

# Joomla! custom reports using “TinyButStrong”

*A “get started” guide: Part 1 – Simple tables*

## Summary

Joomla! Administrators familiar with the database and with SQL can use TinyButStrong (TBS) to present information from the database in web pages without needing to create a module or component. This article shows how to create simple tables and format data elements within the tables. Parts 2 and 3 of this series address security issues. Further parts will address more advanced presentation options.

## Background

Your customer/boss/partner/club committee want a web page to present data that both they and you know is in the database. Unfortunately no standard component or module will show it. You may know enough to write a module or component to do what is required but you don't have the time. The author urgently needed to prepare custom reports from the Eventlist component and found TBS to be an effective way of doing so. This series of articles may be able to help you deliver what is needed and do it quickly.

The articles assume knowledge of Joomla! administration and SQL. Some additional guidance is provided for those not fully familiar with Joomla! administration.

## Toolkit

The key part of the toolkit is the “TinyButStrong” plugin for Joomla! available from

<http://www.tinybutstrong.com/plugins.php>

The examples were prepared using version 1.2.3 released 23<sup>rd</sup> September 2010.

The web site also has comprehensive documentation and examples. These are aimed at the software's target audience – PHP programmers. Joomla! administrators may find it easier to relate to the TBS documentation to their requirements after working through this guide.

It is also helpful to have an editor available in Joomla! that helps with the creation of HTML tables. The examples were created using the Joomla! Content Editor (JCE) available from

<http://www.joomlacontenteditor.net/>

The examples have been prepared using Joomla! 1.5.22 with the sample data installed.

phpMyAdmin should be available on most servers running Joomla! It is easier to check out the SQL needed to retrieve the data in phpMyAdmin than in Joomla!

## Installing the TBS plugin

Download the plugin from

<http://www.tinybutstrong.com/plugins.php>

The plugin is installed using the extension manager in the normal way. When installed, enable it from the Plugin Manager. Illustration 1 shows the Enabled radio button set to “Yes”. Notice the “Allowed articles” entry in the “Parameters” box. After creating an article to use TBS, we shall return here to enter the article ID. For security reasons, leave the other parameters as in the

illustration. Part 2 will discuss security more fully. It is important to note that installing the plugin with default settings does not compromise security.

### Minor caution

If using TBS, you should turn off the “Create PDF” icon on any page where it is used. See the TBS/Joomla! documentation for an alternative option.

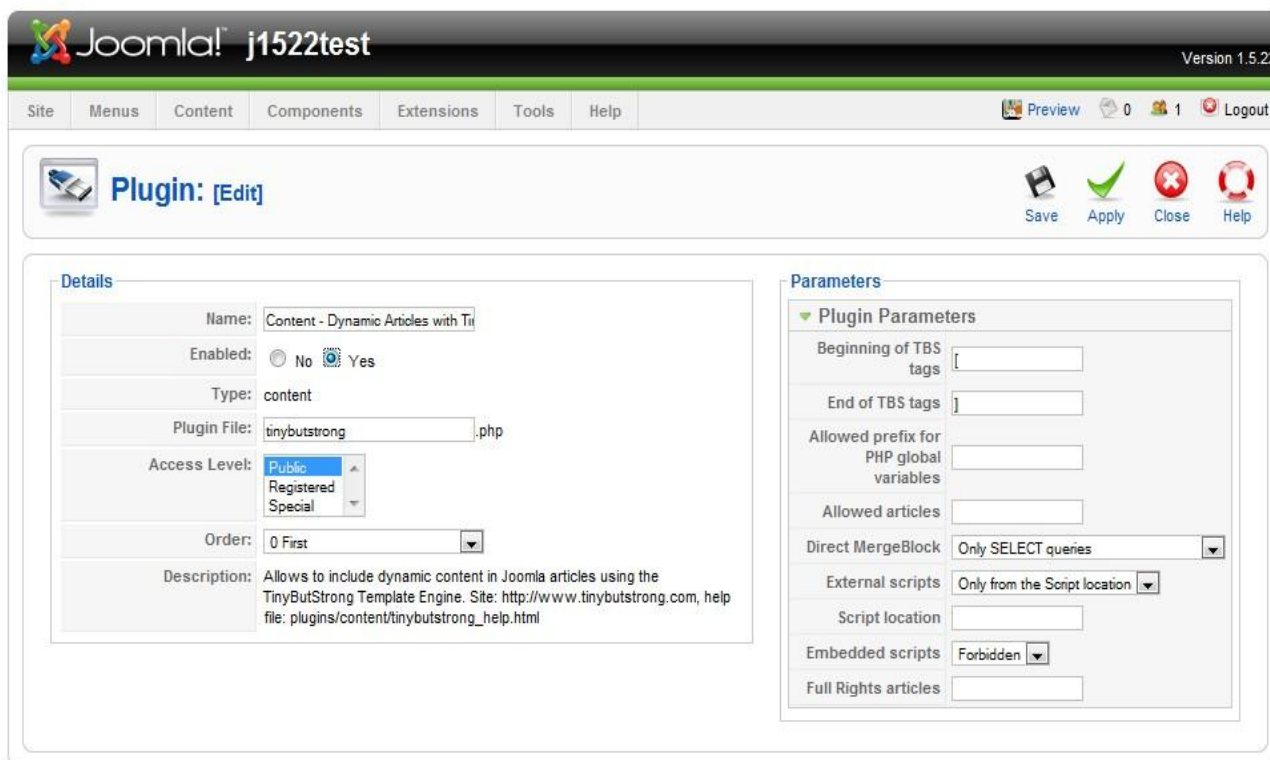


Illustration 1: Enabling the TinyButStrong plugin

## Data source

The data for the first two reports in this article is taken from the table jos\_content in the Joomla! database. Columns used in the examples are set out in the table below:

Column name	Sample content	Comment
id	1	primary key for this table
title	Welcome to Joomla!	
sectionid	1	key for jos_sections table; NULL if uncategorised
catid	1	key for jos_categories table; NULL if uncategorised
modified	2008-08-12 10:00:00	date and time last modified
hits	92	number of times article has been read

Please note that the column names are all in lower case.

