

the dark side of .NET

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the dark side of .NET

- The problem(s) with R
- I'm deeply in love ~~with Excel~~
- I'm deeply in love ~~with COM~~
- XLL
 - flirting



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- R concentrates on data modelling and has a vast array of statistical functions that allow analysis and manipulation of data.
- R is less appropriate where the process of managing the data (for examples, interrupts, exception handling) is more difficult.
- R developers occasionally try to develop systems in R and it is particularly ill suited to this work.
- R is a vector-centric language and doesn't have the structures and interfaces needed for development of a complete system.



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- RdotNet
 - <http://rdotnet.codeplex.com>
- ExcelDNA
 - <http://exceldna.codeplex.com>
- FinAnSu
 - <http://code.google.com/p/finansu>
- Mock Quant
 - <http://mockquant.blogspot.com>



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- The DNA file:

```
<DnaLibrary RuntimeVersion="v4.0"  
  Name="R4Excel" Language="CS">  
  <ExternalLibrary Path="R4Excel.dll"  
    Pack="true" />  
  <ExternalLibrary Path="FinAnSu.dll"  
    Pack="true" />  
</DnaLibrary>
```



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It can all be in this:

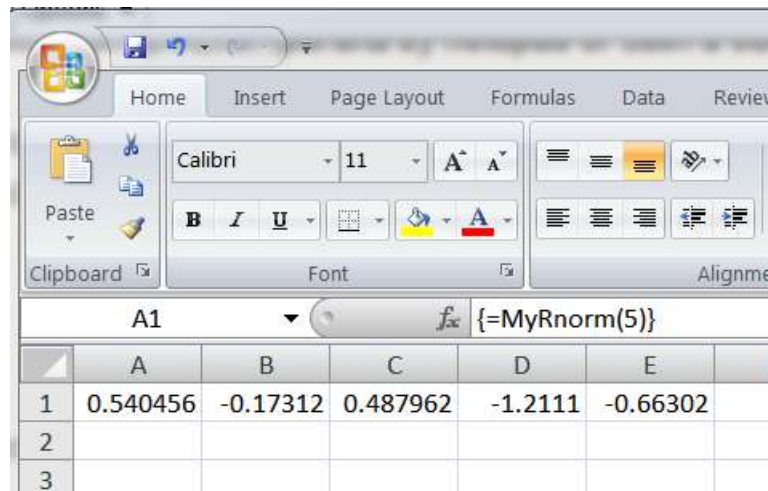
- `<DnaLibrary RuntimeVersion="v4.0" Name="My First XLL" Language="CS">`
- `<ExternalLibrary Path="R.NET.dll" />`
- `<Reference Name="R.NET" />`
- `<![CDATA[`
- `using System;`
- `using System.Collections.Generic;`
- `using System.Linq;`
- `using System.Text;`
- `using ExcelDna.Integration;`
- `using RDotNet;`
- `namespace CSLib`
- `{`
- `public class CSLib`
- `{`

- `static REngine engine = null;`
- `static CSLib()`
- `{`
- `// Set the folder in which R.dll locates.`
- `REngine.SetDllDirectory(@"C:\Program Files\R\R-2.13.0\bin\x386");`
- `engine = REngine.CreateInstance("RDotNet", new[] { "-q" });`
- `}`
- `[ExcelFunction(Description = "get random numbers obey to normal distribution")]`
- `public static double [] MyRnorm(int number)`
- `{`
- `return (engine.EagerEvaluate("rnorm(" + number + ")").AsNumeric().ToArray<double>());`
- `}`
- `}`
- `}`
- `]>`
- `</DnaLibrary>`



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- Demo 1



	A	B	C	D	E
1	0.540456	-0.17312	0.487962	-1.2111	-0.66302
2					
3					



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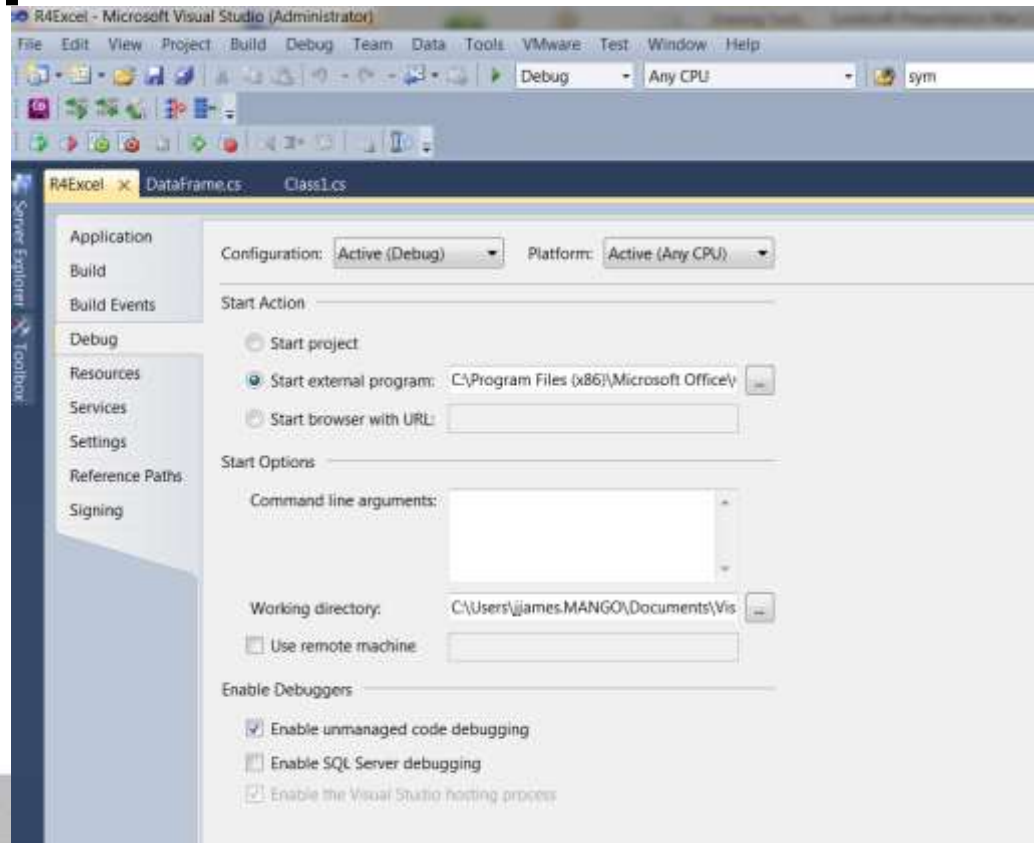
- This can be much richer –

The screenshot shows Microsoft Excel with the following data in the worksheet:

Date	Open	High	Low	Close	Volume
01/09/2011	26.46	26.86	26.21	26.21	60511548
02/09/2011	25.78	26	25.66	25.8	43897065
06/09/2011	25.2	25.59	25.11	25.51	54931986
07/09/2011	25.69	26	25.57	26	41960917
08/09/2011	26	26.66	25.95	26.22	65818212
09/09/2011	26	26.18	25.5	25.74	64531339
12/09/2011	25.44	25.93	25.27	25.89	55047244
13/09/2011	25.92	26.18	25.81	26.04	48794446

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- RdotNet Exposed



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- RdotNet Used...

	A	B	C	D	E
1	x<-1:5	5			
2	y<-x*x	25			
3					
4		1			
5		4			
6		9			
7		16			
8		25			
9		#N/A			
10					

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- Putting it together...

