Database Systems (CS 2005)

SPRING 2024

Department: BS(SE)

Assignment 02

Topic: SQL



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Online Shopping Site Management

1. Select all columns from the Products table.

	product_id	name	description	category_id	price	stock_level
1	1	Laptop	High-performance laptop	1	999.99	15
2	2	Board Game	Fun family board game	4	19.99	10
3	3	Moisturizer	Hydrating face moisturizer	5	14.99	5
4	4	Coffee Beans	Freshly roasted coffee beans	6	9.99	20
5	5	Book	Bestselling novel	8	12.99	10
6	6	Dog Food	Premium dog food	9	29.99	15
7	7	Car Battery	High-performance car battery	10	99.99	10
8	8	Laptop	High-performance laptop	1	999.99	15

2. Select specific columns (name, price) from the Products table.

	name	price
1	Laptop	999.99
2	Board Game	19.99
3	Moisturizer	14.99
4	Coffee Beans	9.99
5	Book	12.99
6	Dog Food	29.99
7	Car Battery	99.99
8	Laptop	999.99

3. Select products with a price greater than 1000.

4. Select products with a stock level less than or equal to 50.

product_id	name	description	category_id	price	stock_level

5. Select products sorted by price in descending order.

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6. Select products with a price between 1000 and 5000.

	product_id	name	description	category_id	price	stock_level
1	10	Basketball	Official size basketball	7	19.99	10
2	21	Basketball	Official size basketball	21	19.99	10
3	16	Board G	Fun family board ga	16	19.99	10
4	2	Board G	Fun family board ga	4	19.99	10
5	5	Book	Bestselling novel	8	12.99	10
6	7	Car Batte	High-performance c	10	99.99	10
7	27	Car Batte	High-performance c	27	99.99	10
8	28	Car Tire	Durable car tire	28	49.99	5

7. Select products with a name starting with 'P'

	category_id
1	1
2	3
3	4
4	5
5	6
6	7
7	8
8	9

8. Select products with a name containing 'Shoes'.

product_id	name	description	category_id	price	stock_level
					_

9. Select products sorted by name in ascending order.

	product_id	name	description	category_id	price	stock_level
1	1	Laptop	High-performance laptop	1	999.99	15
2	2	Board Game	Fun family board game	4	19.99	10
3	4	Coffee Bea	Freshly roasted coffee	6	9.99	20
4	5	Book	Bestselling novel	8	12.99	10
5	6	Dog Food	Premium dog food	9	29.99	15
6	7	Car Battery	High-performance car b	10	99.99	10
7	8	Laptop	High-performance laptop	1	999.99	15
8	10	Basketball	Official size basketball	7	19.99	10

10. Select distinct categories from the Products table.

product_id name description category_id price stock_level

11. Select products with a price less than or equal to 3000 and in category 2.

product_id	name	description	category_id	price	stock_level

12. Select products with a stock level greater than or equal to 10 and less than or equal to 20.

oduct_id	name Laptop	description	category_id	price	stock_level
	Laptop	The state of the s			
		High-performance laptop	1	999.99	15
	Board Game	Fun family board game	4	19.99	10
	Coffee Bea	Freshly roasted coffee	6	9.99	20
	Book	Bestselling novel	8	12.99	10
	Dog Food	Premium dog food	9	29.99	15
	Car Battery	High-performance car b	10	99.99	10
	Laptop	High-performance laptop	1	999.99	15
)	Basketball	Official size basketball	7	19.99	10
)		Book Dog Food Car Battery Laptop	Book Bestselling novel Dog Food Premium dog food Car Battery High-performance car b Laptop High-performance laptop	Book Bestselling novel 8 Dog Food Premium dog food 9 Car Battery High-performance car b 10 Laptop High-performance laptop 1	Book Bestselling novel 8 12.99 Dog Food Premium dog food 9 29.99 Car Battery High-performance car b 10 99.99 Laptop High-performance laptop 1 999.99

