1. σ(quantity>0)(book)
2. σ(orders)
3. σ(customer)
4. σ(supplier)
5. σ(purchase_date>='2018-07-04' ∧ purchase_date<='2018-07-24')(purchase)
6. σ(on_sale=1)(sales)
7. σ(title='Math' ∧ quantity>0)(book)
8. σ(supplier_id=67852)(privider_stock)
9. σsum(pd.quantity)(σ(p.purchase_id=pd.purchase ∧ pd.book_id=12 ∧ p.purchase_date>='2018-04-02'))(ρp(purchase),ρpd(purchase_details))
10. σsum(pd.quantity)(σ(p.purchase_id=pd.purchase ∧ p.customer_id=304 ∧ p.purchase_date>='2018-07-07'))(ρp(purchase),ρpd(purchase_details))
11. π(c.customer_id,c.purchase_date)(σ(c.purchase_date>='2017-07-25) γ SumQuan(LIMIT1))(p.purchase_date,p.customer_id,SumQuanσsum(pd.quantitiy))(ρp(purchase)⋈(pd.purchase=p.purchase_id),γp.customer_id(ρp(purchase)))
12. σ(c.provider_id,SumQuan σsum o.quantity)(ρo(orders)order_date>='2018-07-07' γc.provider_id,τSumQuan(LIMIT1))
13. σ(sumQuanσsum o.quantity)(o.order_date>='2018-07-07 ∧ o.order_date<='2018-07-25')[ρo(orders)]
14. σcount (is_arrived)(is_arrived=1 ∧ order_date>='2018-7-1' ∧ order_date<='2018-08-01')[orders]
15. π(t.customer,σsum(s.sale_price*t.quantity))(σ(s.book_id=t.book_id ∧ s.on_sale=1 γ t.customer_id[ρs(sales)⋈ ρt(π(p.customer_id,purchase_id,pd.book_id,pd.quantity)(σρpd(purchase_details) ⋈ pd.purchase=p.purchase_id)[ρp(purchase)])]))
16. πρQ(QUARTER(p.purchase_date),σsum(j.sum_purchase))(σp.purchase_id=j.purchase_id γ Q(ρp(purchase)⋈ρj(πpd.purchase_id,ρsum_purchase(σsum(pd.quantity*b_price))(σpd.book_id=b.book_id γ pd.purchase_id[ρpd(purchase_details),ρb(book)])))
17. π(first_name,lase_name)(σ join_date>='2018-07-20')[customer]
18. πo.provider,ρtotal(σsum(t.sumAll))(σt.order_date>='2018-01-10' ∧ t.order_date<='2018-09-09' γ o.provider_id[ρo(orders)⋈ρt(πo.provider,o.book_id,o.quantity,o.order_date,ps.provider_price,ρsumAll(o.quantity*ps.provider_price))(σps.provider_id=o.provider_id[ρ
19. π salesman_id,p.purchase_date,ρtotal(σsum(t.sumAll))(σp.purchase_date>='2018-01-10' ∧ p.purchase_date<='2018-09-09' γ p.salesman_id[ρp(purchase)⋈ρt(πpd.quantity,pd.book,pd.purchase_id,ρsumAll(pd.quantity*b.price),b.price)(σpb(book)⋈b.book_id=pd.book_id[ρpd(purchase_details)]])
20. π pd.book_id,pd.quantity, SumQuanσsum(pd.quantity)[σ γpd.book_id,τSUMqUSN(LIMIT1)(ρpd(purchase_details))]