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Introduction

ETS is a template system written with PHP that enables you to transform a set of data to any type of document.

For example, ETS can transform a list of product descriptions retrieved from a database to a HTML page. It can also construct SQL statements, ASCII data, XML documents...

ETS provides 2 functions to match a set of data with templates:

- sprintt which returns the built template as a string,
- printt which prints it out.

ETS supplies:

- array management,
- various conditional elements,
- access to any level in the data tree from any level in the template,
- data formatting,
- size reducing,
- integrated debug messages.

ETS works with 2 elements: the data tree and templates. The data tree contains every data that will be available. Templates define the way the data tree will be presented. You can compare it to a XML document transformed with a XSLT template: it's exactly the same concept.

ETS can manage recursive templates, allows a complete reshuffle of the template with exactly the same data tree, is extremely valuable when working with database because of the implicit use of templates...

... It's a powerful tool that will help you efficiently to build documents.

PHP functions

ETS provides 2 functions. Here are their prototypes:

```
void printt(mixed datatree, mixed containers [, string entry])
    Output a built template
```

```
string sprintt(mixed datatree, mixed containers [, string entry])
    Return a built template
```

datatree can be an object, an array of objects or a NULL value. The object must be organized to store scalar values in object properties and lists in arrays. An object can contain children objects. NULL value is used to build a template without any data.

containers can be an array or a string. If it's an array, each element will be considered as a container name. If it's a string, it may contain one container name or a list of container names separated by commas.

entry defines the main template defined in containers. It's "main" by default. It's useful when you want to define several independent sets of templates in the same container.

Quick reference

The following table presents elements provided by ETS.

Element	Description	
{name}	Places an outer template or the value of a variable	
{variable:template}	Places an outer template with a different name	
{mask:name} {/mask}	Defines a template and, if inner, places it	
{set:variable} {/set}	Places a content when a variable is set (not missing)	
{set:variable:value} {/set}	Places a content when a variable has a specific value	
{mis:variable} {/mis}	Places a content when a variable is missing	
{mis:variable:value} {/mis}	Places a content when a variable has not a specific value or is missing	
{php} {/php}	Places a content which will be parsed as PHP code	
{const:template}	Places an outer template	
{if:test} {/if}	Places a content if a test is TRUE	
{choose} {/choose}	Provides multiple conditions in conjunction with whentest and else elements	
{when:test} {/when}	Places a content if a test is TRUE so disables other when-test or else siblings	
{else} {/else}	Places a content if all when-test or when-value siblings are FALSE	
{choose:variable} {/choose}	Provides multiple conditions in conjunction with when- value and else elements	
{when:value} {/when}	Places a content if the variable of the choose parent has the value of this element so disables other when-value or else siblings	
{call:template} {/call}	Places an outer template with arguments	
{arg:name} {/arg}	Defines an argument of a call element	
{repeat:n} {/repeat}	Places a content several times	
{include:container}	Includes outer templates of a container	
{insert:container}	Places the content of a container as text	
{eval:container}	Places the content of a container as a template part	
{safe:container}	Places the content of a container as a template part with restrictions	
{reduce:value}	Defines a size reducing behaviour	
{* *}	Defines a comment section	
{# #}	Defines a section where the text is not parsed	

Tutorial

You will discover in this tutorial many examples that gradually introduce you to essentials of ETS.

1. Scalar variables

Consider this data tree which contains general elements of a HTML page:

```
$page->title = 'Home page';
$page->lastmodified = 'Thursday, January 23, 2003';
```

This template file, ets.tpl, contains the presentation of these data:

If you run printt(\$page, 'ets.tpl'); you will get:

What happened?

ETS found the main template defined between tags {mask:main} and {/mask},

ETS found the tag {title} twice and the tag {lastmodified} in main,

ETS replaced {title} with the value of \$page->title and {lastmodified} with the value of \$page->lastmodified,

ETS printed out the result.

Why did it happen?

The first level of the data tree, the root, corresponds to the first level of the template tree, the main template. In this example, the object \$page corresponds to the template main. Then, every property of \$page can be placed in the template main. In this example, the property title corresponds to the tag {title} and lastmodified to {lastmodified}.

2. Objects

We now add partner information to the previous data tree and group them in an object:

```
$page->title = 'Home page';
$page->lastmodified = 'Thursday, January 23, 2003';

$page->partner->name = 'foobar.com';
$page->partner->id = 123;
```

The template file, ets.tpl, is modified to show these new data:

If you run printt(\$page, 'ets.tpl'); again, you will get now:

What happened?

. . .

ETS found the inner template partner between tags ${mask:partner}$ and ${/mask}$.

ETS replaced {name} with the value of \$page->partner->name and {id} with the value of \$page->partner->id.

. . .

Why did it happen?

When ETS detects a template in another one, it changes the current level then begins again the process for the new level.

In this example, it changes from \$page to \$page->partner for data and from main to partner for templates. Then, every property of \$page->partner are placed in the template partner. In this example, the property id corresponds to the tag {id} and name to {name}.

3. Arrays

We now want to add menu data to the previous data tree. If we apply the principle of our previous example, we can add these data like this:

```
$page->menul->url = "download.php";
$page->menul->label = "Downloads";
$page->menu2->url = "links.php";
$page->menu2->label = "Links";
```

and so, create two new templates in the main template.

There's a better way to do it.

Instead of two new objects, we create an array of objects:

```
$page->title = 'Home page';
$page->lastmodified = 'Thursday, January 23, 2003';

$page->partner->name = 'foobar.com';
$page->partner->id = 123;

$page->menu[1]->url = "download.php";
$page->menu[1]->label = "Downloads";
$page->menu[2]->url = "links.php";
$page->menu[2]->label = "Links";
```

Then we create one new template:

ETS will produce:

What happened?

. . .

ETS found the inner template menu between tags {mask:menu} and {/mask}.

For each element of the array menu, ETS replaced $\{url\}$ with the value of the property url and $\{label\}$ with label.

. . .

Why did it happen?

When ETS detects that a template corresponds to an array instead of an object, it does the same than for an object but for each element of this array then concatenates built templates.

4. Outer templates

We want now to print information about our partner at the bottom and at the top of the page. We don't add new data but just rearrange the template file like this:

```
{mask:main}
<html>
    <head>
          <title>{title}</title>
    </head>
    <body>
          {\rm h1>\{title}</{\rm h1>}
          <hr>>
          {partner}
          <hr>
          {mask:menu} <a href="{url}">{label} </a> {/mask}
          <div align="center">Last modified: {lastmodified}</div>
          {partner}
    </body>
</html>
{/mask}
{mask:partner}
<div>with our partner {name} ({id})</div>
{/mask}
```

ETS will produce:

What happened?

. . .

ETS found the tag {partner} twice.

ETS replaced {name} with the value of \$page->partner->name and {id} with the value of \$page->partner->id in the outer template partner.

ETS replaced {partner} by the built template partner.

. . .

Why did it happen?

When ETS detects that a tag corresponds to an object instead of a scalar variable, it looks for an outer template with the same name then does placements for each property of the object exactly like a inner template.

It works the same way when the corresponding variable is an array but the template is duplicated for each element of the array.

5. Constant elements

We want now to change the basic <hr> tag with a wonderful image we found on the web. We don't add new data but just rearrange again the template file like this:

```
{mask:main}
<html>
    <head>
         <title>{title}</title>
    </head>
    <body>
          <h1>{title}</h1>
          {const:separator}
          {partner}
          {const:separator}
          {mask:menu} <a href="{url}">{label} </a> {/mask}
          {const:separator}
          <div align="center">Last modified: {lastmodified}</div>
          {partner}
    </body>
</html>
{/mask}
{mask:partner}
<div>with our partner {name} ({id})</div>
{/mask}
{mask:separator}
<img src="separ.gif" width="400" height="5" border="0" alt=""><br>
{/mask}
```

ETS will produce:

What happened?

. . .

ETS found the tag {const:separator} three times.

ETS replaced each {const:separator} with the content of the outer template separator.

. . .

Why did it happen?

When ETS detects a constant element, it looks for an outer template with this name then replaces the constant element with the content of the template.

