**16C\_Threading Demo**

**ComplicatedCalculator class**

**Constructor:**

1. Stores CallbackDelegate instance.

**CalculateValue(Object)**

1. Runs asynchronously when started by thread in Program.Main.
2. When done, calls the CallbackDelegate.

**Program class**

**AutoResetEvent object instance (class level)**

**ThreadDoneCallback (callback method)**

1. Runs when called by CalculateValue method in ComplicatedCalculator

(asynchonous on same secondary thread CalculateValue was using)

1. Counts threads that are completed.
2. When last thread is completed, calls Set method of AutoResetEvent object to wake up the main thread running Program.Main.

**Main**

1. Creates an array with each element containing an instance of the ComplicatedCalculator (10 elements)
   1. Each instance contains a reference to the CallBackDelegate.
2. Loops through array:
   1. Randomly generates two numbers.
   2. Creates an instance of the ParameterizedThreadStart delegate.
   3. Creates a new thread from the ParameterizedThreadStart delegate instance.
   4. Names and starts the thread passing in an array of 2 numbers.
3. Continues processing
4. Calls WaitOne method of the AutoResetEvent object instance.
5. Loops through array to print results from each call to CalculateValue in ComplicatedCalculator.
6. End.