**Câu a**. Information package

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Customer | Product | Geographic | Promotion | Currency | Time |
| firstName  middleName  lastName  birthDate  maritalStatus(single/married)  title  gender(male/female)  email  yearIncome  totalChildren  numberChildrenAtHome  education  occupation  homeOwnerFlag(Yes/no)  numberCarsOwned  commuteDistance  state  city  zip  addressLine1  addressLine2  phone | color  standardCost  listPrice\_Range  size  sizeUnitMeasureName  weight\_Range  weightUnitMeasureName  productLine  class  style  category  subcategory  modelName | region  countryName  group | type  discountPercentage  minQty  ->minQuantity  maxQty  ->maxQuantity  startDate  endDate | currencyName | year  month  day  date |
| Measures: orderCurrency, costCurrency, VAT, freight, margin, delayDate, limitQuantityDiscount, limitDateDiscount | | | | | |

**Câu b**.

Customer

- hierarchies: state-city-addressLine1, state-city-addressLine2

- categories: firstName, middleName, lastName, birthDate, maritalStatus, title, gender, email, yearIncome,totalChildren, numberChildrenatHome, education, occupation, homeOwnerFlag, numberCarsOwned, commuteDistanse, phone

Product

- hierarchies: category-subcategory

- categories: color, standardCost, listPrice, size, sizeUnitMeasure, weight, weightUnitMeasure, productLine, class, style, model

Geographic

- hierarchies: region-country

- categories:

Promotion:

- hierarchies:

- categories: discount,type, minQty, maxQty, startDate, endDate

Currency:

- hierarchies:

- categories: currencyName

Time

- hierarchies: year – month- date

- categories:

**Câu c**.

Level of Detail: orderCurrency, costCurrency, VAT, freight and margin in currencyName and delayDate, limitQuantityDiscount, limitDateDiscount of each production group had ordered by each individual customer in each date, in each country

**Câu d+e**,

Fact PK ={productID, customerID, geopraphicID, curencyID, promotionID, orderDate, dueDate, shipDate}

(Currency dùng currencyID\_OP là PK luôn vì currency ko cần thay đổi nên ko cần ID identity)