### Report 1 – How many times has each article been viewed?

For this report, we need the fields “title” and “hits”. A SQL command to retrieve this information

would be:

```
SELECT title,hits FROM jos_content
```

This data would naturally be presented in a two-column table. Illustration 2 Shows the creation of a table with JCE. Illustration 3 shows the article with TBS features added.

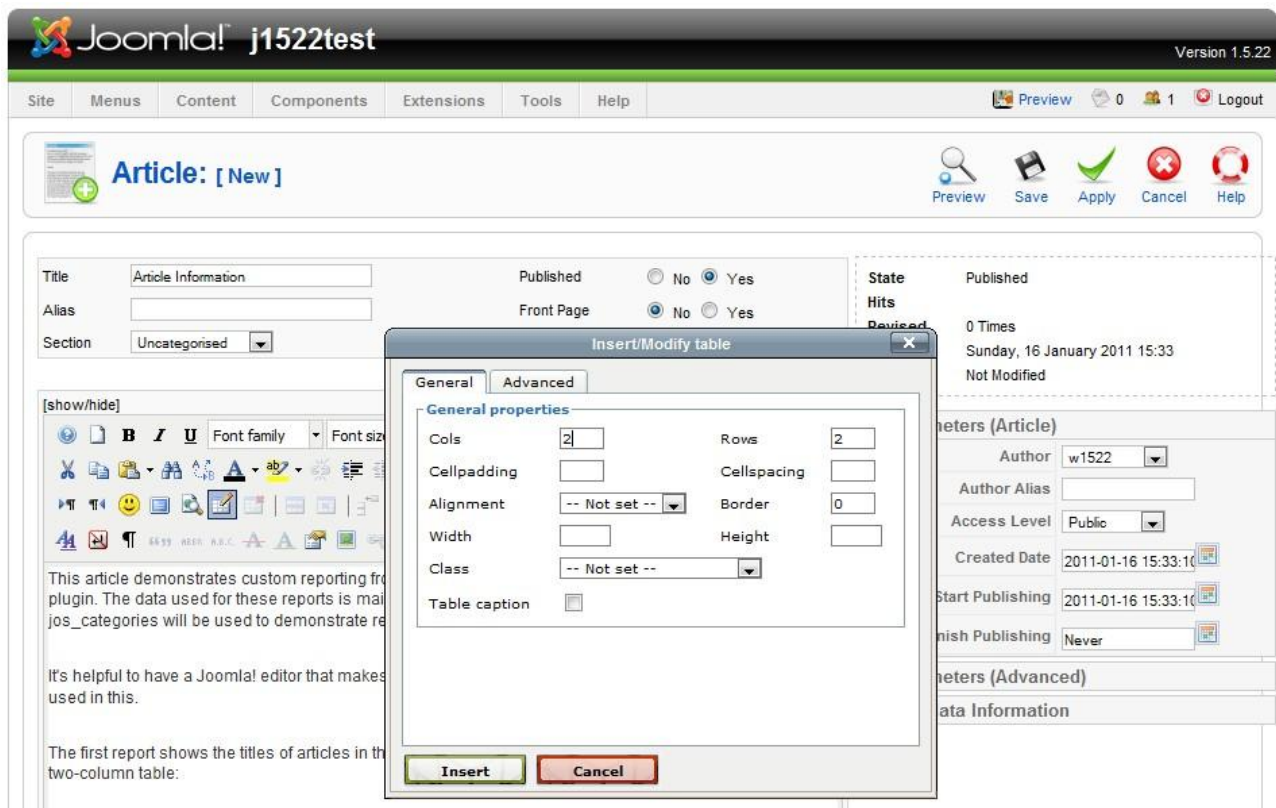


Illustration 2: Creating a two column table

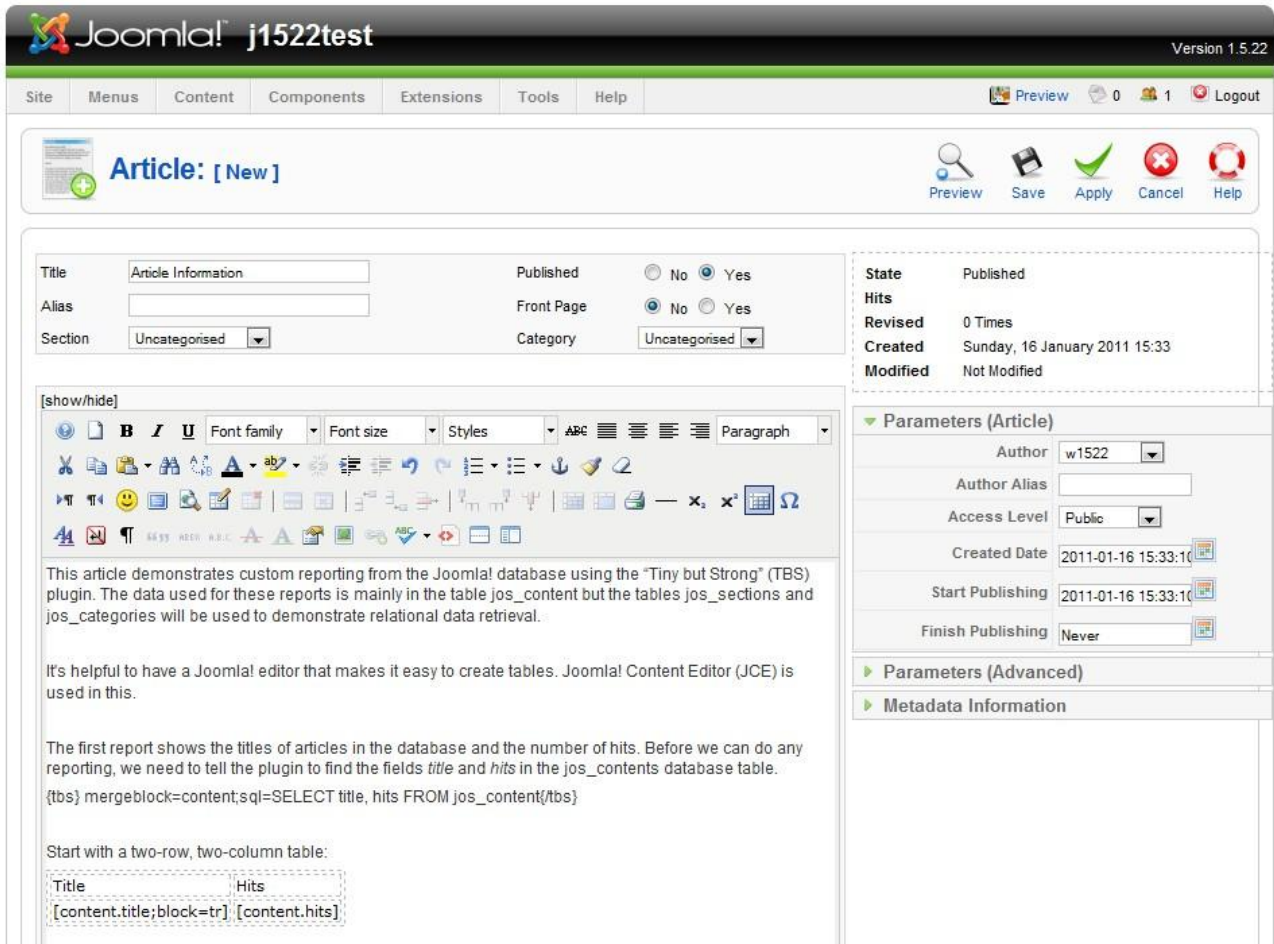


Illustration 3: TBS elements added to the article

The section

```
{tbs} mergeblock=content;sql=SELECT title, hits FROM jos_content
{/tbs}
```

includes the SQL statement shown earlier. The “mergeblock=content” section associates the output from the SQL statement with the identifier “content” in the template that follows. In the table, “Title” and “Hits” are normal text but the sections in [square brackets] are templates that will be replaced by the output from the SQL statement.

```
[content.title;block=tr]
```

inserts the value of “title” retrieved from the database by the mergeblock “content” into the cell. The “block=tr” section causes the inserted values to repeat the block of HTML bounded by “<tr>” and “</tr>” tags as many times as needed. In the HTML below, the section highlighted will be repeated for every record created by the SQL in the “mergeblock” section.

