Practice Reactive Extensions

Prereq

☐ Install Nuget→*SystemReactive*

Practice 1

Sum all primes from range 1-100

☐ Generate range using **Observable.Range** and filter primes
☐ Subscribe to filtered range and print out the number

Example

```
var values = Observable.Range(0, 10).Where(x => x % 2 == 0);

values.Subscribe(x => {

    Console.Write(x + " ");

});
```

Practice 2

Monitor total amount on the invoice for a notebook and a bag after applying a discount
Sequence of events:
- added notebook 1200
- added discount 100
- added bag 50

Use **Subject** class

```
OnNext() // method for simulating the events
```

- [ ] Create a subject (InvoiceSubject)
- [ ] Register an observer for printing total amount (*Subscribe*)
- [ ] Add sequence of events that influence invoice item total(*OnNext*)
- [ ] Use *Scan* for accumulating partial results

Example

```
var quotes = new Subject<double>();

var quotesover = quotes.Select(x => x>100.0);

//register an observer

quotesover.Subscribe(x => Console.WriteLine("Above par value:
{0:C}", x));

quotes.OnNext(101.0);

quotes.OnNext(99.0);

quotes.OnNext(98.0);
```

Practice 3

Filter log messages that start with a certain date

```
var s5 = new Subject<String>();
//todo add filtering
s5.Subscribe(x => Console.WriteLine("{0:T}", x));

//produce 1000 messages
for (int i = 0; i < 1000; i++)
{
   s5.OnNext(DateTime.Now.AddMinutes(i * 4) + " message " + i);
}
```