If the outer template contains tags, they are parsed at the same level and not at the next one. In this example, {title} would be replaced by "Home page" like others {title} tags of the template main.

6. Alternate tags

We want now to get two different templates with partner's data.

The template file is now:

```
{mask:main}
<html>
    <head><title>{title}</title></head>
    <body>
         {\rm h1>\{title}</{\rm h1>}
          <hr>>
          {partner:partner1}
          <hr>
          {mask:menu}<a href="{url}">{label}</a> {/mask}
          <div align="center">Last modified: {lastmodified}</div>
         {partner:partner2}
   </body>
</html>
{/mask}
{mask:partner1}
with our partner {name}
{/mask}
{mask:partner2}
<div>with our partner {name} ({id})</div>
{/mask}
```

ETS will produce:

What happened?

. . .

ETS found the alternate tag {partner:partner1}.

ETS replaced {name} with the value of \$page->partner->name in the template partner1.

ETS replaced {partner:partner1} with the built template partner1.

. . .

Why did it happen?

When ETS finds an alternate tag (two names separated by a colon), it changes the active level using the first name then uses the outer template defined by the second name. Next, every property of the new level are placed. In this example, the property name corresponds to the tag {name}.

7. PHP elements

Imagine now that we want in the second template of partner, the name to be in capitals.

Here is our new again template file:

```
{mask:main}
<html>
   <head><title>{title}</title></head>
   <body>
         {\rm h1>\{title}</{\rm h1>}
         <hr>>
         {partner:partner1}
         <hr>
         {mask:menu}<a href="{url}">{label}</a> {/mask}
         <div align="center">Last modified: {lastmodified}</div>
         {partner:partner2}
   </body>
</html>
{/mask}
{mask:partner1}
with our partner {php}strtoupper({name}){/php}
{/mask}
{mask:partner2}
<div>with our partner {name} ({id})</div>
{/mask}
```

ETS will produce:

What happened?

. . .

ETS found the PHP element defined between tags {php} and {/php}.

After placements in it, ETS places the result of the PHP code contained in the element.

. . .

Why did it happen?

When ETS finds a PHP element, it calls PHP to parse its content and places the result. The PHP code must be written to stand for a scalar value. It is not recommended to use PHP elements to do something else than formatting data to preserve the separation logic.

8. Missing values

We want the template to be valid even if, for some specific contexts, there is no partner information to print out.

Here is the data tree, without partner's data.

```
$page->title = 'Home page';
$page->lastmodified = 'Thursday, January 23, 2003';

$page->menu[1]->url = "download.php";
$page->menu[1]->label = "Downloads";

$page->menu[2]->url = "links.php";

$page->menu[2]->label = "Links";
```

We don't modify the template file:

```
{mask:main}
<html>
    <head><title>{title}</title></head>
    <body>
         <h1>{title}</h1>
         <hr>>
         {partner:partner1}
         <hr>>
         {mask:menu}<a href="{url}">{label}</a> {/mask}
         <div align="center">Last modified: {lastmodified}</div>
         {partner:partner2}
    </body>
</html>
{/mask}
{mask:partner1}
with our partner {php}strtoupper({name}){/php}
{/mask}
{mask:partner2}
<div>with our partner {name} ({id})</div>
{/mask}
```

ETS will produce:

What happened?

. .

ETS found the tag {partner:partner1}.

ETS didn't find partner in the data tree to match with the template so deleted the tag.

. . .

Why did it happen?

When ETS finds a simple tag, an alternate tag or an inner template which doesn't match with any data of the data tree, it deletes the element.

9. Simple conditional elements

We want now to print out a message when partner is missing.

We keep the same data tree, but modify the template file:

```
{mask:main}
<html>
   <head><title>{title}</title></head>
   <body>
         <h1>{title}</h1>
         <hr>>
         {partner:partner1}{mis:partner}<b>No partner</b>{/mis}
         {mask:menu}<a href="{url}">{label}</a> {/mask}
         <div align="center">Last modified: {lastmodified}</div>
         {partner:partner2}
   </body>
</html>
{/mask}
{mask:partner1}
with our partner {php}strtoupper({name}){/php}
{/mask}
{mask:partner2}
<div>with our partner {name} ({id})</div>
{/mask}
```

ETS will print out:

What happened?

. . .

ETS found the template partner between tags {mis:partner} and {/mis}.

ETS didn't find partner in the current level of the data tree so placed the content of this element.

. . .

Why did it happen?

When ETS finds a missing element, it places it if the corresponding data is not set, is null or doesn't exist.

The set element {set:partner} ... {/set} would be placed if partner was not missing. ETS also provides {mis:variable:value} ... {/mis} which is placed when variable is different to value or variable is missing and {set:variable:value} ... {/set} which is placed when variable has a value of value.

10. Choose-variable elements

We want now to specify a style for each known partner.

Partner's data are back:

```
$page->title = 'Home page';
$page->lastmodified = 'Thursday, January 23, 2003';

$page->partner->name = 'foobar.com';
$page->partner->id = 123;
```

Here is the new template file:

```
{mask:main}
<html>
    <head><title>{title}</title></head>
    <style>
    {mask:partner}
          {choose:id}
                 {when:120} body { color:red; } {/when}
{when:123} body { color:blue; } {/when}
                 {else} body { color:black; } {/else}
           {/choose}
    {/mask}
    </style>
    <body>
          <h1>{title}</h1>
          {mask:partner}with our partner {name}{/mask}
          <div align="center">Last modified: {lastmodified}</div>
    </body>
</html>
{/mask}
```

ETS will produce:

```
<html>
<head><title>Home page</title></head>
<style>
body { color:blue; }
</style>
<body>
<hl>Home page</hl>
<hr>

<hr>

<hr>
<hr>
<div align="center">Last modified: Thursday, January 23, 2003</div>
</body>
</html>
```

What happened?

. . .

ETS found the choose-variable element between tags $\{choose:id\}$ and $\{/choose\}$. ETS placed the content of the when-value element between tags $\{when:123\}$ and $\{/when\}$.

Why did it happen?

When ETS finds a choose-variable element, it places the content of the when-value element which corresponds to the value of the variable. If no when-value element corresponds, ETS places the else element.

11. Other conditional elements

ETS provides two other conditional elements.

If element

The if element {if:test} ... {/if} is used when you want to do more complex conditions. The part test of the tag {if:test} contains any valid PHP condition using simple tags.

Here is a valid if element:

```
{if: {id} > 99 and {name} != 'foobar.com'} ... {/if}
```

Simple choose element

The simple choose element {choose} ... {choose} is used when you've got to construct a condition sequence if-elseif-else.

Here is a valid simple choose element:

```
{choose}
    {when: {id} < 100} ... {/when}
    {when: {id} == 100} ... {/when}
    {else} ... {/else}
{/choose}</pre>
```

Note: these two element types are very useful in complex situations but there are twice slower than others conditional elements. So they should be used if simpler ones can't.

12. Call elements

Here is the extraction of a template file:

We want to use the same template with different data because the template is heavily used and supposed to often change.

And here is the new one, once the template is modified to used a template:

The two constructs will produce the same output. For example:

What happened?

. .

ETS found the call element between tags {call:td} and {/call}.

ETS built the outer template td using built arguments of the call element.

ETS replaced the call element by the built template td.

. . .

Why did it happen?

When ETS detects a call element, it places the called outer template then places argument elements of the call element.

If the call element hasn't any argument, you can use a constant element instead.

13. Path (part 1)

Menu data are now back and we want to trace the active partner when a visitor clicks our links.

Here is the data:

```
$page->title = 'Home page';
$page->lastmodified = 'Thursday, January 23, 2003';

$page->partner->name = 'foobar.com';
$page->partner->id = 123;

$page->menu[1]->url = "download.php";
$page->menu[1]->label = "Downloads";
$page->menu[2]->url = "links.php";
$page->menu[2]->label = "Links";
```

Here is the new template file:

ETS will produce:

```
<html>
    <head><title>Home page</title></head>
    <body>
        <h1>Home page</h1><hr>
            <a href="download.php?p=123">Downloads</a> <a href="links.php?p=123">Links</a><hr>
            <div align="center">Last modified: Thursday, January 23, 2003</div>
            </body>
            </html>
```

What happened?

. . .

