

1. $\pi_{ID, name, modelNumber, price}(\sigma_{price > 950 \wedge price < 1000}(Product))$
2. $\pi_{ID, firstName, lastName}(\sigma_{postalCode LIKE 'N\%' \wedge YEAR(dateOfBirth) > 1990}(Attendee \bowtie Person))$
3. $\gamma_{COUNT(product.ID) \rightarrow numExtendedWarrantyProds}(\sigma_{type='Extended'}(Product \bowtie_{Product.ID=With.productID} With \bowtie_{With.warrantyID=Warranty.ID} Warranty))$
4. $\gamma_{date, SUM(amount) \rightarrow totalSales}(\sigma_{paymentMethod='credit' \vee paymentMethod='debit'}(Transaction))$
5. $\delta(\pi_{Vendor.name}(\sigma_{productSubCategory.name='LED'}(Vendor \bowtie_{Vendor.ID=Sell.vendorID} Sell \bowtie_{Sell.productID=Product.ID} Product \bowtie_{Product.ID=ProductBelongToSubcategory.productID} ProductBelongToSubcategory \bowtie_{ProductBelongToSubcategory.productSubCategoryID=ProductSubCategory.ID} ProductSubCategory)))$
- 6a. $\gamma_{name, COUNT(*)}(Vendor \bowtie_{Vendor.ID=Sell.vendorID} Sell)$
- 6b. $\pi_{name, numProducts}(\sigma_{numProducts > 35}(\gamma_{name, COUNT(*) \rightarrow numProducts}(Vendor \bowtie_{Vendor.ID=Sell.vendorID} Sell)))$
- 7a. $\tau_{date, numProducts}(\pi_{Vendor.ID, name, numProducts, date}(\sigma_{numProducts > 10}(\gamma_{Vendor.ID, name, SUM(quantity) \rightarrow numProducts, date}(Vendor \bowtie_{Vendor.ID=Transaction.vendorID} Transaction))))$
- 7b. $\tau_{date, totalSales}(\pi_{Vendor.ID, name, totalSales, date}(\sigma_{totalSales > 5000}(\gamma_{Vendor.ID, name, SUM(amount) \rightarrow totalSales, date}(Vendor \bowtie_{Vendor.ID=Transaction.vendorID} Transaction))))$
8. $\pi_{Person.lastName, Person.firstName, Person.dateOfBirth, d.lastName, d.firstName, d.dateOfBirth}(\sigma_{Person.ID < d.ID \wedge Person.dateOfBirth = d.dateOfBirth}(Person \times \rho_d(Person)))$
9. $\pi_{firstName, lastName, areaOfExpertise}(\sigma_{areaOfExpertise='Smartphones' \vee areaOfExpertise='WearableTechnology'}(Person \bowtie Attendee \bowtie_{Attendee.ID=ListenTo.attendeeID} ListenTo \bowtie_{ListenTo.keynoteSpeakerID=KeynoteSpeaker.ID} KeynoteSpeaker))$
- 10a. $\pi_{Product.ID, modelNumber, Name}(Product \bowtie_{Product.ID=bt.productID} \rho_{bt}((\pi_{attendeeID, productID} ProductTrial) \cap (\pi_{attendeeID, productID} Transaction)))$
- 10b. $\pi_{Person.ID, firstName, lastName}(Person \bowtie_{Person.ID=bt.attendeeID} \rho_{bt}((\pi_{attendeeID, productID}(\sigma_{minutesTried \geq 10} ProductTrial)) - (\pi_{attendeeID, productID} Transaction))))$
11. $\pi_{Person.ID, firstName, lastName}(Person \bowtie_{Person.ID=bt.attendeeID} \rho_{bt}(\pi_{t1.attendeeID}(\sigma_{t1.date='04/02/2014' \wedge t2.date='04/03/2014' \wedge t3.date='04/04/2014'}(\rho_{t1}(Transaction) \bowtie_{t1.attendeeID=t2.attendeeID} \rho_{t2}(Transaction) \bowtie_{t2.attendeeID=t3.attendeeID} \rho_{t3}(Transaction))))))$
12. $\gamma_{MAX(totalSales)}(\gamma_{ProductSubCategory.name, SUM(amount) \rightarrow totalSales}(ProductSubCategory \bowtie_{ProductSubCategory.ID=ProductBelongToSubcategory.productSubCategoryID} ProductBelongToSubcategory \bowtie_{ProductBelongToSubcategory.productID=Product.ID} Product \bowtie_{Product.ID=Transaction.productID} Transaction))$