```
<table border="0">
  <tbody>
    <tr>
      <td><strong>Title</strong></td>
      <td><strong>Hits</strong></td>
    </tr>
    <tr>
      <td>[content.title;block=tr]</td>
```

```
<td>[content.hits]</td>
```

```
</tr>
```

```
</tbody>
```

```
</table>
```

It is not necessary to repeat the “block=tr” section on any other element within the designated tag pair. Although “block=tr” is a common way to use TBS, other tag patterns can be used. These will be explored in a later article.

If we now save the article, we can check the output. First, though, we have to tell TBS that this article is allowed to issue TBS commands.

The screenshot shows the Joomla! Article Manager interface. At the top, there is a navigation menu with options like Site, Menus, Content, Components, Extensions, Tools, and Help. Below this is a toolbar with icons for Unarchive, Archive, Publish, Unpublish, Move, Copy, Trash, Edit, New, Parameters, and Help. A message bar indicates 'Successfully Saved Article'. Below the message bar is a filter section with a 'Filter:' input, 'Go' and 'Reset' buttons, and dropdown menus for Section, Category, Author, and State. The main content is a table of articles with columns: #, Title, Published, Front Page, Order, Access Level, Section, Category, Author, Date, Hits, and ID. The first row is highlighted, and the ID '46' in the rightmost column is circled in red.