ETS found the tag {//partner/id} in the outer template menu.

ETS replaced it with the value of \$page->partner->id.

. . .

Why did it happen?

When ETS finds an absolute path (a path that begins with and double slash) in a valid element, it starts again from the root of the data tree to find the corresponding property. In this example, ETS looks for \$page->partner->id.

ETS also manages relative paths. In part 10, you could use {choose:partner/id} ... {/choose} instead of {mask:partner} {choose:{id} ... {/choose} {/mask} in the main template to jump to the property id of the level partner of the current level.

Absolute and relative paths accepts also index to specify a particular element of an array. For example, {//nameA[3]/nameB} places nameB property of the fourth element of nameA.

You can also use system indexes _first and _last which represent first and last elements of the array.

Relative and absolutes paths are available for simple tags, alternate tags, template and simple conditional elements, but also for the test part of complex conditional elements.

14. Path (part 2)

Imagine finally you want to display label's partners based on an indexed array...

Here is the data:

```
$page->title = 'Path using ..';

$page->mypartners[0]->id = 0;

$page->mypartners[1]->id = 3;

$page->partners[1]->id = 1;

$page->partners[1]->label = 'foobar.com';

$page->partners[2]->id = 2;

$page->partners[2]->label = 'foo.bar';

$page->partners[3]->id = 3;

$page->partners[3]->label = 'foobar 1';
```

Here is the new template file:

ETS will produce:

```
<html>
    <head><title>Path using ..</title></head>
    <body>
        <hl>Path using ..</hl><hr>
        foobar.com
        foobar 1
        </body>
</html>
```

What happened?

. . .

ETS found the tag $\{../../id\}$ in the test part of the if element.

ETS replaced the tag with the value of the variable id of the current element of the array mypartners.

. . .

Why did it happen?

When ETS finds a parent element in a path, it goes back to the parent of the current template and retrieved associated level to define the new active level.

To bypass a template starting with //, you must use .. twice.

ETS creates numbers of elements when working with arrays: you can use _start, _previous, _next and _end to access respectively to the first, the previous, the next or the last element of the array which the current element belongs to. There's also _parent which is a alias for ...

Reference

You will found here the complete description of each element of ETS.

1. Simple tag element

Places an outer template or the value of a variable.

Syntax

{name}

Template tree

Number of occurrences	Unlimited
Parent elements	Test of if and when-test elements Any element aside from call, choose and choose-variable elements
Child elements	None

Rules

```
if the parent element is a test of a conditional element
     if the variable name is a string
          place the escaped string between double quotes
     else if the variable name is boolean
          place TRUE or FALSE
     else if the variable name is numeric
          place the value
     else if the variable is missing
          place NULL
     else
          disappear
else
     if the outer template name exists
          if the variable name is scalar
                 place the content of the template
           else if the variable name is an object
                 place the content of the template
                 change the current level to name
           else if the variable name is an array
                 for each element of the array
                       place the content of the template
                       change the current level to name
           else
                 disappear
     else
          if the variable name is scalar
                 place the value of this variable
          else
                 disappear
```

Remarks

FALSE values and empty strings stand for scalar value in a test of a conditional element, PHP element and evaluated elements and for missing elsewhere. NULL values, non-existing variables, empty arrays and empty objects are always missing.

Strings are placed with double quotes and are escaped to accept carriage returns and tabulations in PHP elements and evaluated part of elements. There are not otherwise.

This element accepts absolute and relative paths for name.

Examples with scalar variables

Template	PHP code	Result
{mask:main}{a}{/mask}	\$ets->a = 4;	4
{mask:main}{b}{/mask}	<pre>\$ets->b = NULL;</pre>	(none)

Examples with outer templates

Template	PHP code	Result
<pre>{mask:main}</pre>	<pre>\$ets->c = 1; \$ets->d = 2;</pre>	c with 2
<pre>{mask:main} {e} {/mask} {mask:e}e with {f}{/mask}</pre>	\$ets->e->f = 2;	e with 2
<pre>{mask:main} {e} {/mask} {mask:e}Content of e{/mask}</pre>	\$ets->a = 1;	(none)

Examples in tests

Template	PHP code	Result
{if: {a} == 4 }a == 4{/if}	\$ets->a = 4;	a == 4
{if: {a} }a is TRUE{/if}	\$ets->a = TRUE;	a is TRUE
{if: {a} == 'ets' }ETS{/if}	\$ets->a = 'ets';	ETS
{if: {a} == 1 }a == 1{/if}	\$ets->not_a = 1;	(none)
${if: \{a[1]/b\} == 2\}b == 2{/if}}$	<pre>\$ets->a[0]->b = 1; \$ets->a[1]->b = 2;</pre>	b == 2

Examples in evaluated part of elements

Template	PHP code	Result
{repeat: {a} / 10}*{/repeat}	\$ets->a = 30;	***
{mask:main} {b:{c}} {/mask}	<pre>\$ets->b->e = ' '; \$ets->c = 'd';</pre>	- -
{mask:d}-{e}-{/mask}		

2. Alternate tag element

Places an outer template with a different name.

Syntax

```
{variable:template}
```

Template tree

Number of occurrences	Unlimited
	Any element aside from call, choose, choose-variable and PHP elements
Child elements	In template, PHP code, simple tags

Rules

```
place simple tags in template
if template is a valid PHP code that stands for a string value
     if the outer template template exists
          if the variable variable is scalar
                 place the content of the template
          else if the variable variable is an object
                 place the content of the template
                 change the current level to variable
          else if the variable name is an array
                 for each element of the array
                      place the content of the template
                      change the current level to name
          else
                 disappear
     else variable is scalar
          place the value of this variable
     else
          disappear
else if template produces a fatal error
     halt the script
else
     disappear
```

Remarks

FALSE values, empty strings, NULL values, non-existing variables, empty arrays and empty objects stand for missing in variable.

This element accepts absolute and relative paths for variable.

About simple tags in template:

- FALSE values and empty strings stand for scalar value,
- strings are placed with double quotes and are escaped to accept carriage returns and tabulations.

Warning: as indicated in rules, when the evaluated code produces a fatal error, the script halts. This means that you will get an empty result. It happens generally when you're calling a missing function.

Examples

Template	PHP code	Result
<pre>{mask:main}</pre>	\$ets->a = 1;	b with 1
<pre>{mask:main} {c:d} {/mask} {mask:d}c with {e}{/mask}</pre>	\$ets->c->e = 1;	c with 1
<pre>{mask:main} f = {f:xx} {/mask}</pre>	\$ets->f = 1;	f = 1

3. Template element

Defines a template and, if inner, places it.

Syntax

```
\{mask:name\} ... \{/mask\}
```

Template tree

Number of occurrences	Unique name if outer Unlimited if inner
Parent elements	Any element aside from call, choose, choose-variable and PHP elements if inner None if outer
Child elements	Text, comment, cdata and any element aside from argument, when-value, when-test and else elements

Rules

```
if the variable name is scalar
place the content of the template
else if the variable name is an object
place the content of the template
change the current level to name
else if the variable name is an array
for each element of the array
place the content of the template
change the current level to name
else
disappear
```

Remarks

This element accepts absolute and relative paths for name for inner templates. They don't in outer templates.

Examples

Template	PHP code	Result
<pre>{mask:main} {mask:a}Content of a{/mask} {/mask}</pre>	\$ets->a = 1;	Content of a
<pre>{mask:main} {mask:b}Content of b{/mask} {/mask}</pre>	\$ets->b->a = 1;	Content of b
<pre>{mask:main} {mask:c}Content of c{/mask} {/mask}</pre>	<pre>\$ets->c[0]->a = 1; \$ets->c[1]->a = 1; \$ets->c[2]->a = 1;</pre>	Content of c Content of c Content of c
<pre>{mask:main} {mask:d}Content of d{/mask} {/mask}</pre>	<pre>\$ets->d = '';</pre>	(none)
<pre>{mask:main} {mask:e}Content of e{/mask} {/mask}</pre>	<pre>\$ets->e[0][0]->a = 1; \$ets->e[0][1]->a = 1; \$ets->e[1][0]->a = 1; \$ets->e[1][1]->a = 1;</pre>	Content of e Content of e Content of e Content of e

Template	PHP code	Result
<pre>{mask:main}</pre>	\$ets->f[0]->a = 1;	1st f 2nd f

4. Set element

Places a content when a variable is set (not missing).

