```cpp
/*****************************************************************************
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 * CLASS      : CS1C
 * SECTION    : MW 5pm
 * Assign #1  : Deck of cards
 * DUE DATE   : 22 January 2020
 *****************************************************************************/

#include"Header.h"

/*****************************************************************************
* Assignment 3
* ---------------------------------------------------------------------------
* This program will get name, price, and quantity of some sport equipments and
* using the pointer variable, it stores them and send them to a display function
* for output on the screen, then using the struct variables, we calculate that if
* a user buys something from store, how many of that item is going to be
* available after that and also it calculates that how much the cost is going to
* be, before and after tax.
* ---------------------------------------------------------------------------
* INPUT  : Nothing
* ---------------------------------------------------------------------------
* PROCESS: the program calculates Mark's purchas bill for four pairs of Nike
*          basketball shoes, five Under Armour T-shirts, six Under Armour shorts
*          , and one pair of Asics running shoes, including the total cost
*          before and after tax. Assume the tax rate is 7.75%
* ---------------------------------------------------------------------------
* OUTPUT : The progeam will output a recipt of the items that mark purchased,
*          and outputs the total price of what mark has purchased before and
*          after tax. It also outputs the store inventory before and after
*          mark's purchase
*****************************************************************************/
int main()
{
    /***************
     *  VARIABLES  *
     ***************/

    inventory *inv = new inventory[SIZE];   //PROCESS - for storing the features
    double total;                           //PROCESS & OUT - calculating the total
  price
    double tax;                             //PROCESS & OUT - calculating the tax

    /*********************
     *  INITIALIZATION  *
     *********************/

    inv[0].eqpName  = "Nike basketball shoes";
    inv[0].price    = 179.99;
    inv[0].quantity = 25;

    inv[1].eqpName  = "Under Armor T-shirt";
    inv[1].price    = 29.99;
    inv[1].quantity = 88;

    inv[2].eqpName  = "Brooks running shoes";
    inv[2].price    = 121.44;
    inv[2].quantity = 13;
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59
60      inv[3].eqpName  = "Asics running shoes";
61      inv[3].price    = 165.88;
62      inv[3].quantity = 12;
63
64      inv[4].eqpName  = "Under Armor shorts";
65      inv[4].price    = 45.77;
66      inv[4].quantity = 35;
67
68      cout<<"*** Purchase bill *** "                        <<endl;
69      cout<<"Item No. Name of equipment\tCost\tQuantity"  <<endl;
70      cout<<"1. Nike basketball shoes\t$179.99\t\t4 "     <<endl;
71      cout<<"2. Under Armour T-shirt\t\t$29.99\t\t5 "     <<endl;
72      cout<<"3. Under Armour shorts\t\t$45.77\t\t6 "      <<endl;
73      cout<<"4. Asics running shoes\t\t$165.88\t\t1 "     <<endl;
74
75      //calculating total purchase price
76      total = 4 * 179.99 + 5 * 29.99 + 6 * 45.77 + 165.88;
77      cout<<" Total Cost: $"<< total << endl;
78
79      //calculating the tax
80      tax = total * 7.75/100;
81
82      cout << "Tax(7.75%) $" << tax << endl;
83
84      cout <<"Total cost $" << (total + tax) << endl << endl;
85
86      //inventory before the purchase
87      cout << "Inventory before marks purchase:" << endl;
88      display(inv);
89
90      //making some changes in the inventory
91      inv[0].quantity-=4;
92      inv[1].quantity-=5;
93      inv[4].quantity-=6;
94      inv[3].quantity-=1;
95
96      //inventory after the purchase
97      cout << "\n\nInventory after marks purchase:" << endl;
98      display(inv);
99
100     //deleting the pointer variable to prevent memory leak
101     delete []inv;
102
103     return 0;
104
105
106 }
107
```