#	Title	Published	Front Page	Order	Access Level	Section	Category	Author	Date	Hits	ID
1	Article Information			1	Public			w1522	16.01.11	0	46
2	Example Pages and Menu Links			2	Public				12.08.08	44	43
3	What's New in 1.5?			1	Public	About Joomla!	The CMS		11.08.08	92	22
4	Joomla! Overview			2	Public	About Joomla!	The CMS		09.08.08	151	19
5	Extensions			3	Public	About Joomla!	The CMS		11.08.08	103	26
6	Joomla! Features			4	Public	About Joomla!	The CMS		08.08.08	59	18
7	Content Layouts			5	Public	About Joomla!	The CMS		12.08.08	70	24
8	Joomla! Facts			1	Public	About Joomla!	The Community		09.08.08	50	21
9	The Joomla! Community			2	Public	About Joomla!	The Community		12.08.08	52	27
10	Support and Documentation			1	Public	About Joomla!	The Project		09.08.08	6	20
11	Joomla! License Guidelines			2	Public	About Joomla!	The Project		20.08.08	100	5
12	Platforms and Open Standards			3	Public	About Joomla!	The Project		11.08.08	11	23
13	Where did the Installers go?			1	Public	FAQs	Current Users		10.08.08	4	36

Illustration 4: Find the article ID in the right hand column

The article just created has the title “Article Information” with ID 46 in the right hand column. This number must be inserted in the “Allowed Articles” section of the Plugin Manager page for TBS as seen in Illustration 1. The article is added to the “Key Concepts” menu so that it can be displayed. The result is shown in Illustration 5. Note that Illustration 5 shows the PDF icon. This should be turned off as noted earlier.

**Main Menu**

- [Home](#)
- [Joomla! Overview](#)
- [Joomla! License](#)
- [More about Joomla!](#)
- [FAQ](#)
- [The News](#)
- [Web Links](#)
- [News Feeds](#)

**Key Concepts**

- [Extensions](#)
- [Content Layouts](#)
- [Example Pages](#)
- [Custom Reporting](#)

**Article Information**

Written by w1522

Sunday, 16 January 2011 15:33

This article demonstrates custom reporting from the Joomla! database using the "Tiny but Strong" (TBS) plugin. The data used for these reports is mainly in the table jos\_content but the tables jos\_sections and jos\_categories will be used to demonstrate relational data retrieval.

It's helpful to have a Joomla! editor that makes it easy to create tables. Joomla! Content Editor (JCE) is used in this.

The first report shows the titles of articles in the database and the number of hits. Before we can do any reporting, we need to tell the plugin to find the fields *title* and *hits* in the jos\_contents database table.

Start with a two-row, two-column table:

Title	Hits
Welcome to Joomla!	92
Newsflash 1	1
Newsflash 2	0
Newsflash 3	1
Joomla! License Guidelines	100
We are Volunteers	54
Millions of Smiles	23
How do I localise Joomla! to my language?	10
How do I upgrade to Joomla! 1.5 ?	14
Why does Joomla! 1.5 use UTF-8 encoding?	29
What happened to the locale setting?	11
What is the FTP layer for?	23
Can Joomla! 1.5 operate with PHP Safe Mode On?	8
Only one edit window! How do I create "Read more..."?	20
My MySQL database does not support UTF-8. Do I have a problem?	9
Joomla! Features	59
Joomla! Overview	151

*Illustration 5: First output from TBS*

It might be more helpful just to show the ten most popular articles. The SQL `SELECT title,hits FROM jos_content ORDER BY hits DESC LIMIT 0, 10` will do this. Illustration 6 demonstrates what the HTML created by JCE looks like, clarifying the effect of repeating the `<tr> </tr>` block in which "block=tr" is embedded. The output of the article is shown in Illustration 7.

Now let's move on to reports in which the data elements require formatting.

