מסמך אלגברת היחסים

1.
σ title='aaaa' book

2.
π firstname ,min γ; min(date) → min , customer

3.
π title ,min γ; min(date) → min , book

4.
π orders.orderID, orders.orderdate, orders.shipped_date, orders.payment_total,
orders.payment_date, shippers.name as shipper_name, orders.OrderStatus
τ orders.orderdate orders
⋈ orders.shippers_shipper_id=shippers.shipper_id shippers

5.
π quantity γ ; SUM(bb.quantity)→ qiantity σ title = ? transaction t
⋈ aa.OrderID =t.orders orderID orders aa
⋈ bb.orders_orderID = aa.orderID order_books bb
⋈ b.book_id = bb.book_book_id book b

6.
π author.name ,author_has_book.author_author_id γ;
COUNT(author_has_book.author_author_id) > 1 → author_has_book ,
COUNT(author_has_book.author_author_id) , rownum()>0 AND rownum ≤ 1,
σ orders.orderdate >= ? or orders.orderdate <= ? book
⋈ book.book_ID = order_books.book_book_ID order_books
⋈ order_books.orders_orderID=orders.orderID orders
⋈ author_has_book.book_book_ID= book.book_ID author_has_book
⋈ author_has_book.author_author_id= author.author_id author
⋈ orders.orderID= transaction.orders_orderID transaction

7.
π customer.first_name , total_books γ transaction.customer_customer_id ;
sum(transaction.purchased_books) → total_books
σ rownum()> 0 AND rownum() ≤ 3
⋈ customer.customer_id = transaction.customer_customer_id transaction

8.
π book.title ,book_title_with_the_most_translators
σ book.quantity_in_stock>0, rownum()>0 AND rownum ≤ 1 book
⋈ book.book_ID=translator_has_book.book_book_ID translator_has_book
⋈ translator_has_book.translator_translator_id= translator.translator_id translator

9.
π customer.first_name, transaction.date, book.title,
order_books.unit_price,payment_method.name payment_method_name
σ customer.first_name = ? book
⋈ book.book_ID= order_books.book_book_ID order_books
⋈ order_books.orders_orderID= orders.orderID orders
⋈ orders.orderID = transaction.orders_orderID transactiontransaction
⋈ transaction.customer_customer_id=customer.customer_id customer
⋈ transaction.payment_method_payment_method_id =
payment_method.payment_method_id payment_method

10.
π book.title, order_books.unit_price, orders.orderdate, orders.OrderStatus ,
orderdate γ σ customer.first_name = ? and customer.last_name = ? book
⋈ book.book_ID=order_books.book_book_ID order_books
⋈ order_books.orders_orderID= orders.orderID orders
⋈ orders.orderID = transaction.orders_orderID transaction
⋈ transaction.customer_customer_id = customer.customer_id customer

11.
π orderID , (order_books.quantity* shipping_method.price* book.weight) , price
σ orders.orderID = ? orders
⋈ shippers.shipper_id= orders.shippers_shipper_id shippers
⋈ shipping_method.shipping_method_id= shippers.shipping_method_shipping_method_id
shipping_method
⋈ order_books.orders_orderID= orders.orderID order_books
⋈ book.book_ID= order_books.book_book_ID book

12.
π c.first_name, c.last_name, b.title, ob.quantity, tran.orders_orderID, o.orderdate
σ c.customer_id = ? book b
⋈ b.book_ID = ob.book_book_ID order_books ob
⋈ ob.orders_orderID = o.orderID orders o
⋈ o.orderID =tran.orders_orderID tran
⋈ tran.customer_customer_id = c.customer_id customer c

13.
π OrderStatus σ OrderID=1 orders

14.
π count_of_orders_shipped_by_xpress γ; COUNT(OrderID) →
count_of_orders_shipped_by_xpress
σ shippers_shipper_id= ? OR shippers_shipper_id= ? orders

15.
π total γ ; SUM(total_payment) → total
σ payment_method_payment_method_id= ? transaction

16.
π count(*) id, month γ ; extract(month FROM date) → month
π income γ; SUM(total_payment)→income π outcome γ; sum(sp.total_payment_store) → outcome
π Profit γ; sum(total_payment - sp.total_payment_store)→ Profit,
π avg_profit γ;avg(total_payment - sp.total_payment_store) → avg_profit
τ extract(month FROM date) → extract ,sum(total_payment - sp.total_payment_store)
σ date BETWEEN ????-??-?? AND ????-??-?? transaction ⋈ store_payment sp

17.
π expressPost γ ; sum(orders.shippers_shipper_id =3) → expressPost
+ expressPost γ ; + sum(orders.shippers_shipper_id=2) → expressPost
π IsraelPost γ ; sum(orders.shippers_shipper_id =1) → IsraelPost
+ IsraelPost γ; sum(orders.shippers_shipper_id=4) → IsraelPost
+IsraelPostγ; sum(orders.shippers_shipper_id=5) → IsraelPost
σ orders
⋈ shippers.shipper_id = orders.shippers_shipper_id
and orderdate >= ? shippers

18.
π b.book_ID, o.orderID, o.orderdate, o.OrderStatus, o.comments,o.shipped_date,
o.payment_date,
o.payment_total, p.name, p.publish_year,
book_Edition γ ; COUNT(b.book_id) → book_Edition ,book b
π b.book_ID γ ; COUNT(b.book_ID) > 1
⋈ b.book_ID= ob.book_book_ID order_books ob
⋈ ob.orders_orderID= o.orderID orders o
⋈ b.book_ID= pb.book_book_ID publisher_has_book pb
⋈ pb.publisher_publisher_id= p.publisher_id publisher p

19.
π customer.customer_id,customer.first_name,customer.landphone,customer.date,
customer.phonenumber,customer.address,customer.last_name σ transaction.date <= ?
customer
⋈ customer.customer_id = transaction.customer_customer_id transaction

20.
π customer.first_name
σ orders.orderdate<orders.shipped_date orders
⋈ orders.orderID = transaction.orders_orderID transaction
⋈ transaction.customer_customer_id = customer.customer_id customer

21.
π Month γ ; month(date) → month ,booksPerMonth γ; count(*) → booksPerMonth
τ month(date)
σ year(date) = ???? book

22.1.
π OrdersPrice γ; SUM(o.amount * b.bookprice) → OrdersPrice ,
NumberOfBooks γ; count(o.amount) → NumberOfBooks,
σ Order_Date <= ? AND Order_Date >= ? booksuplierorder o
⋈ o.book_id = b.book_id book b

22.2.
store_payment.month, (transaction.total_payment -
(booksuplierorder.total_payment
+store_payment.phone_number+
store_payment.land_line_number+
store_payment.shipment+
store_payment.tax+
store_payment.water_tax
+store_payment.electric_pwer_tax+
store_payment.service_charge+
store_payment.others-
store_payment.workers_salary))
σ store_payment.month = ? store_payment
⋈ store_payment.transaction_id = transaction.id transaction
⋈ store_payment.booksuplierorder_OrderID = booksuplierorder.OrderID booksuplierorder

23.
π AvgPerMonth γ; extract(month FROM date) month,
count(*) id,SUM(total_payment) income, sum(total_payment) / count(distinct id) →
AvgPerMonth
τ extract(month FROM date) σ date BETWEEN ????-??-?? AND ????-??-?? transaction

24.
π first_name, salary σ id= ? sales_man

25.
π sales_man.first_name σ date >= ? AND date <= ? ,
rownum() > 0 AND rownum() ≤ 1
⋈ transaction.sales_man_id= sales_man.id sales_man