`ppp` Documentation

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1 Abstract

`ppp` allows you to use pandoc in new ways by rendering ASCII-markup to beautiful pictures right from within pandoc's verbatim environments.

See below for illustrative examples and detailed usage instructions.

Bonus on top: Leaving out `ppp` form the typesetting pipeline will still render your document and the verbatims with the ASCII-markup will still stay readable!

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2 General usage

In each case, you will use pandoc's verbatim environment, set the rendering engine and additional options:

```
~~~~~ {.renderer .option1 .option2=value2}
 --- RENDERER-SPECIFIC MARKUP GOES HERE ---
~~~~~
```

2.1 General Renderers

The renderers available to `ppp` are:

- ditaa
- yuml diagrams:
  - class diagramas (cf. Figure 6)
  - usecase diagramas (cf. Figure 7)
  - activity diagramas (cf. Figure 8)
- dot
- neato
- rdfdot
- plantuml

2.2 General Options

This is a list of the general options, compatible with any type of renderer:

- `.scale=90%`
- `.label=fig:my-figure`
- `.title="Some label for the figure"`

---

3 ditaa Diagrams

In order to generate `ditaa`-diagrams, ditaa needs to be installed.

For an exhaustive list of options and possibilities, please check the ditaa homepage.

3.1 ditaa Options

Apart from the General Options, the possible options specific to ditaa are:

- `.rounded-corners`
- `.no-shadows`
- `.no-antialias`
- `.no-separation`

3.2 ditaa Examples

Using ditaa, the following markup will produce Figure **??**.

```
~~~~~ {.ditaa .rounded-corners .no-shadows .scale=90%
       .title="The ppp and pandoc pipeline"
       .label=fig:pipeline-overview
       .no-antialias .no-separation}
# Caution! These lines actually would have to be on *one* line only!
+-----------------+       +--------+           +--------------------+
| markdown source |------>| ppp    |------*--->| prōcessed markdown |
+-----------------+       +--------+      |    +--------------------+
                              |           \--->| image files        |
                    +-------------------+       +--------------------+
                    | diagram creation |
                    +-------------------+
                    | ditaa/dot/rdfdot |
                    +-------------------+
~~~~~
```

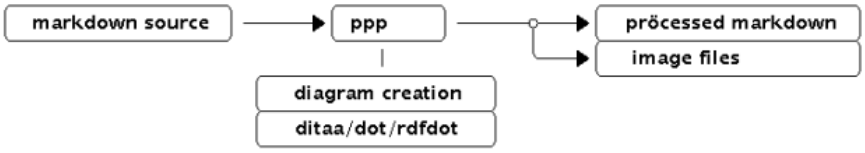

Figure 1: “The ppp and pandoc pipeline”

As a contrast, turning off several options, ditaa will produce an output as in Figure 3:

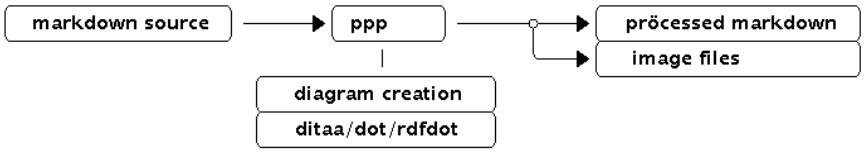

Figure 2: “The ppp and pandoc pipeline”

```
~~~~~ {.ditaa .scale=90% .title="The ppp and pandoc pipeline #2" .label=fig:pipeline-overview-2}
+-----------------+       +--------+           +--------------------+
| markdown source |------>| ppp    |------*--->| pröcessed markdown |
+-----------------+       +--------+      |    +--------------------+
                              |           \--->| image files        |
                     +------------------+       +--------------------+
                     | diagram creation |
                     +------------------+
                     | ditaa/dot/rdfdot |
                     +------------------+
~~~~~
```

