```
 1 ******************************************
 2 * PROGRAMMED BY : Saul Moreno
 3 * STUDENT ID    : 269491
 4 * CLASS         : CS 1C MW-5:00pm
 5 * ASSIGNMENT #3 : Pointer
 6 ******************************************
 7
 8 This program will show the items available for purchase
 9 and how many are in stock. Then after the user has
10 selected how many they want the program will add up
11 their total before and after tax
12
13 Name of Equipment     Cost   Quantity
14 Nike basketball shoes 179.99  25
15 Under Armour T-shirt  29.99   88
16 Brooks running shoes  121.44  13
17 Asics running shoes   165.88  12
18 Under Armour shorts   45.77   35
19
20 Enter how many Nike basketball shoes do you want? 4
21 Enter how many Under Armour T-shirts do you want? 5
22 Enter how many Brooks shoes do you want?          0
23 Enter how many Asics running shoes do you want?   1
24 Enter how many Under Armour shorts do you want?   6
25
26 Nike shoes left in inventory:   21
27 T-Shirts left in inventory:     83
28 Brooks shoes left in inventory: 13
29 Asics shoes left in inventory:  11
30 Shorts left in inventory:       29
31
32 Receipt
33 Nike Shoes            x4 = 719.96
34 Under Armour T-shirts x5 = 149.95
35 Brooks shoes          x0 = 0.00
36 Asics shoes           x1 = 165.88
37 Under Armour shorts   x6 = 274.62
38
39 Amount before tax:    876.91
40 Tax:                  67.96
41 Amount after tax:     944.87
```

```
1 /*****************************************************************************
2  * AUTHOR       : Saul Moreno
3  * STUDENT ID   : 269491
4  * ASSIGNMENT # : 3
5  * CLASS        : CS1C
6  * SECTION      : MW 5:00pm
7  * DUE DATE     : 2/12/19
8  *****************************************************************************/
9
10 #ifndef HEADER_H_
11 #define HEADER_H_
12
13 #include <iostream>  // input and output
14 #include <iomanip>   // setprecision and setw
15 #include <string>    // allows to use strings
16 #include <limits>    //
17 #include <ios>       //
18 #include <fstream>   // file in & out
19 #include <time.h>    // system time
20 #include <stdlib.h>  // srand and rand
21
22 void PrintHeader(std::string asName, int asNum, char asType);
23
24 #endif /* HEADER_H_ */
25
```

```cpp
/*****************************************************************************
 * AUTHOR       : Saul Moreno
 * STUDENT ID   : 269491
 * ASSIGNMENT # : 3
 * CLASS        : CS1C
 * SECTION      : MW 5:00pm
 * DUE DATE     : 2/12/19
 *****************************************************************************/

#include"header.h"

/*****************************************************************************
*FUNCTION - PrintHeader
*_____________________________________________________________________________
*This function receives an assignment name, type and number then outputs the
* appropriate header - returns nothing.
*_____________________________________________________________________________
*PRE-CONDITIONS
*     asName:  Has to be previously defined
*     asType:    Has to be previously defined
*     asNum: Has to be previously defined
*
*POST-CONDITIONS
*      This function will output class heading.
*      <Post-conditions are the changed outputs either passed by value or
*      by reference OR anything affected by the function.
*
*****************************************************************************/

void PrintHeader(std::string asName,  // IN - Assignment Name
                     int asNum,  // IN - assignment type
                                 // (LAB or ASSIGNMENT)
                     char asType)// IN - assignment number
{
 std::cout << std::left;
 std::cout << "*********************************************\n";
 std::cout << "* PROGRAMMED BY : Saul Moreno\n";
 std::cout << "* "<< std::setw (14) << "STUDENT ID" << ": 269491\n";
 std::cout << "* "<< std::setw (14) << "CLASS" << ": CS 1C MW-5:00pm\n";
 std::cout << "* ";
 if (toupper (asType) == 'L')
 {
     std::cout << "LAB #"<< std::setw(9);
 }
 else
 {
     std::cout <<"ASSIGNMENT #" << std::setw(2);
 }
 std::cout << asNum << ": " << asName << std::endl;
 std::cout << "*********************************************\n\n";
 std::cout << std::right;
}
```

```cpp
/*****************************************************************************
 * AUTHOR       : Saul Moreno
 * STUDENT ID   : 269491
 * ASSIGNMENT # : 3
 * CLASS        : CS1C
 * SECTION      : MW 5:00pm
 * DUE DATE     : 2/12/19
 *****************************************************************************/

#include "header.h"

/*****************************************************************************
 * Pointer
 * ---------------------------------------------------------------------------
 * This program will show the user the amount of items in stock and their cost
 * and subtract from the inventory then add up the cost before and after tax.
