**SUMMARISING DATA**

**EXERCISES**

1.         Display maximum, minimum and average salaries for all employees in the emp table together with the total number of employees.

|  |  |  |  |
| --- | --- | --- | --- |
| **Maximum Salary** | **Minimum Salary** | **Average Salary** | **No of Employees** |
| 5000 | 800 | 2073.214285714286 | 14 |

2.         Display the total quantity sold for product id 100870 (qty is in the item table)

|  |  |
| --- | --- |
| **Prodid** | **Quantity sold** |
| 100870 | 2288 |

3.         Display the quantity of each product sold (Hint: Use the GROUP BY clause)

|  |  |
| --- | --- |
| **PRODID** | **Quantity Sold** |
| 100860 | 642 |
| 100861 | 298 |
| 100870 | 2288 |
| 100871 | 1803 |
| 100890 | 512 |
| 101860 | 351 |
| 101863 | 450 |
| 102130 | 721 |
| 200376 | 1511 |
| 200380 | 550 |

4.         Display the order value (cost) of each order up to and including order id 605. The total order value is the qty \* actualprice for each item in the order. Display the order value to 2 decimal places prefixed with a £ sign.

|  |  |
| --- | --- |
| **ORDID** | **Order Value** |
| 601 | £2.40 |
| 602 | £56.00 |
| 603 | £120.00 |
| 604 | £550.00 |
| 605 | £7564.00 |

5.         Extend the last query to include the number of items per order and the average quantity of items within each order.

|  |  |  |  |
| --- | --- | --- | --- |
| **ORDID** | **Order Value** | **No of items** | **Average Qty** |
| 601 | £2.40 | 1 | 1 |
| 602 | £56.00 | 1 | 20 |
| 603 | £120.00 | 1 | 4 |
| 604 | £550.00 | 3 | 5 |
| 605 | £7564.00 | 6 | 127.5 |

 The following exercises combine aggregate functions with joins.

6.         Display the prodid, product description and total quantity of each product sold as shown below:

|  |  |  |
| --- | --- | --- |
| **PRODID** | **DESCRIP** | **Quantity Sold** |
| 100860 | ACE TENNIS RACKET I | 642 |
| 100861 | ACE TENNIS RACKET II | 298 |
| 100870 | ACE TENNIS BALLS-3 PACK | 2288 |
| 100871 | ACE TENNIS BALLS-6 PACK | 1803 |
| 100890 | ACE TENNIS NET | 512 |
| 101860 | SP TENNIS RACKET | 351 |
| 101863 | SP JUNIOR RACKET | 450 |
| 102130 | RH: "GUIDE TO TENNIS" | 721 |
| 200376 | SB ENERGY BAR-6 PACK | 1511 |
| 200380 | SB VITA SNACK-6 PACK | 550 |

1. Display the same details but only for those orders placed on or after 16th February 2005.

|  |  |  |
| --- | --- | --- |
| **PRODID** | **DESCRIP** | **Quantity Sold** |
| 100860 | ACE TENNIS RACKET I | 10 |
| 100861 | ACE TENNIS RACKET II | 10 |
| 100870 | ACE TENNIS BALLS-3 PACK | 100 |
| 100871 | ACE TENNIS BALLS-6 PACK | 50 |
| 102130 | RH: "GUIDE TO TENNIS" | 600 |
| 200376 | SB ENERGY BAR-6 PACK | 1100 |
| 200380 | SB VITA SNACK-6 PACK | 100 |

8.         Display the total number of ordered items and value of those orders on or after 2nd February 2005 for each customer.

|  |  |  |
| --- | --- | --- |
| **NAME** | **No of items ordered** | **Order Value** |
| EVERY MOUNTAIN | 4 | £1260.00 |
| JOCKSPORTS | 5 | £5150.00 |
| JUST TENNIS | 5 | £764.00 |
| K + T SPORTS | 10 | £46220.00 |
| VOLLEYRITE | 3 | £2969.50 |

9.             Display the same details as above but only for those customers who have placed five or more orders on or after the 2nd February 2005. You will need to use a HAVING clause.

|  |  |  |
| --- | --- | --- |
| **NAME** | **No of items ordered** | **Order Value** |
| JOCKSPORTS | 5 | £5150.00 |
| JUST TENNIS | 5 | £764.00 |
| K + T SPORTS | 10 | £46220.00 |