13. Select products with a name starting with 'M' and a price greater than 5000.

product_id name description category_id price stock_level

14. Select products with a description containing 'embroidered' and prices less than 3000.

product_id	name	description	category_id	price	stock_level

15. Select products sorted by stock level in descending order.

	product_id	name	description	category_id	price	stock_level
1	4	Coffee Beans	Freshly roasted coffee beans	6	9.99	20
2	20	Coffee Beans	Freshly roasted coffee beans	20	9.99	20
3	19	Green Tea	Organic green tea	19	4.99	15
4	25	Dog Food	Premium dog food	25	29.99	15
5	1	Laptop	High-performance laptop	1	999	15
6	6	Dog Food	Premium dog food	9	29.99	15
7	8	Laptop	High-performance laptop	1	999	15
8	12	Laptop	High-performance laptop	12	999	15

16. Select products with a name not starting with 'L'.

	product_id	name	description	category_id	price	stock_level
1	2 Click to	select the who	le column board game	4	19.99	10
2	3	Moisturizer	Hydrating face moisturizer	5	14.99	5
3	4	Coffee Bea	Freshly roasted coffee b	6	9.99	20
4	5	Book	Bestselling novel	8	12.99	10
5	6	Dog Food	Premium dog food	9	29.99	15
6	7	Car Battery	High-performance car b	10	99.99	10
7	9	Drill	Powerful cordless drill	3	49.99	5
8	10	Basketball	Official size basketball	7	19.99	10

17. Select products with a price greater than the average price.

	product_id	name	description	category_id	price	stock_level
1	1	Laptop	High-performance laptop	1	999.99	15
2	8	Laptop	High-performance laptop	1	999.99	15
3	11	Mobil	Latest smartphone mod	11	499.99	10
4	12	Laptop	High-performance laptop	12	999.99	15

18. Select products with a stock level less than the minimum stock level.

product_id	name	description	category_id	price	stock_level

19. Select products with a category ID in a list (1, 3, 4).

	product_id	name	description	category_id	price	stock_level
1	1	Laptop	High-performance laptop	1	999.99	15
2	2	Board Game	Fun family board game	4	19.99	10
3	8	Laptop	High-performance laptop	1	999.99	15
4	9	Drill	Powerful cordless drill	3	49.99	5

20. Select products with a name ending with 'Suit'.

roduct_id name	lescription	category_id	price	stock_level
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21. Count the total number of products.

	(No column name)
1	28

22. Calculate the average price of products.

	(No column name)
1	148.204285

23. Find the maximum price among products.

	(No column name)
1	999.99

24. Find the minimum stock level among products.

	\
	(No column name)
1	5

25. Sum up the total stock levels of all products.

	(No column name)
1	295

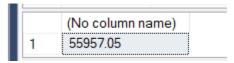
26. Calculate the average stock level of products.

	
	(No column name)
1	10

27. Count the number of products in each category.

		<u> </u>
	category_id	(No column name)
4	5	1
5	6	1
6	7	1
7	8	1
8	9	1
9	10	1
10	11	1
11	12	1

28. Calculate the total value of all products (price * stock_level).



29. Find the product with the highest price.

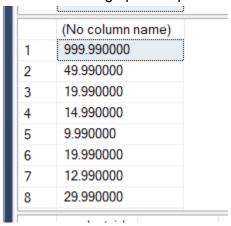
	product_id	name	description	category_id	price	stock_level
1	1	Laptop	High-performance laptop	1	999.99	15
2	8	Laptop	High-performance laptop	1	999.99	15
3	12	Laptop	High-performance laptop	12	999.99	15

(No column name)

30. Calculate the total number of characters in all product names.

	(No column name)
1	245

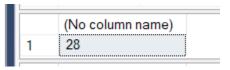
31. Find the average price of products in each category.



