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SharpDocx

Summary

Generating documents with SharpDocx is a two-step process. First you create a view in Word. A view is a Word document which also contains C# code. Code can be inserted anywhere, e.g. 31-1-2019 00:24:57 would insert the current date and time.

The next step is to create documents based on this view. This requires two lines of code:

var document = DocumentFactory.Create("view.cs.docx");

document.Generate("output.docx");

Out of the box SharpDocx supports inserting text, tables, images and more. This tutorial shows you how.

If you want, you can specify a view model to be used in your view. Then you could write things like < % foreach (var item in Model.MyList) { % >. See the Model sample.

If you want to do something that's not supported by SharpDocx, you can do so by creating your own document subclass. See the Inheritance example.

SharpDocx is inspired by Web technologies like ASP.NET and JSP. Developers familiar with those technologies should feel right at home.

Generating documents with SharpDocx can be very fast: a slightly modified Model sample produced 25 documents per second on my modest laptop. That’s 1500 documents per minute. Single threaded.

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# The basics

At any point in the text you can insert C# statements. Like right here.

The result looks like this:



## The Write method

If you want to display the value of i, you can use the Write method. Right now, i is 1.

This will show:



There’s also a shorthand notation for the Write method: i is still 1.

This results in:



You can insert line breaks by using ‘\n’:

This paragraph  
contains two  
line breaks.

# Conditional content

You can use an if statement to display conditional content.

This will be displayed.

In this case, any formatting will be lost because the code parser ignores any formatting.

If you want to conditionally display text with formatting, use a *text block*: text between two code blocks and placed between curly brackets:

This **will** *also* be displayed, but *with* formatting.

If you want, you can span multiple elements in a text block. E.g.

The diverging pronunciation of tomato (though not so much potato) is primarily one of regional dialect.

The pronunciation 'tuh-MAH-toh' is the standard pronunciation in the UK and is accepted in the US regions of New England along with parts of the lower East Coast, while 'tuh-MAY-toh' is found almost everywhere else.

Else statements are at the moment not supported by SharpDocx. Instead, use another if statement.

# Loops

You can add repeating text blocks to a document like this:

C:\Users\la_113288\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Infobox_info_icon.emfThe value of i is **1**.i *squared* is **1**

C:\Users\la_113288\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Infobox_info_icon.emfThe value of i is **2**.i *squared* is **4**

C:\Users\la_113288\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Infobox_info_icon.emfThe value of i is **3**.i *squared* is **9**

C:\Users\la_113288\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Infobox_info_icon.emfThe value of i is **4**.i *squared* is **16**

C:\Users\la_113288\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Infobox_info_icon.emfThe value of i is **5**.i *squared* is **25**

C:\Users\la_113288\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Infobox_info_icon.emfThe value of i is **6**.i *squared* is **36**

C:\Users\la_113288\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Infobox_info_icon.emfThe value of i is **7**.i *squared* is **49**

C:\Users\la_113288\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Infobox_info_icon.emfThe value of i is **8**.i *squared* is **64**

C:\Users\la_113288\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Infobox_info_icon.emfThe value of i is **9**.i *squared* is **81**

C:\Users\la_113288\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Infobox_info_icon.emfThe value of i is **10**.i *squared* is **100**

C:\Users\la_113288\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Infobox_info_icon.emfThe value of i is **11**.i *squared* is **121**

C:\Users\la_113288\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Infobox_info_icon.emfThe value of i is **12**.i *squared* is **144**

Nested loops  
Loops can also be nested.

### Multiples of 1

1 \* 1 = 1

1 \* 2 = 2

1 \* 3 = 3

**Note:** 3 is divisible by 3.

### Multiples of 2

2 \* 1 = 2

2 \* 2 = 4

2 \* 3 = 6

**Note:** 6 is divisible by 3.

### Multiples of 3

3 \* 1 = 3

**Note:** 3 is divisible by 3.

3 \* 2 = 6

**Note:** 6 is divisible by 3.

3 \* 3 = 9

**Note:** 9 is divisible by 3.

### Multiples of 4

4 \* 1 = 4

4 \* 2 = 8

4 \* 3 = 12

**Note:** 12 is divisible by 3.

# Loops, tables and the AppendRow method

Sometimes you do want a loop, but you don’t want a repeating text block. For example, you just want to append rows to a table, but you don’t want to repeat the table itself. In this case, use {! instead of {.

