**Supporting File for Lab No. 9**

**LAB 9.1 Working with the while Loop**

Compile the code is shown below:

#include <iostream> using namespace std;

int main()

{

char letter = 'a';

while (letter != 'x')

{

cout << "Please enter a letter" << endl; cin >> letter;

cout << "The letter you entered is " << letter << endl;

}

return 0;

}

*Exercise 1:* This program is not user friendly. Run it a few times and explain why.

*Exercise 2:* Add to the code so that the program is more user friendly.

*Exercise 3:* How would this code affect the execution of the program if the while loop is replaced by a do-while loop? Try it and see

**LAB 9.2 Working with the while Loop continued…**

Compile the code is shown below:

#include <iostream> using namespace std;

int main()

{

**// Fill in the code to define and initialize to 1 the variable month**

float total = 0, rain;

cout << "Enter the total rainfall for month " << month << endl; cout << "Enter -1 when you are finished" << endl;

// **Fill in the code to read in the value for rain**

// **Fill in the code to start a while loop that iterates**

// **while rain does not equal -1**

{

// **Fill in the code to update total by adding it to rain**

// **Fill in the code to increment month by one**

cout << "Enter the total rainfall in inches for month "

<< month << endl;

cout << "Enter -1 when you are finished" << endl;

**// Fill in the code to read in the value for rain**

}

if (month == 1)

cout << "No data has been entered" << endl;

else

cout << "The total rainfall for the " << month-1 << " months is "<< total << " inches." << endl;

return 0;

}

*Exercise 4:* Complete the program above by filling in the code described in the statements in bold so that it will perform the indicated task.

*Exercise 5:* Run the program several times with various input. Record your results. Are they correct? What happens if you enter –1 first? What happens if you enter only values of 0 for one or more months? Is there any numeri-cal data that you should not enter?

*Exercise 6:* What is the purpose of the following code in the program above?

if (month == 1)

cout << "No data has been entered" << endl;

**LAB 9.3 Working with the do-while Loop**

#include <iostream> #include <iomanip> using namespace std;

int main()

{

// **Fill in the code to define an integer variable called number,**

// **a floating point variable called cost,**

// **and a character variable called beverage**

bool validBeverage;

cout << fixed << showpoint << setprecision(2);

do

{

cout << endl << endl;

cout << "Hot Beverage Menu" << endl << endl;

cout << "A: Coffee $1.00" << endl;

cout << "B: Tea $ .75" << endl;

cout << "C: Hot Chocolate $1.25" << endl;

cout << "D: Cappuccino $2.50" << endl << endl << endl;

cout << "Enter the beverage A,B,C, or D you desire" << endl; cout << "Enter E to exit the program" << endl << endl;

**// Fill in the code to read in beverage**

switch(beverage)

{

case 'a': case 'A': case 'b': case 'B': case 'c': case 'C': case 'd':

case 'D': validBeverage = true; break;

default: validBeverage = false;

}

if (validBeverage == true)

{

cout << "How many cups would you like?" << endl;

**// Fill in the code to read in number**

}

// **Fill in the code to begin a switch statement**

// **that is controlled by beverage**

{

case 'a':

case 'A': cost = number \* 1.0;

cout << "The total cost is $ " << cost << endl;

break;

// **Fill in the code to give the case for hot chocolate ($1.25 a cup)**

// **Fill in the code to give the case for tea ( $0.75 a cup)**

// **Fill in the code to give the case for cappuccino ($2.50 a cup)**

case 'e':

case 'E': cout << " Please come again" << endl; break;

default:cout << **// Fill in the code to write a message // indicating an invalid selection.**

cout << " Try again please" << endl;

}

} **// Fill in the code to finish the do-while statement with the**

// **condition that beverage does not equal E or e.**

// **Fill in the appropriate return statement**

}

*Exercise 1:* Fill in the indicated code to complete the above program. Then compile and run the program several times with various inputs. Try all the possible relevant cases and record your results.

*Exercise 2:* What do you think will happen if you do not enter A, B, C, D or E? Try running the program and inputting another letter.

*Exercise 3:* Replace the line

if (validBeverage == true)

with the line

if (validBeverage)

and run the program again. Are there any differences in the execution of the program? Why or why not?