10.          Display the total value of items ordered on or after 2nd February 2005 by each sales representative who has accepted three or more orders of £1000 or more in value.

|  |  |  |  |
| --- | --- | --- | --- |
| **ENAME** | **DNAME** | **No of items ordered** | **Order Value** |
| ALLEN | SALES | 4 | £1260.00 |
| MARTIN | SALES | 3 | £2969.50 |
| TURNER | SALES | 15 | £51370.00 |

11a.       Display details of number and total value of orders of each product accepted by each sales representative who has accepted three or more orders for the product. The output should be displayed in order by sales representative name and product id and include the hiredate of the employee. Sort results by employee name then prodid.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ENAME** | **HIREDATE** | **DESCRIP** | **No of Orders** | **Order Value** |
| ALLEN | 1981-02-20 | ACE TENNIS BALLS-6 PACK | 5 | £1096.80 |
| MARTIN | 1981-09-28 | ACE TENNIS RACKET I | 4 | £15096.00 |
| MARTIN | 1981-09-28 | ACE TENNIS BALLS-3 PACK | 4 | £2892.40 |
| TURNER | 1981-09-08 | ACE TENNIS RACKET II | 3 | £4985.00 |
| TURNER | 1981-09-08 | ACE TENNIS BALLS-3 PACK | 3 | £1692.50 |
| TURNER | 1981-09-08 | RH: "GUIDE TO TENNIS" | 3 | £2043.40 |
| TURNER | 1981-09-08 | SB ENERGY BAR-6 PACK | 3 | £3320.00 |
| WARD | 1981-02-22 | ACE TENNIS RACKET II | 3 | £4226.00 |
| WARD | 1981-02-22 | ACE TENNIS NET | 3 | £580.00 |

11b. When you summarise data, it is always good practice to make sure that the results are correct. One way to test this is to display the detail rows for one of the grouped by results and manually check that the aggregate columns are calculated correctly.

Display the orders and order values for sales representative ALLEN and locate those products that have been ordered three or more times (just the highlighted rows below)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ENAME** | **HIREDATE** | **DESCRIP** | **ORDID** | **Order Value** |  |  |
| ALLEN | 1981-02-20 | ACE TENNIS BALLS-3 PACK | 615 | 280 |  |  |
| ALLEN | 1981-02-20 | ACE TENNIS BALLS-6 PACK | 607 | 5.6 | } | No. of orders = 5 |
| ALLEN | 1981-02-20 | ACE TENNIS BALLS-6 PACK | 615 | 250 | } | Total = 1096.80 |
| ALLEN | 1981-02-20 | ACE TENNIS BALLS-6 PACK | 608 | 11.2 | }- | Matches results |
| ALLEN | 1981-02-20 | ACE TENNIS BALLS-6 PACK | 612 | 550 | } | from query 11a |
| ALLEN | 1981-02-20 | ACE TENNIS BALLS-6 PACK | 619 | 280 | } | for rep ALLEN |
| ALLEN | 1981-02-20 | ACE TENNIS RACKET I | 612 | 3000 |  |  |
| ALLEN | 1981-02-20 | ACE TENNIS RACKET II | 612 | 810 |  |  |
| ALLEN | 1981-02-20 | ACE TENNIS RACKET II | 615 | 180 |  |  |
| ALLEN | 1981-02-20 | RH: "GUIDE TO TENNIS" | 619 | 340 |  |  |
| ALLEN | 1981-02-20 | SB ENERGY BAR-6 PACK | 619 | 240 |  |  |
| ALLEN | 1981-02-20 | SB VITA SNACK-6 PACK | 619 | 400 |  |  |
| ALLEN | 1981-02-20 | SP JUNIOR RACKET | 612 | 1500 |  |  |
| ALLEN | 1981-02-20 | SP TENNIS RACKET | 608 | 24 |  |  |

12. Display the average, median, mode, standard deviation, variance, lower and upper quartiles for monthly\_sal for all employees. Round the average, median, standard deviation and variance to the nearest whole number.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **AVERAGE MONTHLY SAL** | **MEDIAN MONTHLY SAL** | **MODE MONTHLY SAL** | **MONTHLY SAL STANDARD DEVIATION** | **MONTHLY SAL VARIANCE** | **MONTHLY SAL LOWER QUARTILE** | **MONTHLY SAL UPPER QUARTILE** |
| 2073 | 1550 | NULL | 1183 | 1398314 | 1250 | 2975 |

Why is the Mode showing as NULL?