poi-tl(poi-template-language)

A better way to generate word(docx) with template， based on Apache POI。

What is poi-tl

FreeMarker or Velocity generates new html pages or configuration files based on text template and data. poi-tl is a Word template engine that generates **new documents** based on **Word template** and **data**.

The Word template has rich styles. Poi-tl will perfectly retain the styles in the template in the generated documents. You can also set styles for the tags. The styles of the tags will be applied to the replaced text, so you can focus on the template design.

poi-tl is a *"logic-less"* template engine. There is no complicated control structure and variable assignment, only **tags**, some tags can be replaced with text, pictures, tables, etc., some tags will hide certain some document content, while other tags will loop a series of document content.

> "Powerful" constructs like variable assignment or conditional statements make it easy to modify the look of an application within the template system exclusively... however, at the cost of separation, turning the templates themselves into part of the application logic.
>
> 《Google CTemplate》

poi-tl supports **custom functions (plug-ins)**, functions can be executed anywhere in the Word template, do anything anywhere in the document is the goal of poi-tl.

Feature	Description
✅ Text	Render the tag as text
✅ Picture	Render the tag as a picture
✅ Table	Render the tag as a table
✅ Numbering	Render the tag as a numbering
✅ Chart	Bar chart (3D bar chart), column chart (3D column chart), area chart (3D area chart), line chart (3D line chart), radar chart, pie chart (3D pie Figure) and other chart rendering
✅ If Condition	Hide or display certain document content (including text, paragraphs, pictures, tables, lists, charts, etc.) according to conditions
✅ Foreach Loop	Loop through certain document content (including text, paragraphs, pictures, tables, lists, charts, etc.) according to the collection
✅ Loop table row	Loop to copy a row of the rendered table

Feature	Description
✅ Loop table column	Loop copy and render a column of the table
✅ Loop ordered list	Support the loop of ordered list, and support multi-level list at the same time
✅ Highlight code	Word highlighting of code blocks, supporting 26 languages and hundreds of coloring styles
✅ Markdown	Convert Markdown to a word document
✅ Word attachment	Insert attachment in Word
✅ Word Comments	Complete support comment, create comment, modify comment, etc.
✅ Word SDT	Complete support structured document tag
✅ Textbox	Tag support in text box
✅ Picture replacement	Replace the original picture with another picture
✅ bookmarks, anchors, hyperlinks	Support setting bookmarks, anchors and hyperlinks in documents
✅ Expression Language	Fully supports SpringEL expressions and can extend more expressions: OGNL, MVEL...
✅ Style	The template is the style, and the code can also set the style
✅ Template nesting	The template contains sub-templates, and the sub-templates then contain sub-templates
✅ Merge	Word merge Merge, you can also merge in the specified position
✅ custom functions (plug-ins)	Plug-in design, execute function anywhere in the document

TOC

Maven

```
<dependency>
  <groupId>com.deepoove</groupId>
  <artifactId>poi-tl</artifactId>
  <version>1.12.2</version>
</dependency>
```

> NOTE: poi-tl `1.12.x` requires POI version `5.2.2+`.

Quick start

Start with a deadly simple example: replace `{{title}}` with "poi-tl template engine".

1. Create a new document `template.docx`, including the content `{{title}}`
2. TDO mode: Template + data-model = output

```
//The core API uses a minimalist design, only one line of code is required
XWPFTemplate.compile("template.docx").render(new HashMap<String, Object>()
{{
         put("title", "poi-tl template engine");
}}).writeToFile("out_template.docx");
```

Open the `out_template.docx` document, everything is as you wish.

Tags

The tag consists of two curly braces, `{{title}}` is a tag, `{{?title}}` is also a tag, `title` is the name of the tag, and `?` identifies the type of tag. Next, we Let's see what tag types are there.

Text

The text tag is the most basic tag type in the Word template. `{{name}}` will be replaced by the value of key `name` in the data model. If the key is not exist, the tag will be cleared(The program can configure whether to keep the tag or throw an exception).

The style of the text tag will be applied to the replaced text, as shown in the following example.

Code:

```
put("name", "Mama");
put("thing", "chocolates");
```

Template:

{{name}} always said life was like a box of {{thing}}.

Output:

Mama always said life was like a box of chocolates.