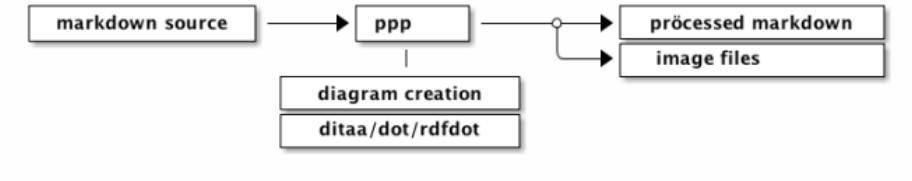

Figure 3: “The ppp and pandoc pipeline #2”

---

4 dot Diagrams

`dot` rendering is done through GraphViz's engine. Please cf. Graphviz's Documentation for exact usage specifics on the usage of `dot`.

4.1 dot Options

- currently none apart from the General Options

4.2 dot Examples

With `dot` as the *renderer*, the following markup produces the figure as seen in Figure 4.

```
~~~~~ {.dot .scale=50% .title=dot Finite State Automaton .label=fig:dot-fsa}
digraph finite_state_machine {
  rankdir=LR;
  node [shape = doublecircle]; LR_0 LR_3 LR_4 LR_8;
  node [shape = circle];
  LR_0 -> LR_2 [ label = "SS(B)" ];
  LR_0 -> LR_1 [ label = "SS(S)" ];
  LR_1 -> LR_3 [ label = "S($end)" ];
  LR_2 -> LR_6 [ label = "SS(b)" ];
  LR_2 -> LR_5 [ label = "SS(a)" ];
  LR_2 -> LR_4 [ label = "S(A)" ];
  LR_5 -> LR_7 [ label = "S(b)" ];
  LR_5 -> LR_5 [ label = "S(a)" ];
  LR_6 -> LR_6 [ label = "S(b)" ];
  LR_6 -> LR_5 [ label = "S(a)" ];
  LR_7 -> LR_8 [ label = "S(b)" ];
  LR_7 -> LR_5 [ label = "S(a)" ];
  LR_8 -> LR_6 [ label = "S(b)" ];
  LR_8 -> LR_5 [ label = "S(a)" ];
}
~~~~~
```

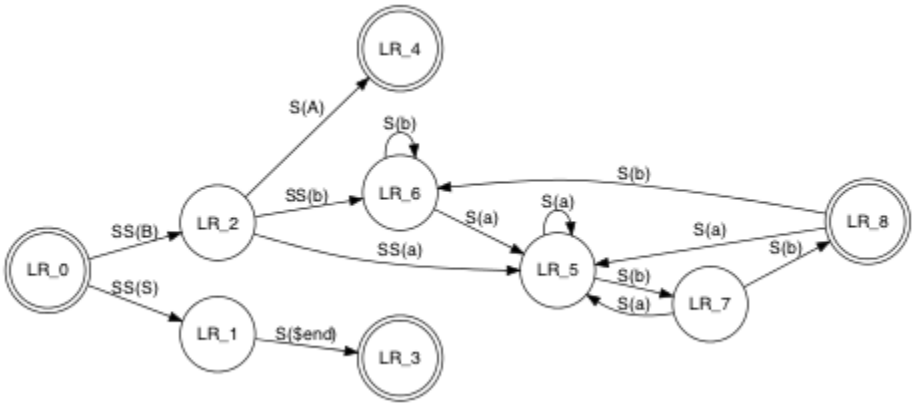

Figure 4: dot Finite State Automaton

5 neato Diagrams

`neato` diagrams behave very similarly to dot Diagrams. Please cf dot Diagrams for more information

5.1 neato Options

- same as dot Options

5.2 neato Examples

The following example produces Figure 5.

```
~~~~~ {.neato .scale=80% .title=neato diagram .label=fig:neato-diagram}
graph G {
  n0 -- n1 -- n2 -- n3 -- n0;
}
~~~~~
```

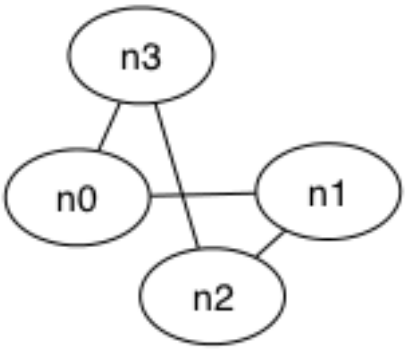

Figure 5: neato diagram

6 yUML

yUML needs a network connection and uses http://yuml.me as the rendering service.