 *****************************************************************************/
struct Inventory
{
    std::string equipmentName;  // The name of the equipment
    double cost;                // The cost of the equipment
    int    quantity;            // The quantity in the inventory

};

namespace variable
{
    const int PROMPT_COL  = 50; // Column size for the cout
    const int RECEIPT_COL = 22; // Column size for the receipt
    const int INV_COL     = 32; // Column size for the inventory
    const int PRICE_COL   = 7;  // Column size for the price
    int basketShoesAmount; // The # of Nike shoes being bought
    int tShirtAmount;      // The # of T-shirt being bought
    int brooksAmount;      // The # of Brooks shoes being bought
    int asicsAmount;       // The # of Asics shoes being bought
    int shortAmount;       // The # of shorts being bought
    int basketInv;         // Holds the amount of Nike shoes in the inventory
    int tShirtInv;         // Holds the amount of T-shirts in the inventory
    int brooksInv;         // Holds the amount of Brooks shoes in the inventory
    int asicsInv;          // Holds the amount of Asics shoes in the inventory
    int shortInv;          // Holds the amount of shorts in the inventory
    double basketCost;     // Holds the price of Nike shoes
    double tShirtCost;     // Holds the price of
    double brooksCost;     // Holds the price of Brooks shoes
    double asicsCost;      // Holds the price of Asics shoes
    double shortCost;      // Holds the price of shorts
    double amtBeforeTax;   // Holds the amount of the sale before tax
    double tax;            // Tax % being charged; 7.75.
    double taxAmount;      // Stores the amount that was taxed
    double amtAfterTax;    // The total value after tax
}

int main()
{

    Inventory inventory[5]; // Creates an array that holds 5 elements
    variable::tax = 7.75;   // initializing the tax amount
```

```
58
59      //Calls the function to print out the author box
60      PrintHeader("Pointer", 3, 'A');
61
62      std::cout << "This program will show the items available for purchase\n"
63                << "and how many are in stock. Then after the user has\n"
64                << "selected how many they want the program will add up\n"
65                << "their total before and after tax\n\n";
66
67      inventory[0].equipmentName = "Nike basketball shoes";
68      inventory[0].cost = 179.99;
69      inventory[0].quantity = 25;
70      inventory[1].equipmentName = "Under Armour T-shirt";
71      inventory[1].cost = 29.99;
72      inventory[1].quantity = 88;
73      inventory[2].equipmentName = "Brooks running shoes";
74      inventory[2].cost = 121.44;
75      inventory[2].quantity = 13;
76      inventory[3].equipmentName = "Asics running shoes";
77      inventory[3].cost = 165.88;
78      inventory[3].quantity = 12;
79      inventory[4].equipmentName = "Under Armour shorts";
80      inventory[4].cost = 45.77;
81      inventory[4].quantity = 35;
82
83      std::cout << std::left;
84      std::cout << std::setw(variable::RECEIPT_COL) << "Name of Equipment"
85                << std::setw(variable::PRICE_COL) << "Cost" << "Quantity\n";
86      for(int count = 0; count < 5; count++)
87      {
88          std::cout << std::setw(variable::RECEIPT_COL)
89                    << inventory[count].equipmentName
90                    << std::setw(variable::PRICE_COL)
91                    << inventory[count].cost << " "
92                    << inventory[count].quantity << std::endl;
93      }// end for(int count = 0; count < 5; count++)
94
95      std::cout << std::endl;
96      std::cout << std::setw(variable::PROMPT_COL)
97                << "Enter how many Nike basketball shoes do you want? ";
98      std::cin  >> variable::basketShoesAmount;
99
100     std::cout << std::setw(variable::PROMPT_COL)
101               << "Enter how many Under Armour T-shirts do you want? ";
102     std::cin  >> variable::tShirtAmount;
103
104     std::cout << std::setw(variable::PROMPT_COL)
105               << "Enter how many Brooks shoes do you want? ";
106     std::cin  >> variable::brooksAmount;
107
108     std::cout << std::setw(variable::PROMPT_COL)
109               << "Enter how many Asics running shoes do you want? ";
110     std::cin  >> variable::asicsAmount;
111
