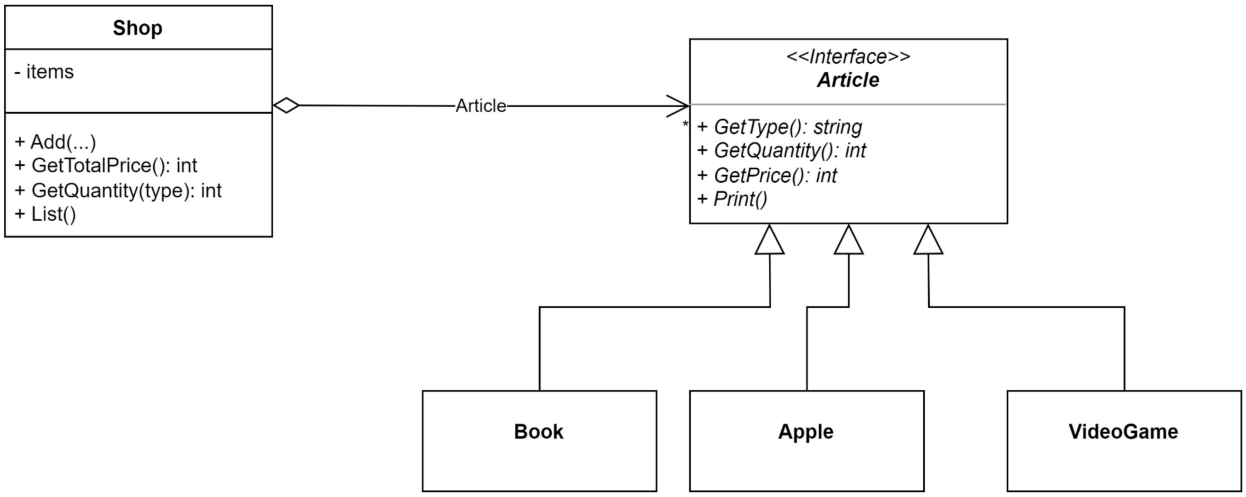
Lab exam (part 2) - P2

Consider the following UML diagram / Fie urmatoarea diagrama UML:



Build all the files with the classes described in the above diagram so that the following code / Construiți fișierele header si cpp corespunzătoare diagramei de mai sus astfel incat codul de mai jos:

```
#include <iostream>
#include "Shop.h"
#include "Book.h"
#include "Apple.h"
#include "VideoGame.h"

int main()
{
    Shop s;
    s.Add(new Book(100, 3, "Dune", "Frank Herbert")).Add(new Apple(20, 100, "Romania"));
    s.Add(new VideoGame(10, 2, "Nintendo", "Super Mario"));
    s.Add(new Apple(12, 15, "Germany"));
    std::cout << "Total price   : " << s.GetTotalPrice() << std::endl;
    std::cout << "Apple quantity: " << s.GetQuantity("Apple") << std::endl;
    std::cout << "Items" << std::endl;
    s.List();
    return 0;
}
```

will display upon execution/sa ruleze si sa afiseze:

```
Total price   : 2500
Apple quantity: 115
Items
Book (Title=Dune, Author=Frank Herbert) Price=100 Quantity=3
Apple (from=Romania) Price=20 Quantity=100
VideoGame (Platform=Nintendo, Name=Super Mario) Price=10 Quantity=2
Apple (from=Germany) Price=12 Quantity=15
```

Observations/Observatii:

- You have to deduce the constructors for the classes Book, Apple and VideoGame from the code / Constructorii claselor Book, Apple si VideoGame trebuie dedusi analizand codul din functia main.
- You have to deduce the parameters for method Add from the code / Trebuie sa deduceti parametrii metodei Add din cod.

Grading:

G1	Organize your project in 10 files: **main.cpp**, **Article.h**, **Shop.h**, **Shop.cpp**, **Books.h**, **Book.cpp**, **Apple.h**, **Apple.cpp**, **VideoGame.h**, and **VideoGame.cpp**	1p
G2	Organize the file **Shop.h** to correctly implement the UML diagram (one data member and 4 methods).	3p
G3	Implementation of the method **Shop**::Add	2p
G4	Implementation of the method **Shop**::List	2p
G6	Correctly implement all the virtual methods in classes Book, Apple, and VideoGame. (3p for each class - 1p/virtual method)	9p
G6	Implementation of the method **Shop**::GetQuantity	3p
G7	Implementation of the method **Shop**::GetTotalPrice	4p
G8	Implementation of the constructors for Book, Apple, and VideoGame(1p for each class)	3p
G9	The program compiles and upon execution produces the expected results	3p