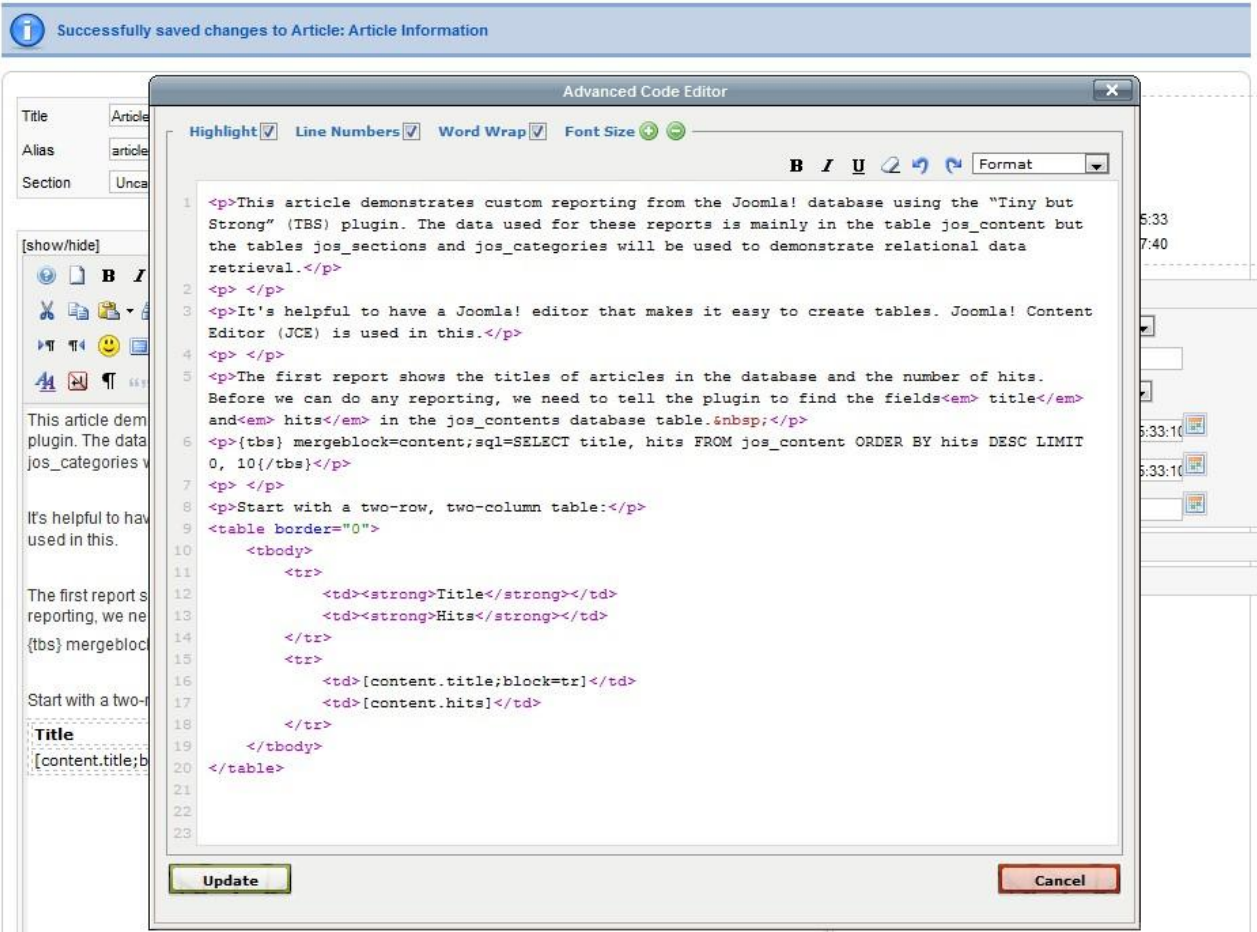


Illustration 6: HTML code for table ordered by descending hits

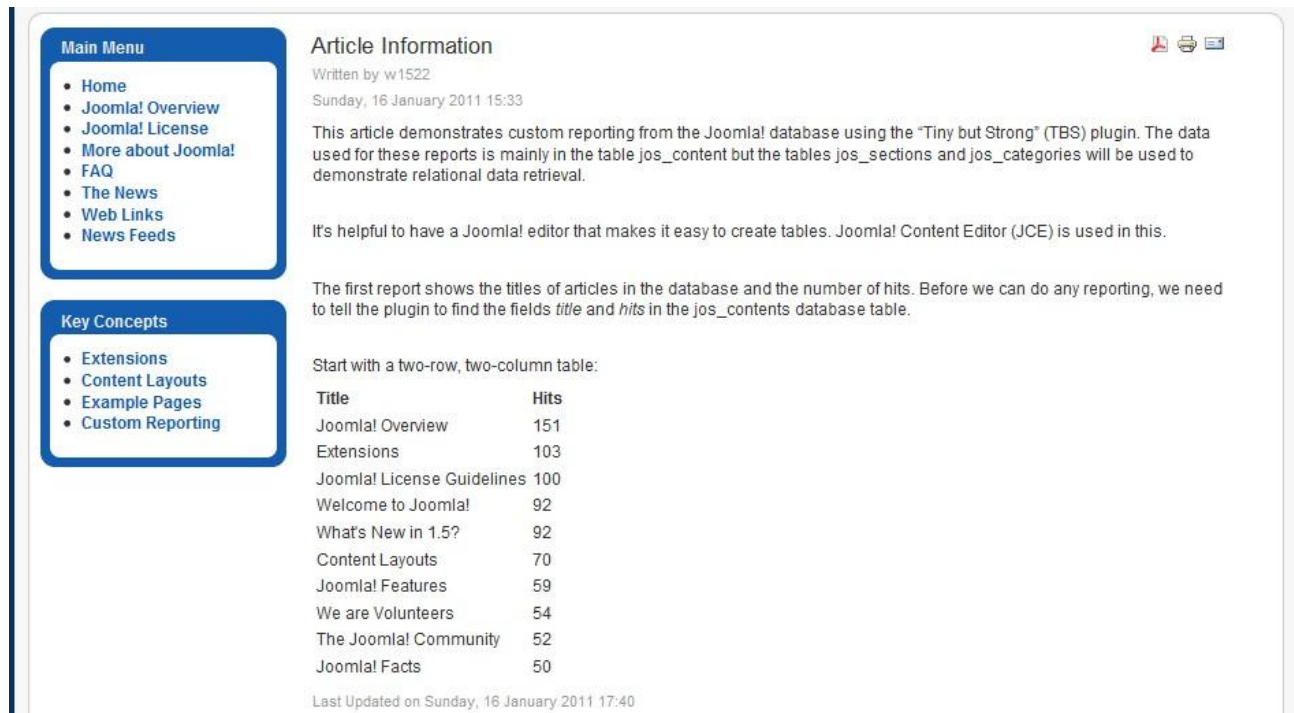


Illustration 7: Table ordered by descending hits

## Report 2 – when were the articles last modified?

For this report, we need the “title” and “modified” columns from the data table.

```
SELECT title, hits, modified FROM jos_content ORDER BY modified
DESC LIMIT 0, 10
```

The column “hits” isn't needed in this report but it is there to demonstrate that extracting too many columns won't crash the plugin. To make the value of “modified” useful, it must be formatted appropriately. The TBS data element

```
[dateinfo.modified;frm=dxx mmm yyyy]
```

will show dates in a style such as “28<sup>th</sup> Feb 2012”. For a complete list of date and time formats, see the TBS manual.

The screenshot shows the Joomla! Content Editor (JCE) interface. The main text area contains a custom report with the following content:

It's helpful to have a Joomla! editor that makes it easy to create tables. Joomla! Content Editor (JCE) is used in this.