112     std::cout << std::setw(variable::PROMPT_COL)
113               << "Enter how many Under Armour shorts do you want? ";
114     std::cin  >> variable::shortAmount;
```

```
115     std::cin.ignore(1000, '\n');
116
117     std::cout << std::endl;
118     variable::basketInv = inventory[0].quantity - variable::basketShoesAmount;
119     variable::basketCost = inventory[0].cost * variable::basketShoesAmount;
120     inventory[0].quantity = variable::basketInv;
121     std::cout << std::setw(variable::INV_COL)<< "Nike shoes left in inventory:"
122               << inventory[0].quantity << std::endl;
123
124     variable::tShirtInv = inventory[1].quantity - variable::tShirtAmount;
125     variable::tShirtCost = inventory[1].cost * variable::tShirtAmount;
126     inventory[1].quantity = variable::tShirtInv;
127     std::cout << std::setw(variable::INV_COL) << "T-Shirts left in inventory:"
128               << inventory[1].quantity << std::endl;
129
130     variable::brooksInv = inventory[2].quantity - variable::brooksAmount;
131     variable::brooksCost = inventory[2].cost * variable::brooksAmount;
132     inventory[2].quantity = variable::brooksInv;
133     std::cout << std::setw(variable::INV_COL)
134               << "Brooks shoes left in inventory:" << inventory[2].quantity
135               << std::endl;
136
137     variable::asicsInv = inventory[3].quantity - variable::asicsAmount;
138     variable::asicsCost = inventory[3].cost * variable::asicsAmount;
139     inventory[3].quantity = variable::asicsInv;
140     std::cout << std::setw(variable::INV_COL)
141               << "Asics shoes left in inventory:" << inventory[3].quantity
142               << std::endl;
143
144     variable::shortInv = inventory[4].quantity - variable::shortAmount;
145     variable::shortCost = inventory[4].cost * variable::shortAmount;
146     inventory[4].quantity = variable::shortInv;
147     std::cout << std::setw(variable::INV_COL) << "Shorts left in inventory:"
148               << inventory[4].quantity << std::endl;
149
150     variable::amtBeforeTax = variable::basketCost + variable::tShirtCost
151                            + variable::brooksCost + variable::asicsAmount
152                            + variable::shortAmount;
153
154     std::cout << std::endl;
155     std::cout << "Receipt\n";
156     std::cout << std::setw(variable::RECEIPT_COL) << "Nike Shoes"
157               <<  "x" << std::fixed << std::setprecision(2)
158               << variable::basketShoesAmount
159               << " = " << variable::basketCost << std::endl;
160     std::cout << std::setw(variable::RECEIPT_COL) << "Under Armour T-shirts"
161               << "x" << std::fixed << std::setprecision(2)
162               << variable::tShirtAmount
163               << " = " << variable::tShirtCost << std::endl;
164     std::cout << std::setw(variable::RECEIPT_COL) << "Brooks shoes"
165               <<  "x" << std::fixed << std::setprecision(2)
166               << variable::brooksAmount
167               << " = " << variable::brooksCost << std::endl;
168     std::cout << std::setw(variable::RECEIPT_COL)<< "Asics shoes"
169               <<  "x" << std::fixed << std::setprecision(2)
170               << variable::asicsAmount
171               << " = " << variable::asicsCost << std::endl;
```

```
172     std::cout << std::setw(variable::RECEIPT_COL) << "Under Armour shorts"
173               <<  "x" << std::fixed << std::setprecision(2)
174               << variable::shortAmount
175               << " = " << variable::shortCost << std::endl;
176
177     std::cout << std::endl;
178     std::cout << std::setw(variable::RECEIPT_COL) << "Amount before tax: "
179              << std::fixed << std::setprecision(2) << variable::amtBeforeTax
180              << std::endl;
181     variable::taxAmount = (variable::amtBeforeTax * variable::tax) / 100;
182     std::cout << std::setw(variable::RECEIPT_COL) << "Tax: "
183               << std::fixed << std::setprecision(2) << variable::taxAmount
184               << std::endl;
185     variable::amtAfterTax = variable::amtBeforeTax + variable::taxAmount;
186     std::cout << std::setw(variable::RECEIPT_COL) << "Amount after tax: "
187               << std::fixed << std::setprecision(2) << variable::amtAfterTax
188               << std::endl;
189     std::cout << std::right;
190
191     return 0;
192 }
193
```