This text and table do NOT repeat, because we used {!. However, a couple of rows do get appended to the table by using the AppendRow method.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| i \* 1 | i \* 2 | i \* 3 | i \* 4 | i \* 5 | i \* 6 | i \* 7 | i \* 8 | i \* 9 | i \* 10 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 |
| 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 |
| 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
| 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 |
| 7 | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63 | 70 |
| 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | 80 |
| 9 | 18 | 27 | 36 | 45 | 54 | 63 | 72 | 81 | 90 |
| 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| 11 | 22 | 33 | 44 | 55 | 66 | 77 | 88 | 99 | 110 |
| 12 | 24 | 36 | 48 | 60 | 72 | 84 | 96 | 108 | 120 |
| 13 | 26 | 39 | 52 | 65 | 78 | 91 | 104 | 117 | 130 |
| 14 | 28 | 42 | 56 | 70 | 84 | 98 | 112 | 126 | 140 |
| 15 | 30 | 45 | 60 | 75 | 90 | 105 | 120 | 135 | 150 |
| 16 | 32 | 48 | 64 | 80 | 96 | 112 | 128 | 144 | 160 |
| 17 | 34 | 51 | 68 | 85 | 102 | 119 | 136 | 153 | 170 |
| 18 | 36 | 54 | 72 | 90 | 108 | 126 | 144 | 162 | 180 |
| 19 | 38 | 57 | 76 | 95 | 114 | 133 | 152 | 171 | 190 |
| 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 |
| 21 | 42 | 63 | 84 | 105 | 126 | 147 | 168 | 189 | 210 |
| 22 | 44 | 66 | 88 | 110 | 132 | 154 | 176 | 198 | 220 |
| 23 | 46 | 69 | 92 | 115 | 138 | 161 | 184 | 207 | 230 |
| 24 | 48 | 72 | 96 | 120 | 144 | 168 | 192 | 216 | 240 |
| 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
| 26 | 52 | 78 | 104 | 130 | 156 | 182 | 208 | 234 | 260 |
| 27 | 54 | 81 | 108 | 135 | 162 | 189 | 216 | 243 | 270 |
| 28 | 56 | 84 | 112 | 140 | 168 | 196 | 224 | 252 | 280 |
| 29 | 58 | 87 | 116 | 145 | 174 | 203 | 232 | 261 | 290 |
| 30 | 60 | 90 | 120 | 150 | 180 | 210 | 240 | 270 | 300 |

## Combining loops, text blocks and tables

You can nest tables in text blocks in order to create multiple tables. Note that the inner loop does not create a repeating text block, but does append rows.

### Multiples of 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| i |  | j |  | i \* j |
| 1 | \* | 1 | = | 1 |
| 1 | \* | 2 | = | 2 |
| 1 | \* | 3 | = | 3\* |
| 1 | \* | 4 | = | 4 |
| 1 | \* | 5 | = | 5 |
| 1 | \* | 6 | = | 6\* |
|  |  |  |  | \* Divisible by 3 |

### Multiples of 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| i |  | j |  | i \* j |
| 2 | \* | 1 | = | 2 |
| 2 | \* | 2 | = | 4 |
| 2 | \* | 3 | = | 6\* |
| 2 | \* | 4 | = | 8 |
| 2 | \* | 5 | = | 10 |
| 2 | \* | 6 | = | 12\* |
|  |  |  |  | \* Divisible by 3 |

### Multiples of 3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| i |  | j |  | i \* j |
| 3 | \* | 1 | = | 3\* |
| 3 | \* | 2 | = | 6\* |
| 3 | \* | 3 | = | 9\* |
| 3 | \* | 4 | = | 12\* |
| 3 | \* | 5 | = | 15\* |
| 3 | \* | 6 | = | 18\* |
|  |  |  |  | \* Divisible by 3 |

# Images

Insert images using the Image method.

​

If only a file name is specified, SharpDocx searches this file in a directory specified by the ImageDirectory property. Right now this property has been set to ‘C:\Projects\SharpDocx\Samples\SampleProjects\Tutorial\bin\Debug\net45/../../../../../Images’.

The Image method accepts a second optional parameter that specifies the relative size of the image. Here’s  at 15%.

Images that are too wide to be displayed at 100% are automatically scaled back. Here’s an example:



# Replacing text

If you want to replace text, you can use the Replace method.

This will replace *all* occurrences of the specified string.[[1]](#footnote-2)

Here’s the **replaced text**. And here’s some more replaced text.

# Referencing assemblies and importing namespaces

If you want to use specific types in a view, you can use the Assembly and Import directives to get access to them. Directives look like regular code blocks, but they always start with < %@.

Reference an assembly with the Assembly directive.

Import namespaces with the Import directive.