Picture

The image tag starts with `@`, for example, `{{@logo}}` will look for the value with the key of `logo` in the data model, and then replace the tag with the image. The data corresponding to the image tag can be a simple URL or Path string, or a structure containing the width and height of the image.

Code:

```
put("watermelon", "assets/watermelon.png");
put("watermelon", "http://x/lemon.png");
put("lemon", Pictures.ofLocal("sob.jpeg", PictureType.JPEG).size(24,
24).create());
```

Template:

```
Fruit Logo:
watermelon {{@watermelon}}
lemon {{@lemon}}
banana {{@banana}}
```

Output:

```
Fruit Logo:
watermelon 🍉
lemon 🍋
banana 🍌
```

Table

The table tag starts with `#`, such as `{{#table}}`, it will be rendered as a Word table with N rows and N columns. The value of N depends on the data of the `table` tag.

Code:

```
put("table", Tables.of(new String[][] {
                new String[] { "Song name", "Artist" }
            }).border(BorderStyle.DEFAULT).create());
```

Template:

```
{{#table}}
```

Output:

Song name	Artist

Numbering

The list tag corresponds to Word's symbol list or numbered list, starting with `*`, such as `{{*number}}`.

Code:

```
put("list", Numberings.create("Plug-in grammar",
                "Supports word text, pictures, table...",
                "Template, not just template, but also style
template"));
```

Template:

```
{{*list}}
```

Output:

- Plug-in grammar
- Supports word text, pictures, table...
- Templates, not just templates, but also style templates

Sections

A section is composed of two tags before and after, the start tag is identified by `?`, and the end tag is identified by `/`, such as `{{?section}}` as the start tag of the sections block, `{{/section} }` is the end

tag, and `section` is the name of this section.

Sections are very useful when processing a series of document elements. Document elements (text, pictures, tables, etc.) located in a section can be rendered zero, one or N times, depending on the value of the section.

False Values or Empty collection

If the value of the section is `null`, `false` or an empty collection, all document elements located in the section will **not be displayed**, similar to the condition of the if statement is `false`.

Datamodel:

```
{
  "announce": false
}
```

Template:

```
Made it,Ma!{{?announce}}Top of the world!{{/announce}}
Made it,Ma!
{{?announce}}
Top of the world!
{{/announce}}
```

Output:

```
Made it,Ma!
Made it,Ma!
```

Non-False Values and Not a collection

If the value of the section is not `null`, `false`, and is not a collection, all document elements in the section will be **rendered once**, similar to the condition of the if statement is `true`.

Datamodel:

```
{
  "person": { "name": "Sayi" }
}
```

Template:

```
{{?person}}
  Hi {{name}}!
{{/person}}
```

Output:

```
  Hi Sayi!
```

Non-Empty collection

If the value of the section is a non-empty collection, the document elements in the section will be **looped once or N times**, depending on the size of the collection, similar to the foreach syntax.

Datamodel:

```
{
  "songs": [
    { "name": "Memories" },
    { "name": "Sugar" },
    { "name": "Last Dance" }
  ]
}
```

Template:

```
{{?songs}}
{{name}}
{{/songs}}
```

Output:

```
Memories
Sugar
Last Dance
```

In the loop, a special tag `{{=#this}}` can be used to directly refer to the object of the current iteration.

Datamodel:

```
{
  "produces": [
    "application/json",
```

```
    "application/xml"
  ]
}
```

Template:

```
{{?produces}}
{{=#this}}
{{/produces}}
```

Output:

```
application/json
application/xml
```

Nesting

Nesting is the merging of another Word template in a Word template, which can be understood as import, include or word document merging, marked with `+`, such as `{{+nested}}`.