6.1 yUML Options

Options specific to yUML can be:

- `.type=`: any of `[ class, activity, usecase ]`
- `.style=`: any of `[ scruffy, nofunky, plain ]`
- `.direction=`: any of `[ LR, RL, TD, ]`

6.2 yUML Examples

6.2.1 yUML Class diagrams

With *yUML* as the renderer, setting `.type=class` and using the style `.style=nofunky`, the following markup produces Figure 6.

```
~~~~ {.yuml .style=nofunky .type=class .direction=LR .scale=100% .title=yUML class diagram .label=fig:yuml-class-diagram}
[Customer] +1 ->        *[Order]
[Order]   ++1 -items>   *[LineItem]
[Order]       -0..1>     [PaymentMethod]
~~~~
```

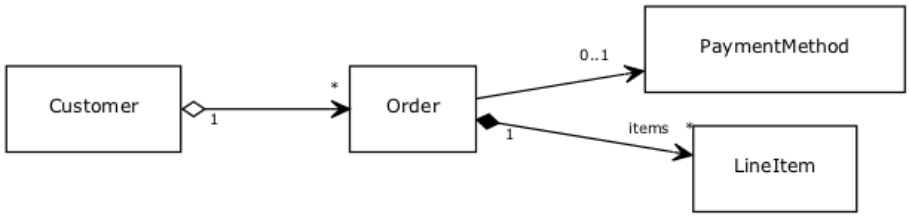

Figure 6: yUML class diagram

6.2.2 yuml Usecase diagrams

With `scruffy` style and `.type=usecase`, the following example produces Figure 7.

```
~~~~ {.yuml .style=scruffy .type=usecase .title=yUML usecase diagram .label=fig:yuml-usecase-diagram}
// Cool Use Case Diagram
[Customer]-(Make Cup of Tea)
(Make Cup of Tea)<(Add Milk)
(Make Cup of Tea)>(Add Tea Bag)
~~~~
```

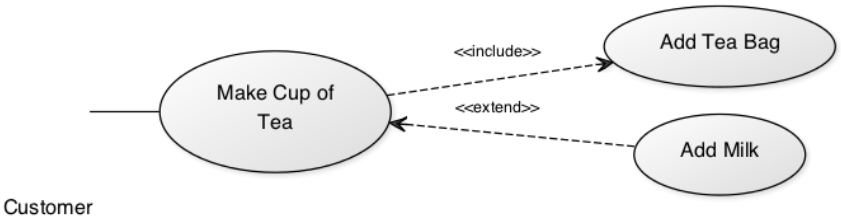

Figure 7: yUML usecase diagram

6.2.3 yuml Activity diagrams

Lastly, using `.type=activity` and `.style=plain` the following example produces Figure 8.

```
~~~~ {.yuml .style=plain .type=activity .title=yUML activity Diagram .label=fig:yuml-activity-diagram}
(start)->|a|,|a|->(Make Coffee)->|b|,|a|->(Make Breakfast)->|b|,|b|-><c>[want more coffee]->(Make Coffee),<c>[satisfied]->(end)
~~~~
```