Syntax

```
{set:variable} ... {/set}
```

Template tree

Number of occurrences	Unlimited
Parent elements	Any element aside from call, choose, choose-variable and PHP elements
Child elements	Text, comment, cdata and any element aside from argument, when-value, when-test and else elements

Rules

```
if variable is not missing
place the content of the element
else
disappear
```

Remarks

FALSE values, empty strings, NULL values, non-existing variables, empty arrays and empty objects stand for missing.

This element accepts absolute and relative paths for variable.

Examples

Template	PHP code	Result
{set:a}a is not missing{/set}	<pre>\$ets->a = TRUE;</pre>	a is not missing
{set:b}b is not missing{/set}	<pre>\$ets->b = NULL;</pre>	(none)
{set:c}c is not missing{/set}	<pre>\$ets->c = FALSE;</pre>	(none)
{set:d}d is not missing{/set}	\$ets->d = '';	(none)
<pre>{set:e}e is not missing{/set}</pre>	<pre>\$ets->e->a = 1; \$ets->e->b = 2;</pre>	e is not missing

5. Set-value element

Places a content when a variable has a specific value.

Syntax

```
{set:variable:value} ... {/set}
```

Template tree

Number of occurrences	Unlimited
Parent elements	Any element aside from call, choose, choose-variable and PHP elements
Child elements	Text, comment, cdata and any element aside from argument, when-value, when-test and else elements

Rules

if variable has a value of value place the content of the element else disappear

Remarks

{set:variable:NULL} or {set:variable:} don't work. Use {mis:variable} instead.

This element accepts absolute and relative paths for variable.

value accepts simple strings without spaces, single and double quotes strings.

Examples

Template	PHP code	Result
{set:a:3}a == 3{/set}	\$ets->a = 3;	a == 3
{set:b:value}b == 'value'{/set}	<pre>\$ets->b = 'value';</pre>	b == 'value'
{set:c:"val ue"}c == "val ue"{/set}	<pre>\$ets->c = 'value';</pre>	(none)
{set:d:4}d == 4{/set}	\$ets->d = NULL;	(none)

6. Missing element

Places a content when a variable is missing.

Syntax

```
{mis:variable} ... {/mis}
```

Template tree

Number of occurrences	Unlimited
Parent elements	Any element aside from call, choose, choose-variable and PHP elements
	Text, comment, cdata and any element aside from argument, when-value, when-test and else elements

Rules

```
if foo is missing
place the content of the element
else
disappear
```

Remarks

FALSE values, empty strings, NULL values, non-existing variables, empty arrays and empty objects stand for missing.

This element accepts absolute and relative paths for variable.

Examples

Template	PHP code	Result
{mis:a}a is missing{/mis}	<pre>\$ets->a = TRUE;</pre>	(none)
<pre>{mis:b}b is missing{/mis}</pre>	<pre>\$ets->b = NULL;</pre>	b is missing
<pre>{mis:c}c is missing{/mis}</pre>	<pre>\$ets->c = FALSE;</pre>	c is missing
{mis:d}d is missing{/mis}	\$ets->d = '';	d is missing

7. Missing-value element

Places a content when a variable has not a specific value or is missing.

Syntax

```
{mis:variable:value} ... {/mis}
```

Template tree

Number of occurrences	Unlimited
Parent elements	Any element aside from call, choose, choose-variable and PHP elements
	Text, comment, cdata and any element aside from argument, when-value, when-test and else elements

Rules

if variable has not a value of value or is missing place the content of the element else disappear

Remarks

{mis:variable:NULL} or {mis:variable:} don't work. Use {set:variable} instead.

This element accepts absolute and relative paths for variable.

value accepts simple strings without spaces, single and double quotes strings.

Examples

Template	PHP code	Result
{mis:a:3}a != 3{/mis}	\$ets->a = 3;	(none)
{mis:b:value}b != 'value'{/mis}	<pre>\$ets->b = 'value';</pre>	(none)
{mis:c:"val ue"}c != "val ue"{/mis}	<pre>\$ets->c = 'value';</pre>	c != "val ue"
{mis:d:4}d != 4{/mis}	\$ets->d = NULL;	d != 4

8. PHP element

Places a content which will be parsed as PHP code.

Syntax

$$\{php\}$$
 ... $\{/php\}$

Template tree

Number of occurrences	Unlimited
Parent elements	Any element aside from call, choose, choose-variable and PHP elements
Child elements	Simple tags, PHP code

Rules

if the content is a valid PHP code and stands for a scalar value place the representation of this value else if the content is produces a fatal error halt the script else disappear

Remarks

PHP element should be used to format values only.

About simple tags in a PHP element:

- FALSE values and empty strings stand for scalar value,
- strings are placed with double quotes and are escaped to accept carriage returns and tabulations.

Warning: as indicated in rules, when the evaluated code produces a fatal error, the script halts. This means that you will get an empty result. It happens generally when you're calling a missing function. When the code produces a parse error or something else, the script doesn't halt but the PHP element disappears.

Examples

Template	PHP code	Result
<pre>{php}sprintf('%.2f', {price}){/php}</pre>	\$ets->price = 4.3;	4.30
{php}date('Y', {date}){/php}	<pre>\$ets->date = time();</pre>	2003
<pre>{php}strtolower({string}){/php}</pre>	<pre>\$ets->string = 'LOWER';</pre>	lower
<pre>{php}sprintf('%.2f', {price}){/php}</pre>	<pre>\$ets->price = NULL;</pre>	(none)
<pre>Before {php}missing_function({label}){/php} After</pre>	<pre>\$ets->label = 'abc';</pre>	(none)

9. Constant element

Places an outer template.

Syntax

```
{const:template}
```

Template tree

Number of occurrences	Unlimited
	Any element aside from call, choose, choose-variable and PHP elements
Child elements	In template, PHP code, simple tags

Rules

```
place simple tags in template
if template is a valid PHP code that stands for a string value
if the outer template template exists
place its content
else
disappear
else if template produces a fatal error
halt the script
else
disappear
```

Remarks

This element doesn't change the current level.

This element is independent from the data tree.

About simple tags in template:

- FALSE values and empty strings stand for scalar value,
- strings are placed with double quotes and are escaped to accept carriage returns and tabulations.

Warning: as indicated in rules, when the evaluated code produces a fatal error, the script halts. This means that you will get an empty result. It happens generally when you're calling a missing function.

Examples

Template	PHP code	Result
<pre>{mask:main} {const:a} {/mask} {mask:a}Content of a{/mask}</pre>	<pre>\$ets->not_a = 1;</pre>	Content of a
<pre>{mask:main} {const:b} {/mask} {mask:not_b}Content{/mask}</pre>	<pre>\$ets->price = 3;</pre>	(none)

Template	PHP code	Result
<pre>{mask:main} {const:c} {/mask}</pre>	\$ets->d = 1;	c with 1
{mask:c}c with {d}{/mask}		

10. If element

Places a content if a test is TRUE.

Syntax

```
{if:test} ... {/if}
```

Template tree

Number of occurrences	Unlimited
Parent elements	Any element aside from call, choose, choose-variable and PHP elements
	In test, PHP code, simple tags In content, text, comment, cdata and any element aside from argument, when-value, when-test and else elements

Rules

place simple tags in test
if test is a valid PHP code that stands for the boolean value TRUE
place its content
else if test produces a fatal error
halt the script
else
disappear

Remarks

About simple tags in an if element:

- FALSE values and empty strings stand for scalar value,
- strings are placed with double quotes and are escaped to accept carriage returns and tabulations.

Warning: as indicated in rules, when the evaluated code produces a fatal error, the script halts. This means that you will get an empty result. It happens generally when you're calling a missing function.

