

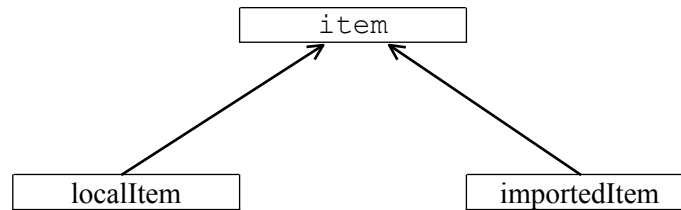
Ege Üniversitesi Elektrik-Elektronik Mühendisliği

Object-Oriented Programming Quiz 4

Aşağıda uml kalıtım diyagramı ve uml sınıf diyagramları verilen sınıfları ve sınıflara ait metodları tanımlayın. Aşağıda verilen sürücü programı, aşağıda verilen konsol çıktısını üretecek şekilde tamamlayın.

Define classes and methods given in uml class diagrams and uml inheritance diagram below. Complete driver program below to produce consol output given below.

UML Kalıtım Diyagramı / UML Inheritance Diagram:



UML Sınıf Diyagramı / UML Class Diagram:

| item |
|---|
| - description: string - price: double |
| + <<constructor>> item(d: string, p: double) + getDescription(): string + getPrice(): double + <<virtual>> tax(): double = 0 |

| localItem |
|--|
| - <<static>> taxRate: double |
| + <<constructor>> localItem(d: string, p: double) + <<static>> getTaxRate(): double + <<static>> setTaxRate(r: double) + tax(): double // urunden alınacak vergi miktarini urun ucreti ve yerel urun vergi orani carpimi // olarak hesaplar. // computes tax that will be charged from local item by multiplying item price and // local item tax rate. |

| importedItem |
|---|
| - <<static>> taxRate: double |
| + <<constructor>> importedItem(d: string, p: double) + <<static>> getTaxRate(): double + <<static>> setTaxRate(r: double) + tax(): double // urunden alınacak vergi miktarini urun ucreti ve ithal urun vergi orani carpimi // olarak hesaplar. // computes tax that will be charged from imported item by multiplying item price and // imported item tax rate. |

Sürücü Program / Driver Program:

```
#include "item.h"
#include "localItem.h"
#include "importedItem.h"
#include <iomanip>
using std::left;
using std::setw;
#include <iostream>
using std::cout;
using std::endl;

int main(void)
{
    // declare a local item object with description "kalem" and price 1.5
    // declare a local item object with description "defter" and price 5.0
    // declare an imported item object with description "bilgisayar" and price 5000.0
    // declare an imported item object with description "telefon" and price 2500.0

    // set local item tax rate to 0.01
    // set imported item tax rate to 0.05

    // put all declared local and imported item objects in an array
    double totalTax;

    cout << "local item tax    : " << /* value of local item tax rate */ << endl
         << "imported item tax: " << /* value of imported item tax rate */ << endl
         << endl
         << setw(40) << left << "Description" << setw(20) << left << "Price" << setw(20) << left << "Taxed Price" << endl;
    totalTax = /**/;
    for(int i=0; i<4; i++)
    {
        cout << setw(40) << left << /* value of item description*/
             << setw(20) << left << /* value of item price */
             << setw(20) << left << /* value of taxed item price*/ << endl;
        totalTax += /* value of item tax */;
    }
    cout << "Total Tax: " << totalTax << endl;

    return 0;
}
```

Konsol Çıktısı / Console Output:

```
local item tax    : 0.01
imported item tax: 0.05
```

| Description | Price | Taxed Price |
|-------------|---------|-------------|
| kalem | 1.5 | 1.515 |
| defter | 5 | 5.05 |
| bilgisayar | 5000 | 5250 |
| telefon | 2500 | 2625 |
| Total Tax: | 375.065 | |