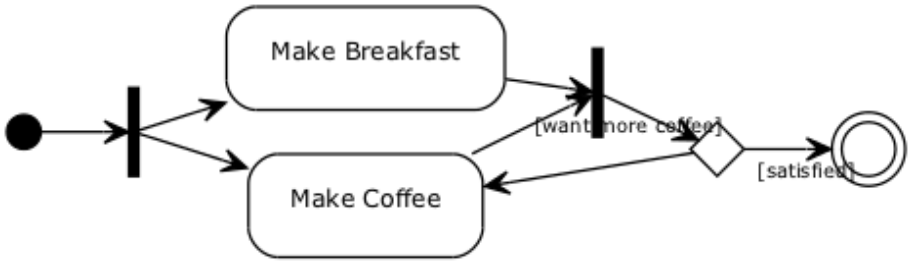

Figure 8: yUML activity Diagram

7 plantuml

plantuml – based on graphviz –, has an extensive feature set

7.1 plantuml Options

- *General Options*

7.2 plantuml Examples

7.2.1 plantuml Example 1

With *plantuml* as the renderer, the following markup produces Figure 9.

```
~~~~ {.plantuml .scale=60% .title=PlantUML Example 1 .label=fig:plantuml-example-1}
@startuml
scale 350 width
[*] --> NotShooting

state NotShooting {
  [*] --> Idle
  Idle --> Configuring : EvConfig
  Configuring --> Idle : EvConfig
}

state Configuring {
  [*] --> NewValueSelection
  NewValueSelection --> NewValuePreview : EvNewValue
  NewValuePreview --> NewValueSelection : EvNewValueRejected
  NewValuePreview --> NewValueSelection : EvNewValueSaved

  state NewValuePreview {
     State1 -> State2
  }

}
@enduml
~~~~
```

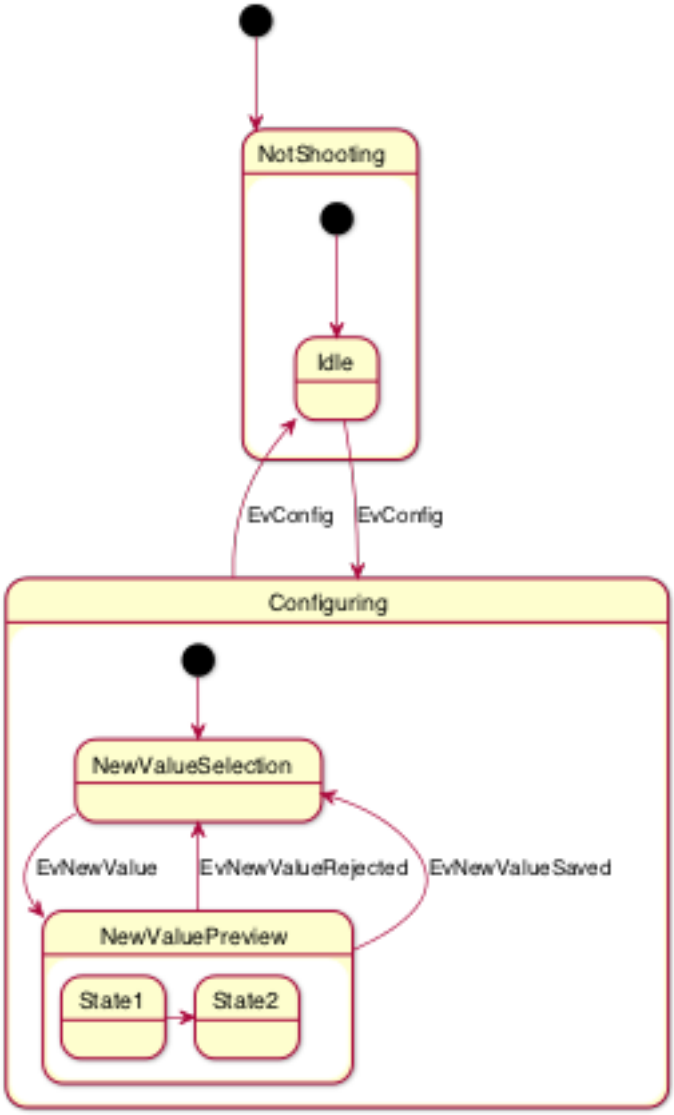

Figure 9: PlantUML Example 1

7.2.2 plantuml Example 2

If the colors don't match your taste exactly, add `skinparam monochrome true` to retrieve Figure 10.

~~~~ {.plantuml .scale=120% .title=PlantUML Example 2 .label=fig:plantuml-example-2}
@startuml

skinparam monochrome true

actor User
participant "First Class" as A
participant "Second Class" as B
participant "Last Class" as C

User -> A: DoWork
activate A

A -> B: Create Request
activate B

B -> C: DoWork
activate C
C --> B: WorkDone
destroy C

B --> A: Request Created
deactivate B

A --> User: Done
deactivate A

@enduml
~~~~

