlas atlas-2umg7s-shard-0 [primary] phase2>
```

According to the results, “Human Resources” employees have the lowest distance from home (8.7 miles), followed by “Research & Development” (9.14 miles) and “Sales” department has the highest with 9.36 miles. Therefore Sales department employees will gain the most benefit.

Query 2:

The HR department feels they have the highest job satisfaction while Research & Development department feels their department has the highest environment satisfaction. Who is right?

Translation

Show the average rating of “job satisfaction” and “environment satisfaction” of all employees based on the departments.


```

db.employee.aggregate([
  {
    $group: {
      _id: "$DepartmentID", // Assuming DepartmentID links to the departments
      collection AverageJobSatisfaction: { $avg: "$JobSatisfaction" },
      AverageEnvironmentSatisfaction: { $avg: "$EnvironmentSatisfaction" }
    }
  },
  {
    $lookup: {
      from: "departments",
      localField: "_id",
      foreignField:
        "DepartmentID", as:
        "departmentDetails"
    }
  },
  {
    $unwind: "$departmentDetails"
  },
  {
    $project: {
      _id: 0,
      Department:
        "$departmentDetails.Department",
      AverageJobSatisfaction: 1,
      AverageEnvironmentSatisfaction: 1
    }
  },
  {
    $sort: { Department: 1 }
  }
])

```

Results:

```
>_MONGOSH
    }
  },
  {
    $sort: { Department: 1 }
  }
})
< {
  AverageJobSatisfaction: 2.6031746031746033,
  AverageEnvironmentSatisfaction: 2.6825396825396823,
  Department: 'Human Resources'
}
{
  AverageJobSatisfaction: 2.7263267429760667,
  AverageEnvironmentSatisfaction: 2.7440166493236213,
  Department: 'Research & Development'
}
{
  AverageJobSatisfaction: 2.7511210762331837,
  AverageEnvironmentSatisfaction: 2.679372197309417,
  Department: 'Sales'
}
Atlas atlas-2umg7s-shard-0 [primary] phase2> |
```

From the results, we can see that the Human Resource department actually has the **lowest** Job Satisfaction of all the department (2.6032). The Sales department is actually the department with the **highest** rating (.2.75).

On the other hand, the Research Development department indeed has the highest rating (2.744) of all the departments. So Research Development department is right in their words.

Question 3:

An employee in Sales department has complained to HR saying that females are paid less than males in the company, in all departments. What insight can you provide to prove or disprove that statement?

Translation:

For simplicity, we are comparing only the monthly income for this question.

Display the average total monthly income of male and female employees in each department.

MongoDB Queries:

```
db.employee.aggregate([
  {
    $lookup: {
      from: "income",
      localField: "EmployeeNumber",
```

```

    foreignField:
      "EmployeeNumber", as:
      "incomeDetails"
  }
},
{
  $unwind: "$incomeDetails"
},
{
  $group: {
    _id: { DepartmentID: "$DepartmentID", Gender: "$Gender" },
    AverageMonthlyIncome: { $avg: "$incomeDetails.MonthlyIncome" }
  }
},
{
  $lookup: {
    from: "departments",
    localField:
      "_id.DepartmentID",
    foreignField:
      "DepartmentID", as:
      "departmentDetails"
  }
},
{
  $unwind: "$departmentDetails"
},
{
  $project: {
    _id: 0,
    Department:
      "$departmentDetails.Department", Gender:
      "$_id.Gender", AverageMonthlyIncome: 1
  }
},
{
  $sort: { Department: 1, Gender: 1 }
}
})

```

Results:

```
17 MY QUERIES
>_MONGOSH

  })
< {
  AverageMonthlyIncome: 7264,
  Department: 'Human Resources',
  Gender: 'Female'
}
{
  AverageMonthlyIncome: 6371.023255813953,
  Department: 'Human Resources',
  Gender: 'Male'
}
{
  AverageMonthlyIncome: 6513.691292875989,
  Department: 'Research & Development',
  Gender: 'Female'
}
{
  AverageMonthlyIncome: 6129.888316151203,
  Department: 'Research & Development',
  Gender: 'Male'
}
{
  AverageMonthlyIncome: 6972.126984126984,
  Department: 'Sales',
  Gender: 'Female'
}
{
  AverageMonthlyIncome: 6949.645914396887,
  Department: 'Sales',
  Gender: 'Male'
}
}

Atlas atlas-2umg7s-shard-0 [primary] phase2>
```

Based on the results of the query, it's actually the opposite. Women have a slightly higher income than men in all the departments. Except Sale department with a roughly same income, women have higher income than men in Research & Development 6,513 to 6,129; in Human Resources 7,264 to 6,371.