

Programmieren ohne Schrägstriche

Ein Vortrag über LuaT_εX

Patrick Gundlach
speedata
gundlach@speedata.de

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Leipzig

Idee

1 A short story

A wonderful serenity has taken possession of my entire soul, like these sweet mornings of spring which I enjoy with my whole heart. I am alone, and feel the charm of existence in this spot, which was created for the bliss of souls like mine. I am so happy, my dear friend, so absorbed in the exquisite sense of mere tranquil existence, that I neglect my talents.

- one
- two
- three

TEX

Hello

World

$$\int_c^x = mc^2$$

Idee

1 A short story.

A wonderful serenity has taken possession of my entire soul, like these sweet mornings of spring which I enjoy with my whole heart. I am alone, and feel the charm of existence in this spot, which was created for the bliss of souls like mine. I am so happy, my dear friend, so absorbed in the exquisite sense of mere tranquil existence, that I neglect my talents..

- one.
- two.
- three.

TeX

Hello.

World.

$$E=mc^2$$

1

Detail



Umsetzung

Quelltext

```
\documentclass{article}
\begin{document}
\section{A short story}
```

A wonderful serenity has taken possession of my entire soul, like these sweet mornings of spring which I enjoy with my whole heart. I am alone, and feel the charm of existence in this spot, which was created for the bliss of souls like mine. I am so happy, my dear friend, so absorbed in the exquisite sense of mere tranquil existence, that I neglect my talents.

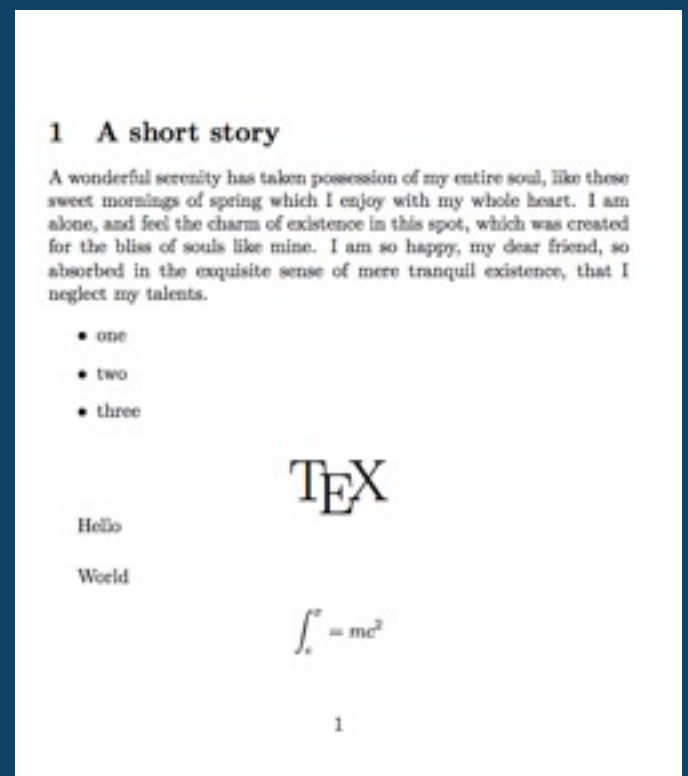
```
\begin{itemize}
  \item one
  \item two
  \item three
\end{itemize}
```

```
\bgroup\fontsize{30}{34}\selectfont
\centerline{\TeX}
\egroup
```

```
\vbox{\strut Hello}\kern .5cm\vbox{\strut World}
```