Code:

```
class AddrModel {
  String addr;
  public AddrModel(String addr) {
    this.addr = addr;
  }
}

List<AddrModel> subData = new ArrayList<>();
subData.add(new AddrModel("Hangzhou,China"));
subData.add(new AddrModel("Shanghai,China"));
put("nested",
Includes.ofLocal("sub.docx").setRenderModel(subData).create());
```

Two Word Template:

main.docx:

```
Hello, World
{{+nested}}
```

sub.docx:

```
Address: {{addr}}
```

Output:

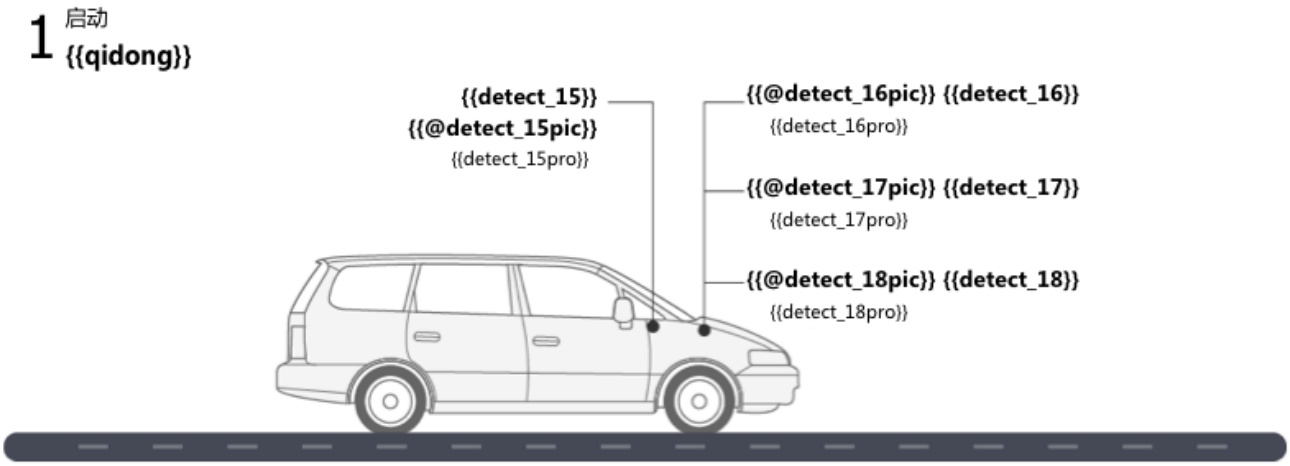
```
Hello, World
Address: Hangzhou,China
Address: Shanghai,China
```

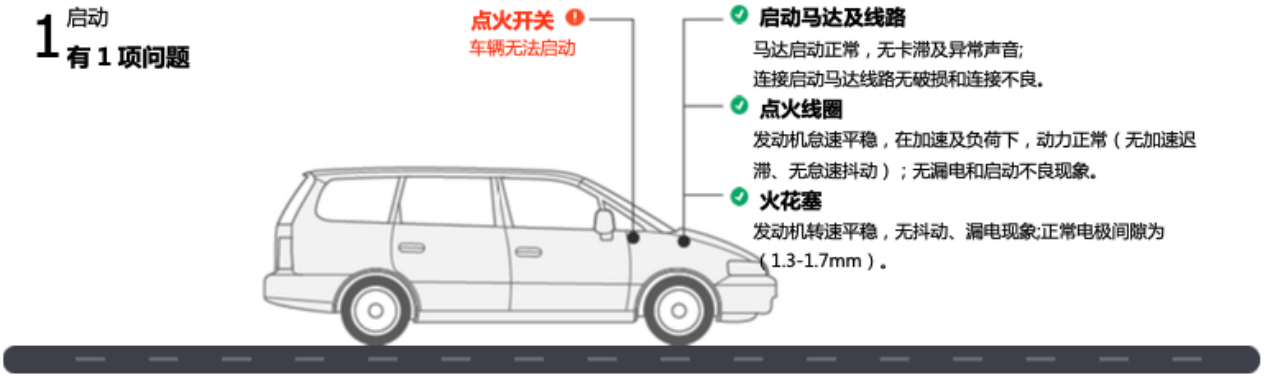
Documentation and examples

中文文档

- Basic Example
- Table Example
- Sections and chart Example
- Textbox Example
- Comment Example
- Example: Write Resume
- Example: Highlighting Code
- Example: Convert Markdown to word
- Example: Convert Swagger to word

For more examples and the source code of all examples, see JUnit testcases.





Contributing

You can join this project in many ways, not limited to the following ways:

- Feedback problems encountered in use
- Share the joy of success
- Update and improve documentation
- Solve and discuss issues

FAQ

See FAQ.