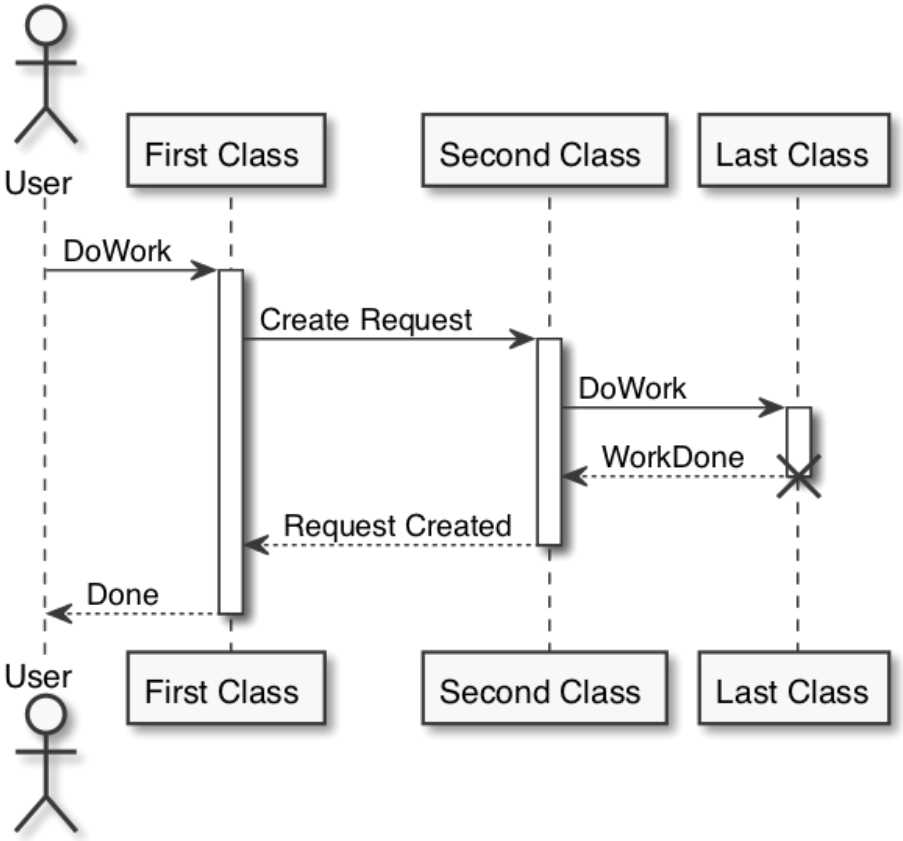

Figure 10: PlantUML Example 2

8 rdfdot Diagrams

8.1 rdfdot Options

- currently none apart from the General Options

8.2 rdfdot Examples

The following example produces Figure 11 on page 19.

```
~~~~~ {.rdfdot .scale=150% .title=rdfdot Diagram .label="fig:rdfdot-diagram"}
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
@base <http://example.com/> .
<alice> foaf:name "Alice" ;
        foaf:knows [ foaf:name "Bob" ] .
~~~~~
```

