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CECS 475

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Lab 5 Explanation

Submit the word document that shows the code you modify for using asynchronous programming.

The first thing I had to do in the programming assignment 5 is that I needed to modify my Notify method. This is currently what my method looks like.

```
        /// <summary>
        /// Event handler method
        /// </summary>
        /// <param name="sender"></param>
        /// <param name="e"></param>
        public void Notification(object sender, StockNotification e)
        {
          lock (ToLock)
          {
            Console.WriteLine(brokerName.PadRight(12) + e.StockName.PadRight(12) +
e.CurrentValue.ToString().PadRight(12) + e.NumberOfChanges.ToString().PadRight(12));
          }
          lock (ToLock)
          {

            string directory =
"/Users/brandontran/Projects/CECS475Lab3_2/CECS475Lab3_2";
            string filename = "stocks.txt";
            string path = directory + filename;

            bool FileExists = File.Exists(path);

            if (!File.Exists(path))
            {
              using (StreamWriter writer = File.CreateText(path))
              {
                writer.WriteLine("Broker".PadRight(12) + "Stock".PadRight(12) +
"Value".PadRight(12) + "Changes".PadRight(12));
```

```
                    writer.WriteLine(e.StockName.PadRight(12) +
e.CurrentValue.ToString().PadRight(12) + e.NumberOfChanges.ToString().PadRight(12) +
e.InitialValue.ToString().PadRight(12));
                    writer.Flush();
                }
            }
            else if (File.Exists(path))
            {
                using (StreamWriter writer = File.AppendText(path))
                {
                    writer.WriteLine(brokerName.PadRight(12) + e.StockName.PadRight(12) +
e.CurrentValue.ToString().PadRight(12) + e.NumberOfChanges.ToString().PadRight(12));
                    writer.Flush();
                }
            }
        }
    }//end of Notify method
```

Now, I used Async/Await Synchronous by modifying two lines of code in the StockBroker class.

1. **string path = "/Users/brandontran/Projects/CECS475Lab3_2/CECS475Lab3_2";**
2. **public static ReaderWriterLock newSync = new ReaderWriterLock();**

As well as modify my Notify method to write the file properly using Async/Await Synchronous implementation

```
public async void Notify(object sender, StockNotification e)
{
    await writeFile((Stock)sender);
}

public async Task writeFile(Stock e)
{
    string header;
    String outBrokerName = brokerName.ToString();
    String outStockName = e._stockName.ToString();
    String outCurrentValueOfStock = e._currentValueOfStock.ToString();
    String outNumOfChanges = e._numOfChanges.ToString();

    header = outBrokerName.PadRight(12) + outStockName.PadRight(12) +
outCurrentValueOfStock.PadRight(12) + outNumOfChanges.PadRight(12) + DateTime.Now;
    newSync.EnterWriteLock();
    Console.WriteLine(header);

    using (StreamWriter outputFile = new StreamWriter(path, true))
    {
        await outputFile.WriteAsync(header + "\n");
    }
         newSync.ExitWriteLock();
}
```