**ООП**

**Лабораторна 3**

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#include <iostream>

#include <string>

using namespace std;

class Money {

public:

int grivnas;

int kopiykas;

Money(int grivnas = 0, int kopiykas = 0) : grivnas(grivnas), kopiykas(kopiykas) {}

void add(const Money& other) {

grivnas += other.grivnas;

kopiykas += other.kopiykas;

normalize();

}

void subtract(const Money& other) {

grivnas -= other.grivnas;

kopiykas -= other.kopiykas;

normalize();

}

void divide(double value) {

int totalKopiykas = grivnas \* 100 + kopiykas;

int resultKopiykas = static\_cast<int>(totalKopiykas / value);

grivnas = resultKopiykas / 100;

kopiykas = resultKopiykas % 100;

}

void multiply(double value) {

int totalKopiykas = grivnas \* 100 + kopiykas;

int resultKopiykas = static\_cast<int>(totalKopiykas \* value);

grivnas = resultKopiykas / 100;

kopiykas = resultKopiykas % 100;

}

bool operator==(const Money& other) const {

return grivnas == other.grivnas && kopiykas == other.kopiykas;

}

bool operator<(const Money& other) const {

if (grivnas == other.grivnas) {

return kopiykas < other.kopiykas;

}

return grivnas < other.grivnas;

}

void normalize() {

int totalKopiykas = grivnas \* 100 + kopiykas;

grivnas = totalKopiykas / 100;

kopiykas = totalKopiykas % 100;

}

};

class Goods {

private:

Money price;

int quantity;

int invoiceNumber;

public:

string name;

string date;

Goods(const string& name, const string& date, int priceGrivnas, int priceKopiykas, int quantity, int invoiceNumber)

: name(name), date(date), price(priceGrivnas, priceKopiykas), quantity(quantity), invoiceNumber(invoiceNumber) {}

void changePrice(int newPriceGrivnas, int newPriceKopiykas) {

price = Money(newPriceGrivnas, newPriceKopiykas);

}

void changeQuantity(int newQuantity) {

quantity = newQuantity;

}

Money calculateTotalCost() const {

Money totalCost = price;

totalCost.multiply(quantity);

return totalCost;

}

};

int main() {

Goods item("Product 1", "2023-10-27", 10, 50, 3, 123);

item.changePrice(5, 25);

item.changeQuantity(5);

Money totalCost = item.calculateTotalCost();

std::cout << "Total cost of " << item.name << " is: " << totalCost.grivnas << " grivnas " << totalCost.kopiykas << " kopiykas" << std::endl;

return 0;

}