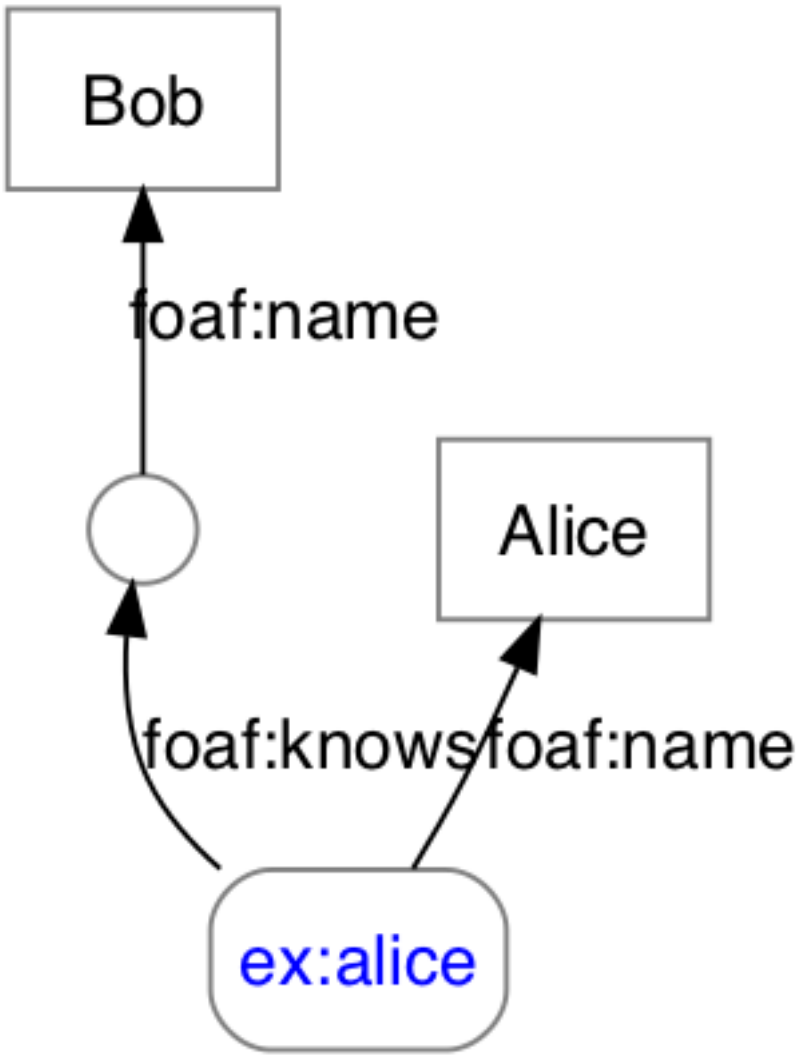

Figure 11: rdfdot Diagram

9 List of options

Renderer	Option	possible values
General	`.scale`	e.g. `120%`
	`.label`	`fig:my-figure`
	`.title`	`"Some label for the figure"`
ditaa	`.rounded-corners`	
	`.no-shadows`	
	`.no-antialias`	
	`.no-separation`	
dot	N/A	
neato	N/A	
yUML	`.type=`	any of `[ class`, `activity`, `usecase ]`
	`.style=`	any of `[ scruffy`, `nofunky`, `plain ]`
	`.direction=`	any of `[ LR`, `RL`, `TD`, `]`
rdfdot	N/A	

Table 1: List of options

10 List of homepages and documentation to renderers

Renderer	Links
ppp	(this document)
	https://metacpan.org/release/App-pandoc-preprocess
	https://github.com/xdbr/p5-App-pandoc-preprocess
ditaa	http://ditaa.sourceforge.net/
dot	http://www.graphviz.org/
neato	http://www.graphviz.org/
yUML	http://yuml.me/
	https://github.com/wandernauta/yuml
rdfdot	https://metacpan.org/pod/RDF::Trine::Exporter::GraphViz
plantuml	http://plantuml.sourceforge.net/

Table 2: List of options

11 Credits and further references

- http://www.asciiflow.com/#Draw: an excellent helper for all things diagram
- http://randomdeterminism.wordpress.com/2012/06/01/how-i-stopped-worring-and-started-using-markdo general introduction to another approach to typesetting and using `gpp`
- https://github.com/nichtich/ditaa-markdown: This is where the original idea came from
- gpp: http://files.nothingisreal.com/software/gpp/gpp.html

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