

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.

	product_id	name	description	category_id	price	stock_level

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.

	product_id	name	description	category_id	price	stock_level

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

	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

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

product_id	name	description	category_id	price	stock_level
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14. Select products with a description containing 'embroidered' and prices less than 3000.

product_id	name	description	category_id	price	stock_level
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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 whole 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
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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'.

	product_id	name	description	category_id	price	stock_level
	(No column name)					

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.

	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).

	(No column name)
1	55957.05

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.

	(No column name)
1	999.990000
2	49.990000
3	19.990000
4	14.990000
5	9.990000
6	19.990000
7	12.990000
8	29.990000

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).

	(No column name)
1	28

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
7	999.90
8	14999.85

35. Find the category with the most products.

	name	total_products
1	Electronics	2

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

	(No column name)
1	997.00

37. Find the product with the highest stock level.

	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

38. Find the category with the highest average price.

	name	avg_price
1	Electronics	999.990000
2	Laptops	999.990000

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

	(No column name)
1	0

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	Umaina	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)
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	Umaina	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	Umaina	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.

	month	(No column name)
1	3	28

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	Umaina	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.

	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	Umaina	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)
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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	Umaina	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	Umaina	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	Umaina	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.

	category_id	name	order_value
1	1	Electronics	7999.92

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