32. Find the product with the lowest stock level.

	product_id	name	description	category_id	price	stock_level
1	3	Moisturizer	Hydrating face moisturizer	5	14.99	5
2	9	Drill	Powerful cordless drill	3	49.99	5
3	14	Jeans	Classic denim jeans	14	24.99	5
4	15	Drill	Powerful cordless drill	15	49.99	5
5	17	Shampoo	Moisturizing shampoo	17	7.99	5
6	22	Soccer B	Professional soccer ball	22	14.99	5
7	28	Car Tire	Durable car tire	28	49.99	5

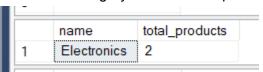
33. Calculate the total number of products in stock (stock_level > 0).



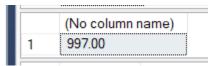
34. Calculate the total price of all products.

(No column name) 1 14999.85 2 199.90 3 74.95 4 199.80 5 129.90 6 449.85		·
2 199.90 3 74.95 4 199.80 5 129.90		(No column name)
3 74.95 4 199.80 5 129.90	1	14999.85
4 199.80 5 129.90	2	199.90
5 129.90	3	74.95
-	4	199.80
6 449.85	5	129.90
	6	449.85
7 999.90	7	999.90
8 14999.85	8	14999.85

35. Find the category with the most products.



36. Calculate the difference between the highest and lowest prices.



37. Find the product with the highest stock level.

	product_id	name	description	category_id	price	stock_level
1	4		Freshly roasted coffee beans	6	9.99	20
2	20	Coffee Beans	Freshly roasted coffee beans	20	9.99	20

38. Find the category with the highest average price.



39. Calculate the total number of products with prices greater than 5000.



40. Calculate the total value of products in each category (price * stock_level).

	category_id	(No column name)
1	1	29999.70
2	3	249.95
3	4	199.90
4	5	74.95
5	6	199.80
6	7	199.90
7	8	129.90
8	9	449.85

41. Calculate the total number of orders.

	(No column name)
1	28

42. Calculate the average order total

	(No column name)
1	923.752000

43. Find the customer who made the most orders.

	customer_id	first_name	last_name	total_orders
1	1	Zohaib	Ahmed	3
2	2	Zara	Jabbar	3
3	3	Bilal	Hashmi	3
4	4	Nida	Farooq	4
5	5	Daniyal	Khan	2
6	6	Samina	Malik	3
7	7	Umaima	Ali	2
8	8	Muham	Rizwan	2

44. Calculate the total number of reviews for each product.

	product_id	name	(No column name)
1	1	Laptop	1
2	2	Board Game	1
3	3	Moisturizer	1
4	4	Coffee Bea	1
5	5	Book	1
6	6	Dog Food	1
7	7	Car Battery	1
8	8	Laptop	1

45. Calculate the total revenue generated from each category.

	category_id	name	(No column name)
1	1	Electronics	7999.92
2	3	Home & Garden	199.96
3	4	Toys & Games	159.92
4	5	Beauty & Health	119.92
5	7	Sports & Outd	39.98
6	8	Books & Music	77.94
7	9	Pet Supplies	239.92
8	10	Auto Parts & A	399.96

46. Find the average price of products purchased by each customer.

	customer id	first name	last name	(No column name)
	customer_iu	_	_	
1	1	Zohaib	Ahmed	509.990000
2	2	Zara	Jabbar	999.990000
3	3	Bilal	Hashmi	14.990000
4	4	Nida	Farooq	99.990000
5	5	Daniyal	Khan	12.990000
6	6	Samina	Malik	29.990000
7	7	Umaima	Ali	999.990000
8	8	Muham	Rizwan	49.990000

47. Calculate the total value of products in each promotion.

	product_id	name	(No column name)
1	1	Laptop	849.9915
2	3	Moisturizer	11.9920
3	7	Car Batte	89.9910
4	10	Basketball	16.9915
5	13	T-Shirt	8.9910
6	19	Green Tea	3.7425
7	25	Dog Food	26.9910