The first report shows the titles of articles in the database and the number of hits. Before we can do any reporting, we need to tell the plugin to find the fields *title* and *hits* in the *jos\_contents* database table.

```
{tbs} mergeblock=content;sql=SELECT title, hits FROM jos_content ORDER BY hits DESC LIMIT 0, 10{/tbs}
```

Start with a two-row, two-column table:

Title	Hits
[content.title;block=tr]	[content.hits]

When were the articles written? There are two relevant fields: *created* and *modified*. In the sample data, these are identical but in the real world, “modified” is likely to be the more useful. As this is a date, a format must be provided. The format strings are set out in the TBS manual - page 16 in the version current in Jan 2011.

```
{tbs} mergeblock=dateinfo;sql=SELECT title, hits, modified FROM jos_content ORDER BY modified
DESC LIMIT 0, 10{/tbs}
```

Title	Date last changed
[dateinfo.title;block=tr]	[[dateinfo.modified;frm=dxx mmm yyyy]]

End of custom report

Path: p Words: 211

On the right side, the article parameters are visible, including Author (w1522), Author Alias, Access Level (Public), Created Date (2011-01-16 15:33:10), Start Publishing (2011-01-16 15:33:10), and Finish Publishing (Never).

Illustration 8: Formatting a date

When were the articles written? There are two relevant fields: *created* and *modified*. In the sample data, these are identical but in the real world, “modified” is likely to be the more useful. As this is a date, a format must be provided. The format strings are set out in the TBS manual - page 16 in the version current in Jan 2011.

Title	Date last changed
Article Information	17th Jan 2011
Joomla! License Guidelines	20th Aug 2008
Content Layouts	12th Aug 2008
The Joomla! Community	12th Aug 2008
Welcome to Joomla!	12th Aug 2008
Example Pages and Menu Links	12th Aug 2008
Newsflash 4	12th Aug 2008
Newsflash 5	12th Aug 2008
What's New in 1.5?	11th Aug 2008
I installed with my own language, but the Back-end is still in English	11th Aug 2008

Illustration 9: Effect of formatting a date



Illustration 9 Shows the effect of formatting a date.

### **Report 3 – to what sections and categories do the reports belong?**

The next report requires more complex SQL but does not change the way TBS is used. The table jos\_content contains columns “sectionid” and “catid”. A report could easily be produced listing sectionid and catid but these would be numbers that would then have to be looked up in the section manager and category manager pages visible from the back-end. It is much more sensible to use the tables jos\_sections and jos\_categories to look up the information while creating the report.

The columns from table jos\_section used in the examples are set out in the table below:

Column name	Sample content	Comment
id	1	primary key for this table
title	News	

The jos\_categories table is similar in structure:

Column name	Sample content	Comment
id	1	primary key for this table
title	Latest	

As with the jos\_content table, there are other columns that are not used in the examples.

Suitable SQL to create the information we want is:

```
SELECT content.title, hits, modified, sec.title AS section,
cat.title AS category FROM jos_content AS content
LEFT JOIN jos_sections AS sec ON sectionid = sec.id
LEFT JOIN jos_categories AS cat ON catid = cat.id
ORDER BY modified DESC
LIMIT 0 , 10
```

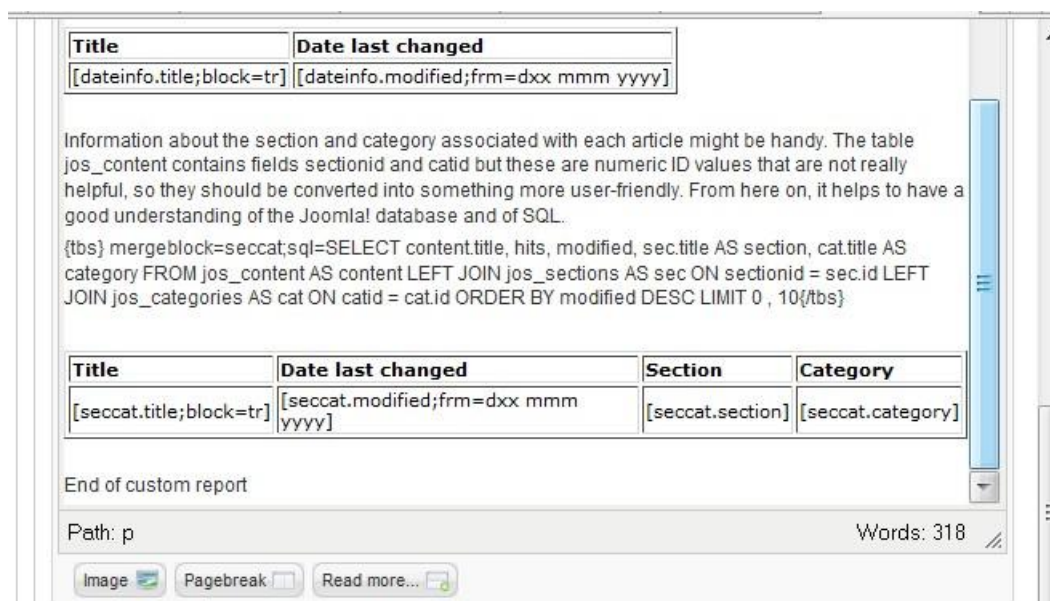


Illustration 10: Adding Section and Category information

Information about the section and category associated with each article might be handy. The table jos\_content contains fields sectionid and catid but these are numeric ID values that are not really helpful, so they should be converted into something more user-friendly. From here on, it helps to have a good understanding of the Joomla! database and of SQL.

