**C# Homework 05**

**Question 1**

What is a compound assignment operator? How does it work?

**Answer**

A compound assignment operator has a shorter syntax to assign the result. The operation is performed on the two operands before the result is assigned to the first operand.

Sum += update; (+= is equal to = sum +)

Sum = sum + update;

Remainder %= dividend;

**Question 2**

List all the compound assignment operators.

**Answer**

+= addition assignment, -= subtraction assignment, \*= multiplication assignment, /= division assignment, %= modulo assignment, &= bitwise AND assignment, |= bitwise OR assignment, ^= bitwise XOR assignment, <<= left shift assignment, >>= right shift assignment, => lambda operator

**Question 3**

List two ways to increment a numeric variable by 5. List ways to decrement a numeric variable by 50.

**Answer**

Use the compound assignment operator, var = var++

**Question 4**

How long does a while loop run?

**Answer**

If the condition is true it will continue. As soon as it gets a false it stops.

**Question 5**

What is an iteration variable?

**Answer**

In programming languages that have a form of iteration loop such as a for loop or a for each loop, then the iteration variable is the variable that is changed each iteration of the loop.

**Question 6**

What happens if you don’t change the loop variable in the body of the while loop back?

**Answer**

You will have an infinite loop.

**Question 7**

How many parts does a for loop statement have? Can you omit any of them? Can you omit all of them? What happens if you omit all of them?

**Answer**

A for-loop has two parts: a header specifying the iteration, and a body which is executed once per iteration. The header often declares an explicit loop counter or loop variable, which allows the body to know which iteration is being executed. Yes, you can omit some of them. Yes, you can omit all of them however you would get an infinite loop. You can have multiple initializations, end conditions (not as common), and iteration updates (more common).

For(initialization; end condition; iteration update)

{

//statements

}

**Question 8**

How do you guarantee that a loop runs at least once?

**Answer**

While loop is almost the same as a while loop except that the loop body is guaranteed to execute at least once. A while loop says, “Loop while the condition is true, and execute this block of code”, a do while loop says, “Execute this block of code, and then continue to loop while the condition is true.”

By using a do statement.

A while loop you test if it is false or true if it is true you do stuff and it repeats until it gets a false. A do loop first does things then tests if it is true or false until it gets a false then it does other stuff.

**Question 9**

What does the break statement do?

**Answer**

The break statement terminates the closest enclosing loop or switch statement in which it appears. Control is passed to the statement that follows the terminated statement.

**Question 10**

What does the continue statement do?

**Answer**

The continue statement passes control to the next iteration of the enclosing while, do, for, or foreach statement in which it appears.

**Question 11**

Can you think of any reason why you would want to have an infinite loop? An “infinite loop” is a loop without an update variable that in effect runs forever. As you will see, these kinds of loops are written intentionally to perform various kinds of tasks.

**Answer**

Web server

While (true)

{

Listen\_for\_incoming\_HTTP\_request();

Handle\_incoming\_HTTP\_request();

}

That is an infinite loop