48. Count the total number of carts for each customer.

	customer_id	first_name	last_name	(No column name)
1	1	Zohaib	Ahmed	2
2	2	Zara	Jabbar	2
3	3	Bilal	Hashmi	2
4	4	Nida	Farooq	2
5	5	Daniyal	Khan	2
6	6	Samina	Malik	2
7	7	Umaima	Ali	2
8	8	Muham	Rizwan	2

49. Calculate the total number of items in each order.

	order_id	(No column name)
1	1	12
2	2	2
3	3	6
4	4	4
5	5	2
6	6	8
7	7	2
8	8	4

50. Find the customer with the highest total spending.

	customer_id	first_name	last_name	(No column name)
1	1	Zohaib	Ahmed	4159.88

51. Calculate the total number of reviews written by each customer.

	customer_id	first_name	last_name	(No column name)
1	1	Zohaib	Ahmed	3
2	2	Zara	Jabbar	3
3	3	Bilal	Hashmi	2
4	4	Nida	Farooq	2
5	5	Daniyal	Khan	3
6	6	Samina	Malik	3
7	7	Umaima	Ali	3
8	8	Muham	Rizwan	3

52. Calculate the average order total for each customer.

	customer_id	first_name	last_name	(No column name)
1	1	Zohaib	Ahmed	1039.970000
2	2	Zara	Jabbar	999.990000
3	3	Bilal	Hashmi	44.970000
4	4	Nida	Farooq	199.980000
5	5	Daniyal	Khan	12.990000
6	6	Samina	Malik	119.960000
7	7	Umaima	Ali	999.990000
8	8	Muham	Rizwan	99.980000

53. Find the category with the highest average price of products.

	category_id	name	avg_price
1	1	Electronics	999.990000
2	12	Laptops	999.990000

54. Count the total number of orders placed in each month.

55. Calculate the total revenue generated by each customer.

	customer_id	first_name	last_name	(No column name)
3	3	Bilal	Hashmi	89.94
4	4	Nida	Farooq	399.96
5	5	Daniyal	Khan	25.98
6	6	Samina	Malik	239.92
7	7	Umaima	Ali	1999.98
8	8	Muham	Rizwan	199.96
9	9	Fatima	Baloch	39.98
10	10	Ali	Zafar	81.94

56. Calculate the total number of reviews for each product category.

	category_id	name	(No column name)
4	5	Beauty & Health	1
5	6	Grocery	1
6	7	Sports & Outd	1
7	8	Books & Music	1
8	9	Pet Supplies	1
9	10	Auto Parts & A	1
10	11	Mobile Phones	1
11	12	Laptops	1

57. Find the product with the highest average rating.

	man almak ial		
	product_id	name	avg_rating
1	7	Car Battery	10
2	21	Basketball	10
3	22	Soccer B	10
4	27	Car Battery	10
5	28	Car Tire	10

58. Calculate the total number of orders per year.

	year	(No column name)
1	2024	28

59. Find the customer who made the highest single order.

	customer_id	first_name	last_name	order_total
1	1	Zohaib	Ahmed	4159.88

60. Calculate the total value of products purchased by each customer.

	customer_id	first_name	last_name	(No column name)
1	1	Zohaib	Ahmed	4159.88
2	2	Zara	Jabbar	1999.98
3	3	Bilal	Hashmi	89.94
4	4	Nida	Farooq	399.96
5	5	Daniyal	Khan	25.98
6	6	Samina	Malik	239.92
7	7	Umaima	Ali	1999.98
8	8	Muham	Rizwan	199.96

61. Find the total number of products in each category.

	category_id	name	(No column name)
1	1	Electronics	2
2	3	Home & Garden	1
3	4	Toys & Games	1
4	5	Beauty & Health	1
5	6	Grocery	1
6	7	Sports & Outd	1
7	8	Books & Music	1
8	9	Pet Supplies	1