Title	Date last changed	Section	Category
Article Information	1st Feb 2011		
Joomla! License Guidelines	20th Aug 2008	About Joomla!	The Project
Content Layouts	12th Aug 2008	About Joomla!	The CMS
The Joomla! Community	12th Aug 2008	About Joomla!	The Community
Welcome to Joomla!	12th Aug 2008	News	Latest
Example Pages and Menu Links	12th Aug 2008		
Newsflash 4	12th Aug 2008	News	Newsflash
Newsflash 5	12th Aug 2008	News	Newsflash
What's New in 1.5?	11th Aug 2008	About Joomla!	The CMS
I installed with my own language, but the Back-end is still in English	11th Aug 2008	FAQs	Languages

End of custom report

*Illustration 11: Section and Category information on a web page*

Illustration 10 shows the SQL incorporated in a Joomla! Article and Illustration 11 shows the output from this. Two articles, however, have no section or category shown, which is not possible in Joomla! The reason is that the values corresponding to “Uncategorised” are mapped within Joomla! rather than by entries in the jos\_sections and jos\_categories tables. TBS can cope with this by using the “ifempty” parameter.

Information about the section and category associated with each article might be handy. The table jos\_content contains fields sectionid and catid but these are numeric ID values that are not really helpful, so they should be converted into something more user-friendly. From here on, it helps to have a good understanding of the Joomla! database and of SQL.

```
{tbs} mergeblock=seccat,seccat1;sql=SELECT content.title, hits, modified, sec.title AS section, cat.title AS category FROM jos_content AS content LEFT JOIN jos_sections AS sec ON sectionid = sec.id LEFT JOIN jos_categories AS cat ON catid = cat.id ORDER BY modified DESC LIMIT 0 , 10{/tbs}
```

Title	Date last changed	Section	Category
[seccat.title;block=tr]	[seccat.modified;frm=dxx mmm yyyy]	[seccat.section]	[seccat.category]

As above, but with empty values replaced with 'uncat.'

Title	Date last changed	Section	Category
[seccat1.title;block=tr]	[seccat1.modified;frm=dxx mmm yyyy]	[seccat1.section;ifempty=uncat.]	[seccat1.category;ifempty=uncat.]

End of custom report

*Illustration 12: Using the "ifempty" parameter*

In Illustration 12 the parameter ifempty=uncat . sets the displayed value to “uncat.” to make it deliberately different from “Uncategorised” as would be reported by Joomla! itself. Illustration 13 shows the effect of this on the output.

Careful readers may note that the {tbs} block has changed slightly:

```
{tbs} mergeblock=seccat,seccat1;sql=...{/tbs}
```

with the mergeblock creating two output blocks: seccat and seccat1. This reduces the number of

queries made on the database. If the query were a complex one against a large database, this could usefully reduce the load on the database server.

Welcome to Joomla!	12th Aug 2008	News	Latest
Example Pages and Menu Links	12th Aug 2008		
Newsflash 4	12th Aug 2008	News	Newsflash
Newsflash 5	12th Aug 2008	News	Newsflash
What's New in 1.5?	11th Aug 2008	About Joomla!	The CMS
I installed with my own language, but the Back-end is still in English	11th Aug 2008	FAQs	Languages

As above, but with empty values replaced with 'uncat.'

Title	Date last changed	Section	Category
Article Information	1st Feb 2011	uncat.	uncat.
Joomla! License Guidelines	20th Aug 2008	About Joomla!	The Project
Content Layouts	12th Aug 2008	About Joomla!	The CMS
The Joomla! Community	12th Aug 2008	About Joomla!	The Community
Welcome to Joomla!	12th Aug 2008	News	Latest
Example Pages and Menu Links	12th Aug 2008	uncat.	uncat.
Newsflash 4	12th Aug 2008	News	Newsflash
Newsflash 5	12th Aug 2008	News	Newsflash
What's New in 1.5?	11th Aug 2008	About Joomla!	The CMS
I installed with my own language, but the Back-end is still in English	11th Aug 2008	FAQs	Languages

End of custom report

*Illustration 13: effect of using the "ifempty" parameter*

## Conclusion

This note has shown how TBS can be used to incorporate data from the Joomla! database into web pages. As so often with well thought out software, it is possible to gain great benefit with very little effort. The next part of this short series of articles will look at security issues. A further article will move on from formatting the data displayed in the table to look at formatting the table itself.

## Acknowledgement

Without the author and maintainer of TBS, "skrol29", none of this would be possible. It is clear that TBS is both very well designed and very well implemented. Thank you, skrol29 and your associates.

