Homework 5

ECE 309 Fall 2019
Due: October 2, 2019
Free extension until October 4, 2019

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1. Public Inheritance

[20 points] You're implementing a new software application to help manage a grocery store's inventory. There are lots of different kinds of items in a grocery store. The following table shows 5 kinds of instantiated objects in a grocery store that must be supported and the interfaces that are desired. Design a class hierarchy using public inheritance that allows these objects to be created and share as much code between them as possible. Provide the necessary data (strings, integers, double) as well in protected or private data members that are initialized using constructors. Also, an object should never be given a member function, even through inheritance, unless explicitly allowed to have it in the table below.

You should not name the class as "Avocado" or "Cereal". These are merely examples of the kinds of objects. Instead, you should think about it more like "PreparedFood" or "Produce" in which these kinds of objects would fit.

Also, if you do not use public inheritance, your answer will earn 0 points.

Avocado	Cereal	Jam	Rotisserie Chicken	Banana
string getName(): return name of the item as a string, in this case it would return "Avocado".	getName(): return name of the item as a string, in this case it would return "Cereal"	getName(): return name of the item as a string	getName(): return name of the item as a string	getName(): return name of the item as a string

string getBarcode();	string getBarcode();	string getBarcode();	string getBarcode();	string getBarcode();
double costPerItem();	double costPerItem();	double costPerItem();	double costPerItem();	double costPerPound();
int getLocId() (return an ID for where its located)	int getLocId(); (return an ID for where its located)	int getLocId(); (return an ID for where its located)	string getDepartment()	int getLocId(); (return an ID for where its located)
string getDepartment() ; Return which part of the store manages this item.	string getDepartment()	string getDepartment()	string getDatePrepare d()	string getDepartment()
string getSupplier(); Return the name of the company that supplies this produce.	int getExpirationYe ar();	int getExpirationYe ar()	int getLocId(); (return an ID for where its located)	
	string getBrand(); Return the name of the brand that makes this item.	string getBrand()		string getSupplier()

```
class item {
	private:
	string Name;
	string Barcode;

	protected:
	int LocId;
	string depart;

	public:
	string getName(){ return name;}
	string getBarcode(){ return barcode;}
	int getLocId(){ return LocId;}
	string getDepartment(){ return depart;}

	item( string named, string barcodes, int id, string department){
		name = named;
		barcode = barcodes;
		LocId = id;
		depart = department;
	}
};


class byitem {
	public:
	double costperItem;

	byitem (double cost) {costperItem = cost;}
	double costPerItem(){
		return costperItem;
	}

class Processedfoods : public byitem, public item{

	protected:
	int expYear;
	string brand;

	public:
	int getExpirationYear(){
		return expYear;
	}
	string getBrand(){
		return brand;
	}

	Processedfoods(int year, string brandname, string named, string barcodes, int id, string
	department, double cost) : item( string named, string barcodes, int id, string department),
```

```
        byitem (double cost) {

                expYear = year;
                brand = brandname;
        }
};

class Produce: public item{
        private:
        string supplier;

        public:
        string getSupplier(){
                return supplier;
        }
Produce(string setsupplier,string named, string barcodes, int id, string department) : item( string
named, string barcodes, int id, string department){
        supplier = setsupplier;
        }
};

class Producepound: public Produce{
        protected:
        double pound;

        public:
        double costPerPound(): {
        return pound;
        }

Producepound( double poundprice, string setsupplier, string named, string barcodes, int id,
string department): produce(string setsupplier, string n, string bar, int id, string dep){
        pound = poundprice;
        }
};

class Produceitem: public Produce, public byitem {

Produceitem(string setsupplier, string name, string barcodes, int id, string dep, double cost):
produce(string setsupplier, string name, string bar, int id, string dep),byItem(double cost) {
};

class Preparedfoods: public item, public byitem{
        protected:
        string Date;
        public:
        string getDatePrepared(){
                return Date;
        }
Preparedfoods(string datepreped, string named, string barcodes, int id, string department,
double cost) : item( string named, string barcodes, int id, string department),  byitem(double
```

```
cost){
        }
};

int main(){
        Produceitem Avacado(local_supply, Avacado, abc123, 27, Produce, 2.0);
        Processedfoods Cereal (2019, Kellog, Cereal, abc124, 20, Package, 3.5);
        Processedfoods Jam (2019, Supermarket, Jam, abc125, 15, Canned, 2.0);
        Preparedfoods Rotiserie_Chicken (Nov11, Chicken, abc126, 17, Prepared, 7);
        Producepound Banana (.5, Sunkist, Banana, abc127, 27, Produce);
}
```