

Homework\Homework 2\Homework 2.sql

```
1  -- Question 1
2
3  -- (a)
4  SELECT COUNT(*)
5  FROM products;
6
7  -- productCode is the primary key.
8
9
10 -- (b)
11 SELECT productLine, COUNT(*) AS productCount
12 FROM products
13 GROUP BY productLine
14 ORDER BY productCount DESC;
15
16 -- (c)
17 SELECT COUNT(*) AS productCount
18 FROM products
19 WHERE buyPrice BETWEEN 20 and 100
20 AND productLine IN (
21     SELECT productLine
22     FROM products
23     GROUP BY productLine
24     ORDER BY COUNT(*) DESC
25     LIMIT 3
26 );
27
28 -- (d)
29
30 -- Average buy price of products from each vendor
31 SELECT productVendor, AVG(buyPrice) AS avgBuyPrice
32 FROM products
33 GROUP BY productVendor
34 ORDER BY avgBuyPrice DESC;
35
36 -- Most expensive product from each vendor
37 SELECT productVendor, MAX(buyPrice) AS maxBuyPrice
38 FROM products
39 GROUP BY productVendor
40 ORDER BY maxBuyPrice DESC
41 LIMIT 1;
42
43 -- Least expensive product from each vendor
44 SELECT productVendor, MIN(buyPrice) AS minBuyPrice
45 FROM products
46 GROUP BY productVendor
47 ORDER BY minBuyPrice
48 LIMIT 1;
```

```
49
50 -- Greatest range in price of products from each vendor
51 SELECT productVendor, MAX(buyPrice) - MIN(buyPrice) AS priceRange
52 FROM products
53 GROUP BY productVendor
54 ORDER BY priceRange DESC
55 LIMIT 1;
56
57 -- (e)
58 SELECT productVendor, SUM(quantityInStock * (MSRP - buyPrice)) AS profit,
59        AVG(buyPrice) AS avgBuyPrice
60 FROM products
61 GROUP BY productVendor
62 ORDER BY profit DESC;
63
64
65 -- Question 2
66
67 -- (a)
68 SELECT country, COUNT(*) AS customerCount
69 FROM customers
70 GROUP BY country
71 ORDER BY customerNumber DESC
72 LIMIT 8;
73
74 -- (b)
75 SELECT country, COUNT(customerNumber) AS numCustomer
76 FROM customers
77 GROUP BY country
78 WHERE numCustomer >= 5;
79
80 /* Where filters the rows before they are grouped.
81 In this case we would want to use HAVING so that we can filter the grouped results.
82 */
83
84
85 -- (c)
86 SELECT COUNT(*)
87 FROM customers
88 WHERE creditLimit > 50000
89 AND country IN ('USA', 'CANADA');
90
91 -- (d)
92 SELECT salesRepEmployeeNumber, COUNT(DISTINCT country) AS countryCount
93 FROM customers
94 WHERE salesRepEmployeeNumber IS NOT NULL
95 GROUP BY salesRepEmployeeNumber
96 HAVING countryCount > 1;
97
98 -- Question 3
```

```
99
100 -- (a)
101 SELECT MAX(DATE(orderDate)), MIN(DATE(orderDate))
102 FROM orders
103
104 -- (b)
105 SELECT customerNumber, COUNT(*) AS orderCount
106 FROM orders
107 GROUP BY customerNumber
108 ORDER BY orderCount DESC
109 LIMIT 4;
110
111 -- (c)
112 SELECT customerNumber, DATE(orderDate) AS orderDate,
113 COUNT(*) AS orderPlaced
114 FROM orders
115 GROUP BY customerNumber, Date(orderDate)
116 ORDER BY orderPlaced DESC
117 LIMIT 1;
118
119 -- (d)
120 SELECT COUNT(*)
121 FROM orders
122 WHERE status != 'Shipped'
123 AND (comments LIKE '%ustomer%');
124
125
126 -- Question 4
127
128 -- Wrong Query
129 SELECT customerNumber, country, salesRepEmployeeNumber, creditLimit
130 FROM Customers
131 WHERE creditLimit >= 5e4 AND country = 'USA' OR country = 'Germany' OR country = 'France'
132 ORDER BY creditLimit DESC, country;
133
134 /* WHERE is used wrong,
135 ORDER BY is used to sort the results after the WHERE clause has been applied.
136 */
137
138 -- Correct Query
139 SELECT customerNumber, country, salesRepEmployeeNumber, creditLimit
140 FROM Customers
141 WHERE creditLimit >= 5e4
142 AND country IN ('USA', 'Germany', 'France')
143 ORDER BY country DESC, creditLimit DESC;
```