Examples

Template	PHP code	Result
{if: {a} == 4 }a == 4{/if}	\$ets->a = 4;	a == 4
{if: {a} }a is TRUE{/if}	<pre>\$ets->a = TRUE;</pre>	a is TRUE
{if: {a} == 'ets' }ETS{/if}	\$ets->a = 'ets';	ETS
{if: {a} == 1 }a == 1{/if}	\$ets->not_a = 1;	(none)
${if: \{a[1]/b\} == 2}b == 2{/if}$	<pre>\$ets->a[0]->b = 1; \$ets->a[1]->b = 2;</pre>	b == 2

11. Choose element

Provides multiple conditions in conjunction with when-test and else elements.

Syntax

```
{choose} ... {/choose}
```

Template tree

Number of occurrences	Unlimited
Parent elements	Any element aside from call, choose, choose-variable and PHP elements
Child elements	when-test element, else element and comment

Rules

```
for each when-test chilld
    place simple tags in test
    if test is a valid PHP code that stands for the boolean value TRUE
        place its content
        exit
    else if test produces a fatal error
        halt the script

if an else child exists
    place its content
    exit

else
    disappear
```

Remarks

Choose element defines a container to organize a sequence of multiple tests parsed like if/elseif/.../else.

When-test children are evaluated in order from the top to the bottom until a test is TRUE.

Else element must be unique in each choose element but can be defined anywhere in the choose element.

Warning: as indicated in rules, when the evaluated code produces a fatal error, the script halts. This means that you will get an empty result. It happens generally when you're calling a missing function.

Examples

Template	PHP code	Result
<pre>{choose} {when:{a} < 2}singular{/when} {else}plural{/else} {/choose}</pre>	\$ets->a = 2;	plural
<pre>{choose} {when:{a} < 0}negative{/when} {when:{a} < 9}a < 9{/when} {else}a >= 9{/else} {/choose}</pre>	\$ets->a = 2;	a < 9

12. When-test element

Places a content if a test is TRUE so disables other when-test or else siblings.

Syntax

```
{when:test} ... {/when}
```

Template tree

Number of occurrences	Unlimited
Parent elements	Choose element
Child elements	In test, PHP code, simple tags In content, text, comment, cdata and any element aside from argument, when-value, when-test and else elements

Rules

See choose element.

Remarks

About simple tags in an when-test element:

- FALSE values and empty strings stand for scalar value,
- strings are placed with double quotes and are escaped to accept carriage returns and tabulations.

Examples

Template	PHP code	Result
<pre>{choose} {when:{a} < 0}negative{/when} {when:{a} < 9}a < 9{/when} {when:{a} < 99}9 < a < 99{/when} {else}a >= 99{/else} {/choose}</pre>	\$ets->a = 2;	a < 9
<pre>{choose} {when:{a} < 0}negative{/when} {else}nul{/else} {when:{a} > 0}positive{/when} {/choose}</pre>	\$ets->a = 2;	positive

13. Else element

Places a content if all when-test or when-value siblings are FALSE.

Syntax

Template tree

Number of occurrences	One per choose or choose-variable element
Parent elements	Choose or choose-variable element
Child elements	Text, comment, cdata and any element aside from argument, when-value, when-test and else elements

Rules

See choose and choose-variable elements.

Remarks

Else element provides a default content for choose and choose-variable elements.

Examples

Template	PHP code	Result
<pre>{choose} {when:{a} < 0}negative{/when} {when:{a} < 9}a < 9{/when} {when:{a} < 99}9 < a < 99{/when} {else}a >= 99{/else} {/choose}</pre>	\$ets->a = 2;	a < 9
<pre>{choose} {else}useless tags{/else} {/choose}</pre>	\$ets->a = 1;	useless tags

14. Choose-variable element

Provides multiple conditions in conjunction with when-value and else elements.

Syntax

```
{choose:variable} ... {/choose}
```

Template tree

Number of occurrences	Unlimited
	Any element aside from call, choose, choose-variable and PHP elements
Child elements	when-value element, else element and comment

Rules

```
if the variable variable is scalar
for each when-value child
    if the variable variable has the value of this element
    place its content
    exit
if there an else child exists
    place its content
    exit
else
    disappear
else
disappear
```

Remarks

Choose-variable element defines a container to organize a sequence of multiple tests parsed like switch/case/default.

When-value children are evaluated in order from the top to the bottom until a test is TRUE.

Else element must be unique in each choose-variable element but can be defined anywhere in the choose element.

This element accepts absolute and relative paths for variable.

Examples

Template	PHP code	Result
<pre>{choose:partner/id} {when:1}partner #1{/when} {when:2}partner #2{/when} {when:3}partner #3{/when} {else}no partner{/else} {/choose}</pre>	<pre>\$ets->partner->id = 2;</pre>	partner #2
<pre>{choose:label} {when:'the fox'}1{/when} {when:'the dog'}2{/when} {else}0{/else} {/choose}</pre>	<pre>\$ets->label = 'the dog';</pre>	2

15. When-value element

Places a content if the variable of the choose parent has the value of this element so disables other when-value or else siblings.

Syntax

```
{when:value} ... {/when}
```

Template tree

Number of occurrences	Unlimited
Parent elements	Choose-variable element
Child elements	Text, comment, cdata and any element aside from argument, when-value, when-test and else elements

Rules

See choose-variable element.

Remarks

 $\{when:NULL\}\ or\ \{when:\}\ don't\ work.\ Use\ \{mis:variable\}\ out\ of\ choose-variable\ parent\ instead.$

This element accepts absolute and relative paths for variable.

value accepts simple strings without spaces, single and double quotes strings.

Examples

Template	PHP code	Result
<pre>{choose:partner/id} {when:1}partner #1{/when} {when:2}partner #2{/when} {when:3}partner #3{/when} {else}no partner{/else} {/choose}</pre>	<pre>\$ets->partner->id = 2;</pre>	partner #2
<pre>{choose:label} {when:'the fox'}1{/when} {when:'the dog'}2{/when} {else}0{/else} {/choose}</pre>	<pre>\$ets->label = 'the dog';</pre>	2

16. Call element

Places an outer template with arguments.

Syntax

```
{call:template} ... {/call}
```

Template tree

Number of occurrences	Unlimited
Parent elements	Any element aside from call, choose, choose-variable and PHP elements
	In template, PHP code, simple tags In content, argument element, comment

Rules

```
place simple tags in template
if template is a valid PHP code that stands for a string value
if the outer template template exists
place its content
for each argument child of the call element
add the built argument to the data tree
else
disappear
else if template produces a fatal error
halt the script
else
disappear
```

Remarks

Call element is parsed like a function call and works like constant element plus defines a container where to define arguments.

Call element doesn't change the current level.

Be careful when choosing the name of an argument to not overwrite existing data. Choose for example a prefix like a_.

About simple tags in template:

- FALSE values and empty strings stand for scalar value,
- strings are placed with double quotes and are escaped to accept carriage returns and tabulations.

Warning: as indicated in rules, when the evaluated code produces a fatal error, the script halts. This means that you will get an empty result. It happens generally when you're calling a missing function.

Example

Template	PHP code	Result
<pre></pre>	\$ets->a = 1;	red blue

17. Argument element

Defines an argument of a call element.

Syntax

```
\{arg:name\} ... \{/arg\}
```

Template tree

Number of occurrences	Unlimited
Parent elements	Call element
Child elements	Text, comment, cdata and any element aside from argument, when-value, when-test and else elements

Rules

See call element.

Remarks

Argument element is built then used as a scalar variable in the called outer template.

Argument element doesn't change the current level.

{arg:name}{/arg} will produce the same result than if it is not defined because it defines a empty string which stands for a missing variable.

Example

See call element.

18. Repeat element

Places a content several times.

Syntax

```
{repeat:n} ... {/repeat}
```

Template tree

Number of occurrences	Unlimited
Parent elements	Any element aside from call, choose, choose-variable and PHP elements
	Text, comment, cdata and any element aside from argument, when-value, when-test and else elements

Rules

```
if n is a valid PHP code that stands for an integer value loop n times
place the content
else if n produces a fatal error
halt the script
else
disappear
```

Remarks

When possible, ETS creates a system variable, _count, which contains the current loop.

If the number of loops is negative or zero, repeat element disappears.

Warning: as indicated in rules, when the evaluated code produces a fatal error, the script halts. This means that you will get an empty result. It happens generally when you're calling a missing function.