62. Find the average price of products in each category.

	category_id	name	(No column name)
1	1	Electronics	999.990000
2	3	Home & Garden	49.990000
3	4	Toys & Games	19.990000
4	5	Beauty & Health	14.990000
5	6	Grocery	9.990000
6	7	Sports & Outd	19.990000
7	8	Books & Music	12.990000
8	9	Pet Supplies	29.990000

63. Find the category with the highest total value of products (price * stock_level).

	category_id	name	total_value	
1	1	Electronics	29999.70	

64. Find the average stock level of products in categories with more than 10 products.

category_id name (No column name)

65. Find the total number of orders for each customer.

	customer_id	first_name	last_name	(No column name)
1	1	Zohaib	Ahmed	3
2	2	Zara	Jabbar	3
3	3	Bilal	Hashmi	3
4	4	Nida	Farooq	4
5	5	Daniyal	Khan	2
6	6	Samina	Malik	3
7	7	Umaima	Ali	2
8	8	Muham	Rizwan	2

66. Find the average order value (total price of order) for each customer.

	customer_id	first_name	last_name	order_value
1	1	Zohaib	Ahmed	1039.970000
2	2	Zara	Jabbar	999.990000
3	3	Bilal	Hashmi	44.970000
4	4	Nida	Farooq	199.980000
5	5	Daniyal	Khan	12.990000
6	6	Samina	Malik	119.960000
7	7	Umaima	Ali	999.990000
8	8	Muham	Rizwan	99.980000
	customer_id	first_name	last_name	order_value
1	1	Zohaib	Ahmed	4159.88

- 67. Find the total number of products in stock in each city where customers are located.
- 68. Find the customer(s) with the highest total order value.

	category_id	name	avg_price
1	1	Electronics	999.990000
2	12	Laptops	999.990000

69. Find the category with the highest average price.

	product_id	name	rating
1	7	Car Battery	10
2	21	Basketball	10
3	22	Soccer B	10
4	27	Car Battery	10
5	28	Car Tire	10

- 70. Find the product with the highest rating.
- 71. Find the total number of products purchased by each customer.

	customer_id	first_name	last_name	(No column name)
1	1	Zohaib	Ahmed	12
2	2	Zara	Jabbar	2
3	3	Bilal	Hashmi	6
4	4	Nida	Farooq	4
5	5	Daniyal	Khan	2
6	6	Samina	Malik	8
7	7	Umaima	Ali	2
8	8	Muham	Rizwan	4

72. Find the average rating of products in each category.

	category_id	name	(No column name)
1	1	Electronics	5
2	3	Home & Garden	8
3	4	Toys & Games	4
4	5	Beauty & Health	3
5	6	Grocery	5
6	7	Sports & Outd	7
7	8	Books & Music	1
8	9	Pet Supplies	8

73. Find the category with the highest total number of products.

	category_id	name	total_products
1	1	Electronics	2

74. Find the customer(s) who have placed orders with the highest total value.

	·	•		
	customer_id	first_name	last_name	order_value
1	1	Zohaib	Ahmed	4159.88

75. Find the product(s) with the highest total number of orders.

	product_id	name	numbers_of_orders
1	1	Laptop	4
2	3	Moisturizer	4
3	5	Book	4

76. Find the category with the highest total order value.

77. Find the customer(s) with the highest average order value.

	customer_id	first_name	last_name	order_value
1	1	Zohaib	Ahmed	1039.970000

78. Find the product(s) with the highest total order quantity.

	product_id	name	order_quantity
1	2	Board Game	8
2	3	Moisturizer	8
3	6	Dog Food	8

79. Find the customer(s) who have placed orders with the highest average quantity per order.

	customer_id	first_name	last_name	avg_quantity
1	6	Samina	Malik	4

80. Find the category with the highest average stock level.

	category_id	name	avg_stock
1	6	Grocery	20
2	20	Coffee	20