

Pr13-14.cpp

```
// This program demonstrates an array of class object.
#include <iostream>
#include <iomanip>
#include "InventoryItem.h"
using namespace std;

int main()
{
    const int NUM_ITEMS = 5;
    InventoryItem inventory[NUM_ITEMS] = {
        InventoryItem("Hammer", 6.95, 12),
        InventoryItem("Wrench", 8.75, 20),
        InventoryItem("Pliers", 3.75, 10),
        InventoryItem("Ratchet", 7.95, 14),
        InventoryItem("Screwdriver", 2.50, 22)};

    cout << setw(14) << "Inventory Item"
         << setw(8) << "Cost" << setw(8)
         << setw(16) << "Units on Hand\n";
    cout << "-----\n";

    for (int i = 0; i < NUM_ITEMS; i++)
    {
        cout << setw(14) << inventory[i].getDescription();
        cout << setw(8) << inventory[i].getCost();
        cout << setw(7) << inventory[i].getUnits() << endl;
    }

    int inventoryCount;
    for (int i = 0; i < NUM_ITEMS; i++)
    {
        inventoryCount += inventory[i].getUnits();
    }
}
```

```

    }

    cout << "The total inventory count is: " << inventoryCount
<< " units." << endl;

    double inventoryPrice;
    for (int i = 0; i < NUM_ITEMS; i++)
    {
        inventoryPrice += (inventory[i].getUnits() *
inventory[i].getCost());
    }

    cout << setprecision(5) << "The total inventory price is: $"
<< inventoryPrice << endl;

    double avgPrice = inventoryPrice / inventoryCount;

    cout << setprecision(3) << "The average inventory item price
is: $" << avgPrice << endl;

    return 0;
}

```

InventoryItem.h

```

// This class has overloaded constructors.
#ifndef INVENTORYITEM_H
#define INVENTORYITEM_H
#include <string>
using namespace std;

class InventoryItem
{

```

```
private:
    string description; // The item description
    double cost;        // The item cost
    int units;          // Number of units on hand
public:
    // Constructor #1 (default constructor)
    InventoryItem()
    { // Initialize description, cost, and units.
        description = "";
        cost = 0.0;
        units = 0;
    }

    // Constructor #2
    InventoryItem(string desc)
    { // Assign the value to description.
        description = desc;

        // Initialize cost and units.
        cost = 0.0;
        units = 0;
    }

    // Constructor #3
    InventoryItem(string desc, double c, int u)
    { // Assign values to description, cost, and units.
        description = desc;
        cost = c;
        units = u;
    }

    // Mutator functions
    void setDescription(string);
```

```
void setCost(double);

void setUnits(int);

// Accessor functions
string getDescription() const;

double getCost() const;

int getUnits() const;

int getCount(InventoryItem[], int) const;
};
#endif
```

InventoryItem.cpp

```
#include "InventoryItem.h"

void InventoryItem::setDescription(string d)
{
    description = d;
}

void InventoryItem::setCost(double c)
{
    cost = c;
}

void InventoryItem::setUnits(int u)
{
    units = u;
}
```

```

string InventoryItem::getDescription() const
{
    return description;
}

double InventoryItem::getCost() const
{
    return cost;
}

int InventoryItem::getUnits() const
{
    return units;
}

```

Output:

```

Inventory Item      Cost  Units on Hand
-----
      Hammer      6.95      12
      Wrench      8.75      20
      Pliers      3.75      10
      Ratchet      7.95      14
    Screwdriver      2.5       22
The total inventory count is: 76 units.
The total inventory price is: $462.2
The average inventory item price is: $6.08

```