# University of Central Arkansas Lab 2 In-class Assignment

**Topic:** Data types, Assignment statements, Arithmetic operators, Input (**cin**) statement  
**Reading:** Ch. 2, Ch. 3   
**Due Date**:the end of this lab meeting. Source code must be submitted via **clarenceb@uca.edu**

***\*Note: Include the following set of comments at the top of your source code for all assignments.***

***// Author:***

***// Assignment #: (Example: A2-1)***

***// Lab Time : Tuesday 2:40-4:30***

***// Date of work:***

***/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\****

***Design: Provide an general overall description of the program***

***Input:***

***Process:***

***Output:***

***\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/***

**Assignment:**

1. ***(Save this file as* A2-1.cpp)** Write a C++ program to calculate and display the volume of a swimming pool.

Allow the user to enter the dimensions (***length, width,*** and ***depth***) of the pool. The program should calculate the volume of the pool. The formula for calculating the volume is: ***volume = length \* width \* depth***. Display the **dimensions** and **volume** of the pool using the appropriate variables.

***Sample Input/Output:***

Length: ? 60.4

Width: ? 35.4

Depth: ? 8.3

Dimensions of the Pool:

Length 60.4 feet

Width 35.4 feet

Depth 8.3 feet

Volume of the pool: 17746.7 cubic feet

*Copy and paste the following form into MSVS 2010 and fill in all blanks. Build and run your program.*

// Author:

// Assignment Number:

// Lab Time: Tuesday, 2:40-4:30

// Date of Work:

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*A2-1\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Design :Calculate and display the volume of a swimming pool

Input: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Process: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Output: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

#include <iostream>

using namespace std; //introduces namespace std

int main ( void )

{

//Declaration/Initialization statements

\_\_\_\_\_\_ \_\_\_\_\_\_\_; //stores length of pool

\_\_\_\_\_\_ \_\_\_\_\_\_\_; //stores width of pool

\_\_\_\_\_\_ \_\_\_\_\_\_\_; //stores depth of pool

\_\_\_\_\_\_ \_\_\_\_\_\_\_; //stores the calculated volume of pool

//Prompt user to enter the length of pool

cout << "\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_";

cin >> \_\_\_\_\_\_\_\_;

//Prompt user to enter the width of pool

cout << "\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_";

cin >> \_\_\_\_\_\_\_;

//Prompt user to enter the depth of pool

cout << "\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_";

cin >> \_\_\_\_\_\_\_;

//Formula to calculate volume

\_\_\_\_\_\_\_ = \_\_\_\_\_\_ \* \_\_\_\_\_\_ \* \_\_\_\_\_\_\_;

//Displays the dimensions and volume of the pool

cout << "\n\n\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: \n" << "Length " << \_\_\_\_\_\_ << " feet" << "\nWidth " << \_\_\_\_\_\_ << " feet" << "\nDepth " << \_\_\_\_\_\_\_ << " feet" << "\n\nVolume of the pool: " << \_\_\_\_\_\_\_\_\_\_ << " cubic feet." << endl;

return 0;

}

1. ***(Save this file as* A2-2.cpp)** **Stadium Seating**. There are three seating categories at a stadium. For a softball game, Class A seats cost $15, Class B seats cost $12, and Class C seats cost $9. Write a program that asks how many tickets for each class of seats were sold, then displays the amount of income generated from ticket sales.

***Sample Input/Output:***

Please enter the total # of tickets sold for Class A seating: 65

Please enter the total # of tickets sold for Class B seating: 55

Please enter the total # of tickets sold for Class C seating: 50

Class A ticket sales..........$975.00

Class B ticket sales..........$660.00

Class C ticket sales..........$450.00

Total ticket sales..............$2085.00

*Copy and paste the following form into .Net 2008 and fill in all blanks. Build and run your program.*

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*A2-2\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Design: Determines the total value of ticket sales for three different types of tickets

Input: Number of Class A tickets, Number of Class B Tickets,

Number of Class C Ticktes

Process: Class A Sales = # Class A \* Cost Class A

Class B Sales = # Class B \* Cost Class B

Class C Sales = # Class C \* Cost Class C

Total Ticket Sales = Class A Sales + Class B Sales + Class C Sales

Output: Class A Sales, Class B Sales, Class C Sales, Total Ticket Sales

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

#include <iostream>

using namespace std; //introduces namespace std

int main ( void )