Example

Template	PHP code	Result
<pre>{mask:graph} {repeat:{val} / 100}*{/repeat} {/mask}</pre>	<pre>\$ets->graph[0]->val = 300; \$ets->graph[1]->val = 100; \$ets->graph[2]->val = 600; \$ets->graph[3]->val = 150;</pre>	*** * *****
<pre>{repeat: {pages} } {_count}{if: {_count} < {pages} }, {/if} {/repeat}</pre>	<pre>\$ets->pages = 4;</pre>	1, 2, 3, 4

19. Include element

Includes outer templates from a container.

Syntax

{include:container}

Template tree

Number of occurrences	Unlimited
Parent elements	Any element aside from call, choose, choose-variable and PHP elements if inner None if outer
Child elements	In container, PHP code, simple tags

Rules

place simple tags in container
if container is a valid PHP code that stands for a string value
include the content of container
else if container produces a fatal error
halt the script
else
disappear

Remarks

If inner, the content of the container is parsed only when needed; if outer, it's parsed immediately.

Include element doesn't place the content of the container where it's declared. It adds outer templates defined in the container to available outer templates list. Thus, it's an alternative management of container names as argument of printt or sprintt.

If the container is a file name, a relative path starts from the location of the PHP script that calls ETS.

Warning: as indicated in rules, when the evaluated code produces a fatal error, the script halts. This means that you will get an empty result. It happens generally when you're calling a missing function.

Example

Template	PHP code	Result
<pre>{include:library.tpl} {mask:main}</pre>	<pre>\$ets->page = 'search';</pre>	<pre> <h1>Search</h1> 5 results found </pre>

20. Insert element

Places the content of a container as text.

Syntax

{insert:container}

Template tree

Number of occurrences	Unlimited
Parent elements	Any element aside from call, choose, choose-variable and PHP elements
Child elements	In container, PHP code, simple tags

Rules

place simple tags in container
if container is a valid PHP code that stands for a string value
insert the content of container as text
else if container produces a fatal error
halt the script
else
disappear

Remarks

Insert element inserts the content of a container only when needed and where it's declared.

If the container is a file name, a relative path starts from the location of the PHP script that calls ETS.

Warning: as indicated in rules, when the evaluated code produces a fatal error, the script halts. This means that you will get an empty result. It happens generally when you're calling a missing function.

Examples

Template	PHP code	Result
<pre>{set:intro} {insert:'file.txt'} {/set}</pre>	<pre>\$ets->intro = FALSE;</pre>	(none)
<pre>{set:license} {insert:'lgpl.txt'} {/set}</pre>	<pre>\$ets->license = TRUE;</pre>	GNU LESSER GENERAL PUBLIC LICENSE Version 2.1, February 1999
		Copyright (C) 1991, 1999 Free Software Foundation, Inc.

21. Eval element

Places the content of a container as a template part.

Syntax

{eval:container}

Template tree

Number of occurrences	Unlimited
	Any element aside from call, choose, choose-variable and PHP elements
Child elements	In container, PHP code, simple tags

Rules

place simple tags in container
if container is a valid PHP code that stands for a string value
insert the content of container as template part
else if container produces a fatal error
halt the script
else
disappear

Remarks

Eval element works like include element because its content is parsed and works lke insert element because its content is placed where it's declared.

Eval element inserts the content of a container only when needed.

If the container is a file name, a relative path starts from the location of the PHP script that calls ETS.

Warning: as indicated in rules, when the evaluated code produces a fatal error, the script halts. This means that you will get an empty result. It happens generally when you're calling a missing function.

Examples

Template	PHP code	Result
<pre>{set:intro} {eval:'file.ets'} {/set}</pre>	<pre>\$ets->intro = FALSE;</pre>	(none)
<pre>{set:license} {eval:'lgpl.ets'} {/set}</pre>	<pre>\$ets->license = TRUE; \$ets->title = 'ETS';</pre>	ETSGNU LESSER GENERAL PUBLIC LICENSE
lgpl.ets		Version 2.1, February 1999
{title}GNU LESSER GENERAL PUBLIC LICENSE Version 2.1, February		Copyright (C) 1991, 1999 Free Software Foundation, Inc.

22. Safe element

Places the content of a container as a template part with restrictions.

Syntax

{safe:container}

Template tree

Number of occurrences	Unlimited
Parent elements	Any element aside from call, choose, choose-variable and PHP elements
Child elements	Text, comment, cdata, simple tags, set, set-value, missing, missing-value and template elements

Rules

place simple tags in container
if container is a valid PHP code that stands for a string value
insert the content of container as template part
else if container produces a fatal error
halt the script
else
disappear

Remarks

Safe element works like eval element but only accepts, in the called container, elements which haven't a part that can be PHP code.

It can be used when a site contains public and private containers or when you can't make sure that some containers are well-formed.

ETS produces a notice message when safed containers contains unauthorized elements.

Warning: as indicated in rules, when the evaluated code produces a fatal error, the script halts. This means that you will get an empty result. It happens generally when you're calling a missing function.

23. Reduce element

Defines a size reducing behaviour.

Syntax

{reduce:value}

Template tree

Number of occurrences	One
Parent elements	None
Child elements	None

Rules

if value is OFF or NOTHING

don't change the built document

else if value is SPACE or SPACES

remove whitespaces from the beginning and end of each line of the built document else if value is CRLF or ON or ALL

remove whitespaces from the beginning and end of each line of the built document remove carriage returns of the built document

Remarks

This directive must be placed out of any template. If more than one reduce directive is specified, the last one will be used.

The default behaviour for size reducing is to do nothing.

Whitespaces stand for spaces and tabulations.

You can also use comments to suppress specific white spaces.

Whitespaces and carriage returns of cdata sections are not affected.

Examples

Template	Result
<pre>{reduce:nothing} {mask:main}{* *}x Y {/mask}</pre>	х
<pre>{reduce:spaces} {mask:main} x y {/mask}</pre>	х
<pre>{reduce:all} {mask:main} x y {/mask}</pre>	ху

24. Comment

Defines a comment section.

Syntax

```
{* ... *}
```

Template tree

Number of occurrences	Unlimited	
Parent elements	Any element aside from PHP element	
Child elements	Ignored	

Remarks

Comments are not part of the built template.

Comments can also be specified between outer templates: these parts of containers are ignored by ETS.

Comments can be nested.

Apart from a debug process, don't leave useless big comments in a container; it slows down ETS because all comments are read.

Examples

Template	Result
The root template: {mask:main} {const:ets} {* the main template {* nested but works too! *} *} {/mask}	ABC
Another template: {mask:ets} ABC {/mask}	
Active: {mask:main} A {/mask}	A
Backup: {* {mask:main} B {/mask} *}	

25. Cdata

Defines a section where the text is not parsed.

Syntax

Template tree

Number of occurrences	Unlimited
Parent elements	Any element aside from call, choose, choose-variable and PHP elements
Child elements	Anything becomes text

Remarks

In some situations, for example, in a CSS section or a javascript section of a HTML document, you can safely use characters { and } if these sections are written between {# and #}. These characters define a cdata section. In other words, these sections will be considered by ETS as text.

Cdata can be nested.

To avoid parsing, you can also add a space, tab or carriage return after { . In this case, ETS doesn't generate an error and considers this content as text.

Spaces, tabs and end of lines are not affected by reduce directive in cdata.

Examples

Template	Result
{# div{color:blue;} #}	<pre>div{color:blue;}</pre>
<pre>div { color:blue; }</pre>	<pre>div { color:blue; }</pre>
<pre>div{color:blue;}</pre>	(parse error)

26. System variables

When a level is an element of an array, ETS creates system variables for this level which can be used as other ones.