*CheshireCat*

*1 Jul 2011*

## Appendix 1

### HTML text for the examples

The HTML that follows can be copied into a Joomla! article. If using JCE, create an empty article, click on the “code” icon to open the HTML editing window and then paste the HTML code below into the HTML editing window. Click the “Update” button and then save your article. Add the article number to the TBS plugin's list of allowed articles and create a suitable menu item to display the article. You should then be able to see web pages very similar to those presented in the main section of the article.

```
<p>This article demonstrates custom reporting from the Joomla! database using the “TinyButStrong” (TBS) plugin. The data used for these reports is mainly in the table jos_content but the tables jos_sections and jos_categories will be used to demonstrate relational data retrieval.</p>
```

```
<p> </p>
```

```
<p>It's helpful to have a Joomla! editor that makes it easy to create tables. Joomla! Content Editor (JCE) is used in this.</p>
```

```
<p> </p>
```

```
<p>The first report shows the titles of articles in the database and the number of hits. Before we can do any reporting, we need to tell the plugin to find the fields<em> title</em> and<em> hits</em> in the jos_contents database table.&nbsp;</p>
```

```
<p>{tbs} mergeblock=content;sql=SELECT title, hits FROM jos_content ORDER BY hits DESC LIMIT 0, 10{/tbs}</p>
```

```
<p> </p>
```

```
<p>Start with a two-row, two-column table:</p>
```

```
<table border="0">
  <tbody>
    <tr>
      <td><strong>Title</strong></td>
      <td><strong>Hits</strong></td>
    </tr>
    <tr>
      <td>[content.title;block=tr]</td>
      <td>[content.hits]</td>
    </tr>
  </tbody>
</table>
```

```
<p> </p>
```

```
<p>When were the articles written? There are two relevant fields: created and modified. In the sample data, these are identical but
```

in the real world, "modified" is likely to be the more useful. As this is a date, a format must be provided. The format strings are set out in the TBS manual - page 16 in the version current in Jan 2011.</p>

```
<p>{tbs} mergeblock=dateinfo;sql=SELECT title, hits, modified FROM jos_content ORDER BY modified DESC LIMIT 0, 10{/tbs}</p>
```

```
<p> </p>
```

```
<table border="1">
```

```
  <tbody>
```

```
    <tr>
```

```
      <td><strong>Title</strong></td>
```

```
      <td><strong>Date last changed</strong></td>
```

```
    </tr>
```

```
    <tr>
```

```
      <td>[dateinfo.title;block=tr]</td>
```

```
      <td>[dateinfo.modified;frm=dxx mmm yyyy]</td>
```

```
    </tr>
```

```
  </tbody>
```

```
</table>
```

```
<p> </p>
```

<p>Information about the section and category associated with each article might be handy. The table jos\_content contains fields sectionid and catid:</p>

```
<p>{tbs} mergeblock=secidcatid;sql=SELECT title, hits, modified, sectionid, catid FROM jos_content ORDER BY modified DESC LIMIT 0, 10{/tbs}</p>
```

```
<p> </p>
```

```
<table border="1">
```

```
  <tbody>
```

```
    <tr>
```

```
      <td><strong>Title</strong></td>
```

```
      <td><strong>Date last changed</strong></td>
```

```
      <td><strong>Section ID<br /></strong></td>
```

```
      <td><strong>Category ID</strong></td>
```

```
    </tr>
```

```
    <tr>
```

```
      <td>[secidcatid.title;block=tr]</td>
```

```
      <td>[secidcatid.modified;frm=dxx mmm yyyy]</td>
```

```
      <td>[secidcatid.sectionid]</td>
```

```

        <td>[secatid.catid]</td>
    </tr>
</tbody>
</table>

```

```
<p> </p>
```

<p>The numeric ID values are not  really helpful, so they should be converted into something more user-friendly.  From here on, it helps to have a good understanding of the Joomla! database and of SQL.</p>

```
<p>{tbs} mergeblock=seccat,seccat1,seccat2;sql=SELECT
content.title, hits, modified, sec.title AS section, cat.title AS
category FROM jos_content AS content LEFT JOIN jos_sections AS sec
ON sectionid = sec.id LEFT JOIN jos_categories AS cat ON catid =
cat.id ORDER BY modified DESC LIMIT 0 , 10{/tbs}</p>
```

```
<p> </p>
```

```
<table border="1">
  <tbody>
    <tr>
      <td><strong>Title</strong></td>
      <td><strong>Date last changed</strong></td>
      <td><strong>Section<br /></strong></td>
      <td><strong>Category <br /></strong></td>
    </tr>
    <tr>
      <td>[seccat.title;block=tr]</td>
      <td>[seccat.modified;frm=dxx mmm yyyy]</td>
      <td>[seccat.section]</td>
      <td>[seccat.category]</td>
    </tr>
  </tbody>
</table>
```

```
<p> </p>
```

<p>As above, but with empty values replaced with 'uncat.'</p>

```
<table border="1">
  <tbody>
    <tr>
      <td><strong>Title</strong></td>
      <td><strong>Date last changed</strong></td>
      <td><strong>Section<br /></strong></td>
```

```

        <td><strong>Category <br /></strong></td>
</tr>
<tr>
    <td>[seccat1.title;block=tr]</td>
    <td>[seccat1.modified;frm=dxx mmm yyyy]</td>
    <td>[seccat1.section;ifempty=uncat.]</td>
    <td>[seccat1.category;ifempty=uncat.]</td>
</tr>
</tbody>
</table>
<p> </p>
<p>As above, but with time added</p>
<table border="1">
    <tbody>
        <tr>
            <td><strong>Title</strong></td>
            <td><strong>Date last changed</strong></td>
            <td><strong>Time of change</strong></td>
            <td><strong>Section<br /></strong></td>
            <td><strong>Category <br /></strong></td>
        </tr>
        <tr>
            <td>[seccat2.title;block=tr]</td>
            <td>[seccat2.modified;frm=dxx mmm yyyy]</td>
            <td>
                <p>[seccat2.modified;frm=hh:nn]</p>
            </td>
            <td>[seccat2.section;ifempty=uncat.]</td>
            <td>[seccat2.category;ifempty=uncat.]</td>
        </tr>
    </tbody>
</table>
<p>End of custom report</p>

```