Thread

Experiment

Experiment #1

แก้ไข for ทั้ง 2 จุด

```
for(i=0; i < 100000; i++)
```

เราจะไม่รู้ว่าตัวไหนจะถูก scheduler เลือกมาทำงานใน processor ก่อน

```
1  // simple thread
2  using System;
3  using System.Threading;
4
5  namespace Lab_OS_Concurrency
6  {
7      class Program
8      {
9          static void TestThread1()
10         {
11             int i;
12             for (i = 0; i < 100; i++)
13                 Console.WriteLine("Thread# 1 i={0}", i);
14         }
15         static void TestThread2()
16         {
17             int i;
18             for (i = 0; i < 100; i++)
19                 Console.WriteLine("Thread# 2 i={0}", i);
20         }
21
22         static void Main(string[] args)
23         {
24             Thread th1 = new Thread(TestThread1);
25             Thread th2 = new Thread(TestThread2);
26             th1.Start();
27             th2.Start();
28         }
29     }
30 }
```

Experiment #2

- Resource sharing among threads

```
1   //test resource sharing
2   using System;
3   using System.Threading;
4
5   namespace Lab_OS_Concurrency01
6   {
7       class Program
8       {
9           static int resource = 10000;
10          static void TestThread1()
11          {
12              Console.WriteLine("Thread# 1 i={0}", resource);
13          }
14          static void TestThread2()
15          {
16              Console.WriteLine("Thread# 2 i={0}", resource);
17          }
18
19          static void Main(string[] args)
20          {
21              Thread th1 = new Thread(TestThread1);
22              Thread th2 = new Thread(TestThread2);
23              th1.Start();
24              th2.Start();
25          }
26      }
27  }
```

Experiment #3

- Pause a thread

แก้ไข

`Thread.Sleep(100)`

```
//test pause a thread
using System;
using System.Threading;

namespace Lab_OS_Concurrency02
{
    class Program
    {
        static int resource = 10000;
        static void TestThread1()
        {
            resource = 55555;
        }

        static void Main(string[] args)
        {
            Thread th1 = new Thread(TestThread1);
            th1.Start();
              Thread.Sleep(10);
            Console.WriteLine("resource={0}", resource);
        }
    }
}
```

Main Thread เป็นคน Sleep

Experiment #3.1

- Pause a thread #2

```
1   //test pause #2
2   using System;
3   using System.Threading;
4
5   namespace Lab_OS_Concurrency01
6   {
7       class Program
8       {
9           static int resource = 10000;
10          static void TestThread1()
11          {
12              int i;
13              for (i = 0; i < 45555; i++)
14              {
15                  resource++;
16                  Console.Write(".");
17              }
18          }
19
20          static void Main(string[] args)
21          {
22              Thread th1 = new Thread(TestThread1);
23              th1.Start();
24              Thread.Sleep(10);
25              Console.WriteLine("Resource = {0}", resource);
26          }
27      }
28  }
```

Experiment #3.2

- Join thread

```
1   //test pause #2
2   using System;
3   using System.Threading;
4
5   namespace Lab_OS_Concurrency01
6   {
7       class Program
8       {
9           static int resource = 10000;
10          static void TestThread1()
11          {
12              int i;
13              for (i = 0; i < 45555; i++)
14              {
15                  resource++;
16                  Console.Write(".");
17              }
18          }
19
20          static void Main(string[] args)
21          {
22              Thread th1 = new Thread(TestThread1);
23              th1.Start();
24              //Thread.Sleep(10);
25              th1.Join();
26              Console.WriteLine("Resource = {0}", resource);
27          }
28      }
29  }
```