These variables are:

Name	Data type	Description
_key	Mixed	Actual key of the element
_index	Integer	Numbers the element from 0
_rank	Integer	Numbers the element from 1
_odd	Boolean	TRUE if _rank is odd
_even	Boolean	TRUE if _rank is even
_first	Boolean	TRUE if the element is the first of the array
_last	Boolean	TRUE if the element is the last of the array
_middle	Boolean	TRUE if _first is FALSE and _last is FALSE
_not_first	Boolean	TRUE if _first is FALSE
_not_middle	Boolean	TRUE if _middle is FALSE
_not_last	Boolean	TRUE if _last is FALSE
_not_even	Boolean	TRUE if _even is FALSE
_not_odd	Boolean	TRUE if _odd is FALSE

Examples

This example shows how to alternate color of lines in a table and use a different color for the first line.

```
{mask:main}
   {set:line}
   {mask:line}
        {id}
            {label}
       {/mask}
   {/set}
   {mis:line} < b > No data < / b > { / mis}
{/mask}
{mask:color}{choose}
   {when:{_first}}#00FF00{/when}
   {when:{_odd} }#FFFFFF{/when}
{when:{_even} }#C0C0C0{/when}
{/choose}{/mask}
```

This example shows how to calculate the number of elements in an array and add a "s" if there is more than 1 element.

```
{mask:main}
    {mask:array}{set:_last}{_rank} element{const:s} in array{/set}{/mask}
{/mask}

{mask:s}{if: {_rank} > 1}s{/if}{/mask}
```

27. Path

In a path, ETS accepts different operators and names shown in the following table:

Name	Description	
/	Child level in the data tree	
//	Root level of the data tree	
	Level of the data tree used in the parent template	
_parent	Alias of	
_start	First element of the current array in the data tree	
_previous	Previous element of the current array in the data tree	
_next	Next element of the current array in the data tree	
_end	Last element of the current array in the data tree	

Example

Template	Data tree	Result view							
<pre>{mask:main} {mask:b} </pre>	\$ets->a = 'a'; \$ets->b[0]->c = 1; \$ets->b[1]->c = 2; \$ets->b[2]->c = 3; \$ets->b[3]->c = 4; \$ets->b[4]->c = 5;	-		1	1 -			_	
{_start/c} {_start/c} {_previous/_previous/c} {_previous/c} {_td>{_previous/c} {_td>{_b>{_c} {_td>{_td>{_td>{_td>{_td>{_td>{_td>{_					1	2	3	5	a
		1		1	2	3	4	5	a
		1	1	2	3	4	5	5	a
		1	2	3	4	5		5	a
		1	3	4	5			5	a
{/mask} {/mask}									

28. Error handling

ETS checks PHP error level reporting before displaying a message. ETS follows the 3 error levels of PHP.

Notice

ETS displays a message and continues to parse containers or match data and templates.

Notice messages are:

- container not found
- duplicated reduce element
- invalid value for reduce element
- datatree is not an array, an object or null (given as argument)
- wrong element in safe container

Warning

ETS displays a message and stops to parse the outer template which causes the message.

Warning message are:

- wrong element in another or at root
- unexpected closing tag
- unexpected character or space in tag
- end of comment or cdata not found
- closing tag not found
- duplicated templates
- else element duplicated

Error

ETS displays a message and halts the script

Error message are:

- entry mask not found
- containers are not array or string (given as argument)

29. User-level templates storage

If you don't want to use the standard way to retrieve template contents provided by ETS, you can set your own.

In this case, you must define a function named ets_source_read_handler which needs one argument, the id of the template container, and returns the content of the container or FALSE on error.

For example, if you store template containers in a MySQL database, this function could be:

```
function ets_source_read_handler($id)
{
    $content = FALSE;
    mysql_connect('myhost', 'myuser', 'mypassword');
    mysql_select_db('mydatabase');
    $id = mysql_escape_string($id);
    $h = mysql_query("select content from ets_source where id = '$id'");
    if ($o = mysql_fetch_object($h)) {
        $content = $o->content;
    }
    mysql_free_result($h);
    return $content;
}
```

When this function is defined, ETS uses it each time it needs to retrieve the content of a container; those given as argument of print and sprintt and those used by include or insert elements as well.

30. Cache system

In complement to the user-level templates storage, you can optionally store and re-use compiled template containers so ETS will not have to parse containers each time it uses them before playing with a data tree.

To define a complete cache system, you must define 2 functions in addition to ets_source_read_handler: ets_cache_read_handler and ets_cache_write_handler.

ets_cache_read_handler needs one argument, the id of the container, and returns the compiled container or FALSE when the compiled container is obsolete or on error.

ets_cache_write_handler needs two arguments, the id of the template container and the compiled content of the container, and doesn't return anything.

The cache system provided by ETS will automatically refresh compiled containers each time a source container is modified.

ETS never compiles containers which are used by insert elements because there are not template containers but only data containers.

Here is a complete set of functions which can be used to implement a file-based cache system:

```
// read a compiled container and check if it's not obsolete
function ets_cache_read_handler($id)
   $content = FALSE;
   if (@filemtime("ets/$id.ets") > @filemtime("tpl/$id.html")) {
         if ($handle = @fopen("ets/$id.ets", 'rb')) {
               $size = @filesize("ets/$id.ets");
               $content = @fread($handle, $size);
               fclose($handle);
   return $content;
// write a compiled container
function ets_cache_write_handler($id, $content)
   if ($handle = @fopen("ets/$id.ets", 'wb')) {
         @fwrite($handle, $content);
         fclose($handle);
   }
// read a source container
function ets_source_read_handler($id)
   $content = FALSE;
   if ($handle = @fopen("tpl/$id.html", 'rb')) {
         $size = @filesize("tpl/$id.html");
         $content = @fread($handle, $size);
         fclose($handle);
   return $content;
```

In this example, source templates containers are stored in the directory tpl and compiled ones in ets.

Before using this cache system, you must fill the directory tpl with original templates files.

Here is a MySQL-based cache system:

```
// read a compiled container and check if it's not obsolete
function ets_cache_read_handler($id)
   $content = FALSE;
   mysql_connect('myhost', 'myuser', 'mypassword');
   mysql_select_db('mydatabase');
   $id = mysql_escape_string($id);
   $h = mysql_query("select c.content from ets_cache c inner join " .
         "ets_source s on c.id = s.id and s.date < c.date where c.id = '$id'");</pre>
   if ($0 = mysql_fetch_object($h)) {
         $content = $o->content;
   mysql_free_result($h);
   return $content;
// write a compiled container
function ets_cache_write_handler($id, $content)
   mysql_connect('myhost', 'myuser', 'mypassword');
   mysql_select_db('mydatabase');
   $id = mysql_escape_string($id);
   $content = mysql_escape_string($content);
   $h = mysql_query("select id from ets_cache where id = '$id'");
   $0 = mysql_fetch_object($h);
   mysql_free_result($h);
   if ($0) {
         mysql_query("update ets_cache set content = '$content' where id = '$id'");
   } else {
         mysql_query("insert into ets_cache (id, content) values ('$id', '$content')");
   }
// read a source container
function ets_source_read_handler($id)
   Scontent = FALSE;
   mysql_connect('myhost', 'myuser', 'mypassword');
   mysql_select_db('mydatabase');
   $id = mysql_escape_string($id);
   $h = mysql_query("select content from ets_source where id = '$id'");
   if ($0 = mysql_fetch_object($h)) {
         $content = $o->content;
   mysql_free_result($h);
   return $content;
```

In this example, the table ets_source contains source containers and ets_cache compiled ones and have this structure:

```
CREATE TABLE ets_cache (
  id varchar(100) NOT NULL default '',
  date timestamp(14) NOT NULL,
  content text NOT NULL,
  primary KEY (id)
) TYPE=MyISAM;

CREATE TABLE ets_source (
  id varchar(100) NOT NULL default '',
  date timestamp(14) NOT NULL,
  content text NOT NULL,
  primary KEY (id)
) TYPE=MyISAM;
```

Before using this cache system, you must fill the table ets_source with original templates containers.

Here is a Turck-MMCache-based cache system.

According to Turck MMCache site (http://www.turcksoft.com/en/e_mmc.htm):

"Turck MMCache is a free open source PHP accelerator, optimizer, encoder and dynamic content cache for PHP."

