Assumptions:

* Database is setup and stringed and type can be fetched from it based on the barcode which is scanned by the main function.
* Only one specific offer per product.

Decisions:

* Product class is a class which will be used for creating all the objects of type product.
* There will be an Id and a price associated with every product.
* There will also be 3 strings called Name, Group and Type which will determine what sort of product the particular object is and what category it falls under.
* There is also an integer called quantity associated with every product, which will be the amount of inventory at the time the product object is being created.
* Product offer is more specific than a generic offer, therefore, it takes precedence. A flag will determine if an item has already been part of an applied offer. One item can only be included in one offer.
* Cart is an aggregation because it is a one-way relationship, and it will need to access the data from the Product class to calculate the net amount. This will be done by making the cart an aggregation of the product class.
* The group offers and product offers will be calculated in the cart, which will happen by accessing the methods in the GroupOffer and SingleOffer classes.
* The pricing will be implemented in the cart using an interface which will calculate three different types of pricing: RegularPricing, VolumePricing and CompositePricing.
* RegularPricing is for regular prices of products, VolumePricing is for weight or volume based pricing and CompositePricing is for products bought in bulk.
* All the pricing and offer application will be done in the cart once all the products are scanned.
* The Customer class is an aggregation of the Cart class and it will fetch this data from the cart. If the customer is a regular customer and he has accumulated some points which he can use to avail offers, or if he uses a certain mode of payment a discount is applicable, all this calculation will be done in the Customer class. One assumption here is that the customer discount is applicable AFTER the entire group and single discounts are applied.
* This class will output the final bill amount to be paid by the customer at the end.