Solutions:

# Employees schema:

## 1. Find out how much each department of Finance and Sales are paying to their employees currently?

**Answer**:

Finance 330571499

Sales 1133488684

## 2. Which manager is getting paid the least currently?

**Answer**:

## 110420 Oscar Ghazalie

## SELECT \*

## FROM employees e INNER JOIN salaries s

## ON e.emp\_no = s.emp\_no

## INNER JOIN dept\_manager d\_m

## ON e.emp\_no = d\_m.emp\_no

## WHERE s.to\_date > '2018-01-01'

## AND d\_m.to\_date > '2018-01-01'

## ORDER BY s.salary ASC;

## 3. Find out average salary and number of employees of each title in the company (based on current salaries)?

**Answer**:

|  |  |  |
| --- | --- | --- |
| Title | Salary | Number |
| Assistant Engineer | 57504.68 | 1188 |
| Engineer | 59590.07 | 10549 |
| Manager | 77723.67 | 9 |
| Senior Engineer | 70845.33 | 29283 |
| Senior Staff | 80584.05 | 27795 |
| Staff | 67322.37 | 8637 |
| Technique Leader | 67406.58 | 4174 |

SELECT title,

AVG(salary) avg\_salary,

COUNT(distinct s.emp\_no) cnt\_employees

FROM salaries s

INNER JOIN titles t

ON t.emp\_no = s.emp\_no

WHERE s.to\_date > '2018-01-01'

AND t.to\_date > '2018-01-01'

GROUP BY t.title;

# Classicmodels schema:

## 4. The dealership sales team wants to know which products are the most popular products in their store. Help them with a list of 10 most popular products and their number of purchase.

**Answer:**

|  |  |  |
| --- | --- | --- |
| S18\_3232 | 1992 Ferrari 360 Spider red | 1808 |
| S18\_1342 | 1937 Lincoln Berline | 1111 |
| S700\_4002 | American Airlines: MD-11S | 1085 |
| S18\_3856 | 1941 Chevrolet Special Deluxe Cabriolet | 1076 |
| S50\_1341 | 1930 Buick Marquette Phaeton | 1074 |
| S18\_4600 | 1940s Ford truck | 1061 |
| S10\_1678 | 1969 Harley Davidson Ultimate Chopper | 1057 |
| S12\_4473 | 1957 Chevy Pickup | 1056 |
| S18\_2319 | 1964 Mercedes Tour Bus | 1053 |
| S24\_3856 | 1956 Porsche 356A Coupe | 1052 |

SELECT p.productCode,

p.productName,

sum(quantityOrdered) num\_of\_purchase

FROM products p INNER JOIN orderdetails od

ON p.productCode = od.productCode

GROUP BY p.productCode

ORDER BY num\_of\_purchase DESC

LIMIT 10;

## 5. The car dealership wants to run a highly targeted marketing campaign for its customers.

## They want to target customers that has purchased more than five times OR purchased more than $150,000

## Provide an analysis and report of customer names, address and phone numbers that helps the marketing team to target these customers.

**Answer:**

## 

SELECT c.customerNumber

FROM customers c INNER JOIN orders o

ON c.customerNumber = o.customerNumber

GROUP BY customerNumber,

customerName,

phone,

postalCode,

addressLine1,

addressLine2

HAVING COUNT(distinct orderNumber) > 5

UNION ALL

SELECT c.customerNumber

FROM customers c INNER JOIN payments p

ON c.customerNumber = p.customerNumber

GROUP BY customerNumber,

customerName,

phone,

postalCode,

addressLine1,

addressLine2

HAVING SUM(amount) > 150000;

## 6. It is almost end of the year, and it is time to give bonus to an offices that has succeeded and sold highest so far! The company is planning to give %1 of sale amount as a bonus to the most successful office.

## Find out this office and the amount of bonus.

**Answer:**

|  |  |  |
| --- | --- | --- |
| office number | total\_sale | bonus |
| 4 | 2819168.9 | 28191.69 |

SELECT o.officecode,

sum(amount) total\_sale,

sum(amount)\*0.01 bonus

FROM customers c inner join employees e

ON c.salesRepEmployeeNumber = e.employeeNumber

INNER JOIN payments p

ON c.customerNumber = p.customerNumber

INNER JOIN offices o

ON e.officecode = o.officecode

GROUP BY o.officecode

order by total\_sale desc;

## 7. As a sales manager, you want to know which products has the most marginal profit. Marginal profit is defined as: (income – cost)/cost

## Consider ‘buyPrice’ from product table as cost and ‘priceEach’ from orderdetails table as income.

## Find out 10 most marginal profitable product name in the company.

**Answer:**

|  |  |  |
| --- | --- | --- |
| S24\_3420 | 1937 Horch 930V Limousine | 1.283976 |
| S24\_4620 | 1961 Chevrolet Impala | 1.266179 |
| S18\_2432 | 1926 Ford Fire Engine | 1.252236 |
| S12\_3990 | 1970 Plymouth Hemi Cuda | 1.217604 |
| S50\_4713 | 2002 Yamaha YZR M1 | 1.176449 |
| S18\_2625 | 1936 Harley Davidson El Knucklehead | 1.171261 |
| S32\_3207 | 1950's Chicago Surface Lines Streetcar | 1.15591 |
| S24\_2972 | 1982 Lamborghini Diablo | 1.090061 |
| S18\_2870 | 1999 Indy 500 Monte Carlo SS | 1.085581 |
| S18\_3685 | 1948 Porsche Type 356 Roadster | 1.076474 |

SELECT p.productCode,

productname,

(avg(priceEach) - avg(buyprice)) / avg(buyprice) marginal\_profit

FROM products p INNER JOIN orderdetails o

ON p.productCode = o.productCode

GROUP BY productname,

p.productCode

ORDER BY marginal\_profit desc;

## 8. The finance department wants to know risky customers. Help finance department by finding customers with zero credit limit, and those with order amount more than their credit limit plus 40000. (order amount = quantityOrdered \* priceEach).

SELECT c.customernumber,

c.creditLimit

from customers c

where c.creditLimit = 0

union all

SELECT c.customerNumber,

avg(c.creditLimit) LIMITT

FROM customers c LEFT JOIN orders o

ON c.customerNumber = o.customerNumber

LEFT JOIN orderdetails od

ON o.orderNumber = od.orderNumber

GROUP By c.customerNumber

HAVING (LIMITT - avg(od.priceEach)\*avg(quantityOrdered)) < 40000;