In C# you would write:

using System.Xml.Linq;

Now we can use types in System.Xml.Linq. Let’s read some news.

**Google Chrome To Get Warnings For 'Lookalike URLs'**Google Chrome browser is set to add a feature that will warn users when accessing sites with domain names that look like authentic websites. From a report: The feature has been in the works for quite …

**Google+ Reveals Shutdown Timeline For Consumers**An anonymous reader quotes a report from Android Police: Google announced its plans to sunset its Google+ social media network for consumers on a sour note in October. The platform, which has a small …

**YouTube Strikes Now Being Used As Scammers' Extortion Tool**Scammers are reportedly using YouTube's "three strike" system for extortion. "After filing two false claims against [YouTuber ObbyRaidz], scammers contacted him demanding cash to avoid a third -- and …

**Apple is Planning 3D Cameras for Next Year's iPhones; Three Rear Cameras Setup For This Year's Phone; and Dark Mode for iOS 13: Report**Apple plans to launch iPhones with a more-powerful 3-D camera as soon as next year, stepping up the company's push into augmented reality, Bloomberg reported Wednesday. From the report: The rear-facin…

**Xbox One Consoles Are Down**If you are having trouble getting your Xbox One online, you are not alone. Xbox One consoles around the world have stopped working. From a report: Xbox One owners are reporting major problems with the…

**Google's Also Peddling a Data Collector Through Apple's Back Door**Facebook is not the only one abusing Apple's system for distributing employee-only apps to sidestep the App Store and collect extensive data on users. Google has been running an app called Screenwise …

**Chrome 72 Arrives With Code Injection Blocking, New Developer Features**Following Mozilla's footsteps, Google has released Chrome 72 for Windows, Mac, and Linux. From a report: The release includes code injection blocking and new developer features. You can update to the …

**Schools Are Locking Students' Phones Away to Help With Concentration**Students at a California high school are getting less screen time since the school implemented a ban on cellphone use during the school day. From a report: After one teacher at San Lorenzo High School…

**Americans Got 26.3 Billion Robocalls Last Year, Up 46 Percent From 2017**Americans are now getting so many robo-calls on a regular basis that many are simply choosing not to answer the phone altogether. From a report: That's one big takeaway from a report [PDF] released Tu…

**Electronics Are 'the Fastest-Growing Waste Stream in the World'**Electronic waste is a growing threat to the environment. Thanks to the low cost of manufacturing, it's easier than ever for corporations to pump out millions of laptops, smart phones, internet of thin…

**iRobot Unveils Terra, a Roomba Lawn Mower**Krystalo writes: iRobot is best known for making vacuum cleaner robots: the infamous Roomba lineup. But the company also makes mopping robots (Braava lineup), pool cleaning robots (Mirra lineup), a bo…

**Mind-Altering Cat Parasite Linked To Schizophrenia in Largest Study Yet**Scientists claim they have found new evidence of a link between infection with the protozoan parasite, Toxoplasma gondii, and schizophrenia, in what is described as the largest study of its kind. From…

**UAE Used Cyber Super-Weapon To Spy on iPhones of Foes**Reuters reports: A team of former U.S. government intelligence operatives working for the United Arab Emirates hacked into the iPhones of activists, diplomats and rival foreign leaders with the help o…

**Apple Says It's Banning Facebook's Research App That Collects Users' Personal Information**Facebook is at the center of another privacy scandal -- and this time it hasn't just angered users. It has also angered Apple. From a report: The short version: Apple says Facebook broke an agreement …

**Hanford Nuclear Waste Cleanup Makes Progress, But Questions Loom**The Hanford Vit Plant in Washington state, a $17 billion federal facility for treating and immobilizing radioactive waste, is now on track to begin "glassifying" low-activity nuclear waste as soon as …

In a real world scenario you wouldn’t fetch data or have this much code in a view. But hey, this is just an example.

# The Map

The Map maps OpenXmlElements to plain text and vice versa. It’s being used internally by the Replace method and for finding the C# code in views, among other things. At the moment Map.Text looks something like this:

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Summary  
Generating documents with SharpDocx is a two-step process. First you create a view in Word. A view is a Word document which also contains C# code. Code can be inserted anywhere, e.g. 31-1-2019 00:24:57 would insert the current date and time.  
The next step is to create documents based on this view. This requires two lines of code:  
 var document = DocumentFactory.Create("view.cs.docx");  
 doc …

The Map might be handy when you want to search the document for text.

1. Actually, this will only replace text in the body of the document, and not in headers, footers, end- or footnotes. So this won’t work as expected. But you can use code here. [↑](#footnote-ref-2)