**Topic 1: while Loop**

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**Content**

**Reading**

[Reading](https://dmacc.blackboard.com/webapps/blackboard/content/listContent.jsp?course_id=_102593_1&content_id=_7286877_1)

Input and Output (I/O)

* + Microsoft:docs.microsoft.com
    - [while](https://docs.microsoft.com/en-us/dotnet/csharp/language-reference/keywords/while)
  + GeeksForGeeks: geeksforgeeks.com
    - [while](https://www.geeksforgeeks.org/loops-in-c-sharp/)
  + TutorialsPoint: tutorialspoint.com
    - [while](https://www.tutorialspoint.com/csharp/csharp_while_loop.htm)
  + W3Schools: w3schools.com
    - [while](https://www.w3schools.com/cs/cs_while_loop.asp)

**C# while loop**

[C# while loop](https://dmacc.blackboard.com/webapps/blackboard/content/listContent.jsp?course_id=_102593_1&content_id=_7286877_1)

https://youtu.be/XhaQ97Q9Q7w

**while loop**

[while loop](https://dmacc.blackboard.com/webapps/blackboard/content/listContent.jsp?course_id=_102593_1&content_id=_7286877_1)

The while loop causes a statement(s) to repeat as long the conditional Boolean expression is true.

* + With one statement
  + while (BooleanExpression)
  + statement;
  + With multiple statements
  + while (BooleanExpression)
  + {
  + statement1;
  + statement2;
  + ...
  + }
  + With one statement including curly braces { }
  + while (BooleanExpression)
  + {
  + statement;
  + }

It is always best to use curly braces { } even with one statement. It lends to readable code, as well as avoids errors if you (or a team mate) refactor(s) the code and adds more statements for the while loop.

**Add y/n to continue**

[Add y/n to continue](https://dmacc.blackboard.com/webapps/blackboard/content/listContent.jsp?course_id=_102593_1&content_id=_7286877_1)

The loop condition must be true to continue with the loop. Once the condition is false, the loop ceases to execute, and the line following the loop is now execute.

For example, when getting an undetermined amount of input, you can ask the user if they want to continue.

Add your code inside the following:

char answer = 'y';

while ( answer != 'n' ){

// your

// code

// here

Console.WriteLine("Would you like to continue? y/n");

answer = Convert.ToChar(Console.ReadLine().Substring(0,1));

}

Console.WriteLine("The loop has ended.");

**Average Age practice**

[Average Age practice](https://dmacc.blackboard.com/webapps/blackboard/content/listContent.jsp?course_id=_102593_1&content_id=_7286877_1)

Create a Console App that uses a while loop to calculate the average of 3 ages.

Input integers, but use the appropriate data type for the average.

Generally, you use a while to do something while a condition is true. You can use a while loop to execute a certain number of times. \*While\* this is not the best use of the while loop and another loop is generally more appropriate, it follows the pattern below

* + Declare and initialize an age sum variable (ageTotal)
  + Declare an intialize an average variable (average)
  + Declare and initialize a number of inputs variable (numAges)  (eg, 3)

while ( there is still more input)

{

// Prompt user for input

// Get input and add to ageTotal

// Increment counter (here called numAges)

}

* + Calculate average of the the ages.
  + Output average with 2 decimal points precision.

Give it at try before looking at the possible solution: [Program.cs](https://dmacc.blackboard.com/bbcswebdav/pid-7286901-dt-content-rid-101466156_1/xid-101466156_1)