"[Turck MMCache] has been tested under PHP 4.1.0-4.3.2 under Linux and Windows with Apache 1.3 and 2.0"

To use MMCache, you must install and configure it as explained on its site.

```
// read a compiled container and check if it's not obsolete
function ets_cache_read_handler($id)
   $content = FALSE;
   if (mmcache_get("T_$id") > @filemtime("tpl/$id.html")) {
         $content = mmcache_get("C_$id");
   return $content;
// write a compiled container
function ets_cache_write_handler($id, $content)
   mmcache_put("T_$id", time());
   mmcache_put("C_$id", $content);
// read a source container
function ets_source_read_handler($id)
   $content = FALSE;
   if ($handle = @fopen("tpl/$id.html", 'rb')) {
         $size = @filesize("tpl/$id.html");
         $content = @fread($handle, $size);
         fclose($handle);
   return $content;
```

In this example, source templates containers are stored in the directory tpl and compiled ones in memory.

31. Miscellaneous

Simplified closing tags

```
Every closing tag can be simplified with {/}: {/mask} is equivalent to {/},
```

{/set} is equivalent to {/}, {/when} is equivalent to {/}, and so on.

External presentation logic

In some situations, the presentation logic can be stored outside templates containers. In this case, ETS provides several ways to exploit it:

- you can use variable template names in alternate tag, constant and call elements,
- you can use variable container names in include, insert and eval elements.

This example shows a way to use the template name stored in the variable tpl to present the level data:

```
{data:{tpl}}
```

This example shows a way to use a directory and a file defined in the data tree to include a file:

```
{include: {//directory} . '/' . {filename} }
```

Functions mis and set

To check if data are missing or not, you can use two functions provided by ETS which mimic the behaviour of missing and set elements: mis(value) and set(value).

These two examples are equivalents:

```
{mis:var1}{mis:var2}var1 and var2 are missing{/mis}{/mis}
{if: mis({var1}) && mis({var2})}var1 and var2 are missing{/if}
```

These functions are useful to check the state of two or more variables with the | | operator of PHP. This example is harder to define with only mis elements:

```
{if: mis({var1}) or mis({var2})}var1 or var2 is missing{/if}
```

Escapes

For a value of set-value, mis-value or when-value:

- in a no-quote string, use \} to escape }
- in a single-quoted string, use \' to espace '
- in a double-quoted string, use \" to escape "

In the evaluated part of any element, use \} to escape \}.

Version history

Version 3.05b (2003-12-12)

Spaces, tabs and ends of line are not affected by reduce directive in cdata sections.

Version 3.05a (2003-08-08)

Fixes and clean up

Version 3.05 (2003-07-23)

Accept empty containers (0 byte or without template)
Accept null containers (which can be several)
Check PHP error level before displaying an error
Go on parsing when a notice or a warning is found
Accept empty string as container name
Introduce safe element which works like eval but with restrictions (basically, no PHP code is evaluated in templates)

Version 3.04a (2003-04-25)

Fix a tiny bug (display of a notice message)

Version 3.04 (2003-03-31)

Modify alternate tag, const and call elements to accept string expressions in template name Modify include, insert, eval to accept string expressions in container name fix a warning message for stored reduce directive introduce eval element which works like include but for mask parts fix text stored in choose and call elements when using simplified closing tag

Version 3.03 (2003-03-12)

introduce complete but optional cache of parsed templates with user-level handler functions introduce user-level handler function used to delegate reads of templates introduce _start, _next, _previous, _end and _parent (../id is the same than _parent/id) fix behaviour of parent element of a path (..) introduce mis(variable) and set(variable) which works like respectively missing and set element and can be used in if elements

Version 3.02a (2003-03-03)

fix: blank page when no reduce directive

Version 3.02 (2003-02-28)

update documentation introduce {insert:file_name} wich places a file content but doesn't parse it introduce {include:file_name} which adds outer templates of included file fix colon character in value introduce {repeat:n} which repeats its content n times introduce simplified closing tag {/} fix line number of error messages when there's more than 1 file error message when more than 1 use of reduce element error message when a file is missing more strict syntax when parsing templates (so more error messages) great cleaning of code

Version 3.01 (2003-02-19)

Introduce access to data of the parent template with .. in path

Introduce management of missing outer templates with alternate tags to avoid calls to a template with the same name (i.e. {variable:template} places the value of variable if template doesn't exist)

Suppress infinite loops of const elements detection because it's not conclusive in some contexts.

Version 3.00 (2003-02-01)

Introduce {call:foo} ... {/call} which works like {const:foo} with arguments

introduce {choose} ... {/choose} which works like if/elseif/.../else (cf. doc)

introduce {choose:foo} ... {/choose} which works like switch/case/default (cf. doc)

introduce (if: test) ... (/if) where test may contain tags (with simple, relative or absolute paths)

enhance debugging information on parsing error

introduce cdata blocks {# ... #} to avoid their parsing (can be nested too)

accept now nested comments

(var:foo) and (var:foo:bar) don't work any more, use (set:foo) and (set:foo:bar) instead

{val:foo} doesn't work any more, use {foo} instead

remove the ability to propagate the value of a variable (scope) (it's a construct limit) but ntroduce access to a specific element from the root (ex. {//foo/bar})

accept now outer template from variable (depending on the type of the variable)

introduce access to a specific element of an array (ex. {set:foo/bar[3]/foobar}) then introduce system index [_first] and [_last]

introduce call to an outer template with a different name than the corresponding data {variable:template} really detect infinite loop in circular const

MASK and STRING properties of a data level doesn't work any more (this concept doesn't allow several inner templates corresponding to the same level in the datatree and puts presentation logic in the data tree)

introduce reduce directive but remove reduce parameter of printt (reduce behavior belongs to presentation logic)

introduce new system variable _middle, _not_first, not_middle, not_last

accept now non printable characters (spaces, tabs, carriage returns...) before } of every tag

accept now single or double quoted strings in the value part of elements like {set:foo:...} {mis:foo:...} and {when:foo}

accept now relative and absolute path (every data can be accessed from everywhere)

accept now multiple definition of inner templates matching with the same level in the datatree

Closing tags are simplified ({/mask} instead of {/mask:main})

ETS becomes "template driven" instead of "data driven" (ETS was completely rewritten)

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Version 2.04a (2002-11-28)

fix: manage values which contain preg special character '/'

Version 2.04 (2002-11-25)

introduce mask for specific missing values of a variable

introduce mask for specific values of a variable

introduce scope of variables

introduce new system tags for arrays: _first and _last

accept now NULL as data tree

introduce new system tag for arrays: _key

change license (LGPL instead of GPL)

fix: when you reuse the same data tree with several templates, ETS kept old masks

introduce size reducing parameter

accept now variables in constant masks

reintroduce nested constant masks

introduce the prefix 'const:' for constant tags then remove verbose flag for all functions

clear out left tags because they correspond to missing variables

clear out missing level tags when the level is not missing

accept now constant mask nested in variable masks

accept now nested variable masks

Version 2.03 (private release only)

introduce system tags for arrays: _index, _odd, _even and _rank php stuff at level step

Version 2.02 (2002-06-17)

introduce mask of missing variable {mis:varname} ... {/mis:varname}

introduce php mask {php} ... {/php}

introduce comment {* ... *}

store unfound masks (faster)

introduce mask of variable {var:varname} ... {/var:varname}

use single quote instead of double in preg expressions

the second parameter of printt can now be an array instead of a list in a string

change conditions to be format like "constant-operator-variable" (e.g. if (FALSE === \$test))

prevent infinite loops in constant masks process

modify error handler to produce errors according to PHP error settings

modify error handler output to be HTML'd

Version 2.01 (private release only)

add error handler

cache of masks becomes a global variable instead of a static variable of the function _ets_mask

Version 2.00 (2002-06-04)

masks and variables names follow the same rules than PHP variables $% \left(1\right) =\left(1\right) \left(1\right)$

constant masks

use implicit masks assuming they had the same name than the corresponding object or array main mask name is 'main'

sprintt now has only two parameters: the data tree and an optional comma separated files list tags can't contain spaces

give up array notation, give up file masks

blocks become masks

Version 1.28 (private release only)

rearrange examples (cosmetic)
modify example templates to use new block tags
rearrange documentation
modify block tags because olders could produce non-well-formed templates (i.e, <ets:foo> becomes
{block:foo})
complete header printt function

Version 1.27 (2002-05-17)

modify header modify prefix of private functions fix detection of nested blocks fix unused placeholder deletion add test.php and test.html in package

Version 1.26 (2002-05-01)

authorize non-printable characters before the closing character (>) of ets tags

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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place

satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6.

Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

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