{

//Variable Declaration statements

int \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; //stores # of tickets sold for Class A seats

int \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; //stores # of tickets sold for Class B seats

int \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; //stores # of tickets sold for Class C seats

double \_\_\_\_\_\_\_\_\_\_\_\_\_= 15.0; //stores cost of a Class A ticket

double \_\_\_\_\_\_\_\_\_\_\_\_\_= 12.0; //stores cost of a Class B ticket

double \_\_\_\_\_\_\_\_\_\_\_\_\_= 9.00; //stores cost of a Class C ticket

double \_\_\_\_\_\_\_\_\_\_\_\_\_; //stores total cost of a Class A ticket

double \_\_\_\_\_\_\_\_\_\_\_\_\_; //stores total cost of a Class B ticket

double \_\_\_\_\_\_\_\_\_\_\_\_\_; //stores total cost of a Class C ticket

double total\_income = 0.0; // stores the total income of selling of all tickets

//Prompt user to enter the # of tickets sold for each Class of seating

cout <<"\n\nPlease enter the total # of tickets sold for Class A seating: "; // Type A

cin >> \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

cout <<"\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_"; // Type B

cin >> \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

cout <<"\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_"; // Type C

cin >> \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\* \_\_\_\_\_\_\_\_\_; //cacluate & stores total cost of a Class A ticket

\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\* \_\_\_\_\_\_\_\_\_; // cacluate & stores total cost of a Class B ticket

\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\* \_\_\_\_\_\_\_\_\_; //cacluate & stores total cost of a Class C ticket

//Calculate total income from tickets sales

\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_+ \_\_\_\_\_\_\_\_\_;

//Displays the total income from ticket sales

cout << endl << endl;

cout << "Class A ticket sales..........$"<< \_\_\_\_\_\_\_<< endl;//Display class A ticket sales

cout << \_\_\_\_\_\_\_\_\_\_\_<< \_\_\_\_\_\_\_\_\_\_\_ << \_\_\_\_\_\_; // Display class B ticket sales

cout << \_\_\_\_\_\_\_\_\_\_\_<< \_\_\_\_\_\_\_\_\_\_\_ << \_\_\_\_\_\_; // Display class C ticket sales

cout << "\nTotal ticket sales..........$" << total\_income; //Display total income of

ticket sales

cout << endl << endl;

return 0;

}

**CSCI 1470 Lab 2 Out-of-class Assignment  
Due: Tuesday, 09/8/2015 by 11:00 pm**

**Topic:** Input (**cin**) statement, Data types, Assignment statements, Arithmetic operators  
**Reading:** Ch. 2, Ch. 3

Submit all source codes (\*.cpp) at the same time to **clarenceb@uca.edu**

***\*Note: Include the following set of comments at the top of your source code for all assignments.***

***The design header must be completed in order to earn any points for the lab***

***// Author:***

***// Assignment #: (Example: B2-1)***

***// Lab Time : Tuesday 2:40-4:30***

***// Date of work:***

***/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\****

***Design: Provide an general overall description of the program***

***Input:***

***Process:***

***Output:***

***\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/***

1. ***(Save this file as* B2-1.cpp)** Steve’s Really Really Quick Mart only sells five types of items. The type and the price of each type of item is shown below:

Bottled Drink = $1.35 Candy Bar = $1.25 Bag of Potato Chips = $0.85

Chewing Gum = $1.20 Box of Cookies = $2.75

Write a program that asks the customer to enter the quantity of each type of item that they are purchasing from the store and outputs the quantity and the cost of each type for their purchase, as well as the sub-total of the items before tax. Determine the sales tax based on the Conway, Arkansas sales tax rate of 8.75%. Output both the sales tax and the total cost for their purchase.

We have not covered formatting output yet, so your output values will appear strange (more than 2 decimal places for money amounts).

***Sample Output:***

3 Bottled Drinks...............$4.05

5 Candy Bars....................$6.25

2 Bags of Potato Chips….$1.70

0 Chewing Gum…………$0.00

1 Boxes of Cookies……..$2.75

Subtotal.............................$14.75

Sales Tax (at 8.75%).........$1.29

Total Cost..........................$16.04