PDF



Umsetzung

Quelltext

PDF

```
\documentclass{article}
\begin{document}
\section{A short story}
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```
A wonderful serenity has taken possession of my
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T_EX

1 A short story

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Zwischenformat

T_EX

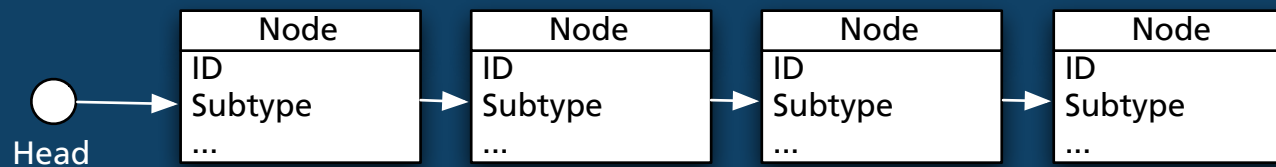
$$\int_0^x = mc^2$$

1

(Datenstruktur)

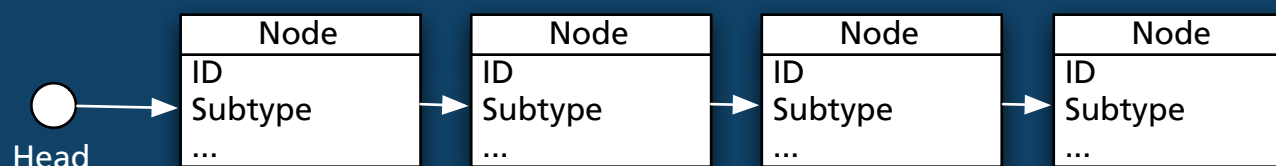
Zwischenformat

- Datenstruktur: Liste von Datensätzen (nodes)



Zwischenformat

- Datenstruktur: Liste von Datensätzen (nodes)



- Beispiel: glyph node (Buchstabe "H")

Node	
ID	37
subtype	0
next	...
char	72
font	0
lang	1
...	...

Glyph node "H"

```

n = node.new(37)
n.char = 72
n.font = 0
n.lang = 1
  
```


Zwischenformat

A wonderful serenity has taken possession of my entire soul, like these sweet mornings of spring which I enjoy with my whole heart. I am alone, and feel the charm of existence in this spot, which was created for the bliss of souls like mine.

vlist	
width	...
height	...
depth	...
list	(Zeiger)

hlist	
width	...
height	...
depth	...
next	(Zeiger)
list	(Zeiger)

hlist	
width	...
height	...
depth	...
next	(Zeiger)
list	(Zeiger)

hlist	
width	...
height	...
depth	...
next	(Zeiger)
list	(Zeiger)

Detail



Detail



PDF-Anweisungen

```
1 0 0 RG 0 0 10 5 re s
```

Detail



PDF-Anweisungen

```
1 0 0 RG 0 0 10 5 re s
```

Rot

Detail



PDF-Anweisungen

1 0 0 RG 0 0 10 5 re s

Rot Rechteck

PDF-Anweisungen

pdf_literal	
data	1 0 0 RG 0 0 10 5 re s
mode	0
next	(Zeiger)
prev	(Zeiger)

```
node.new("whatsit", "pdf_literal")
node.data = "1 0 0 RG 0 0 10 5 re s"
node.mode = 0
node.next = ...
node.prev = ...
```

Schleife

aktueller_knoten = *Anfang der Liste*

solange aktueller_knoten *gültig ist*

untersuche Knoten und füge ggf. PDF-Anweisung ein

gehe zum nächsten Knoten

end

Schleife

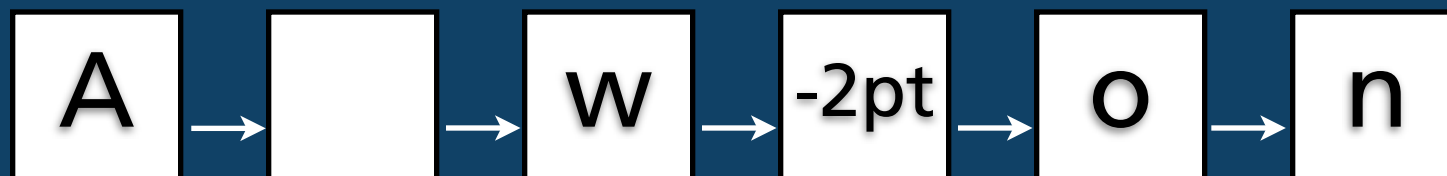
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Schleife

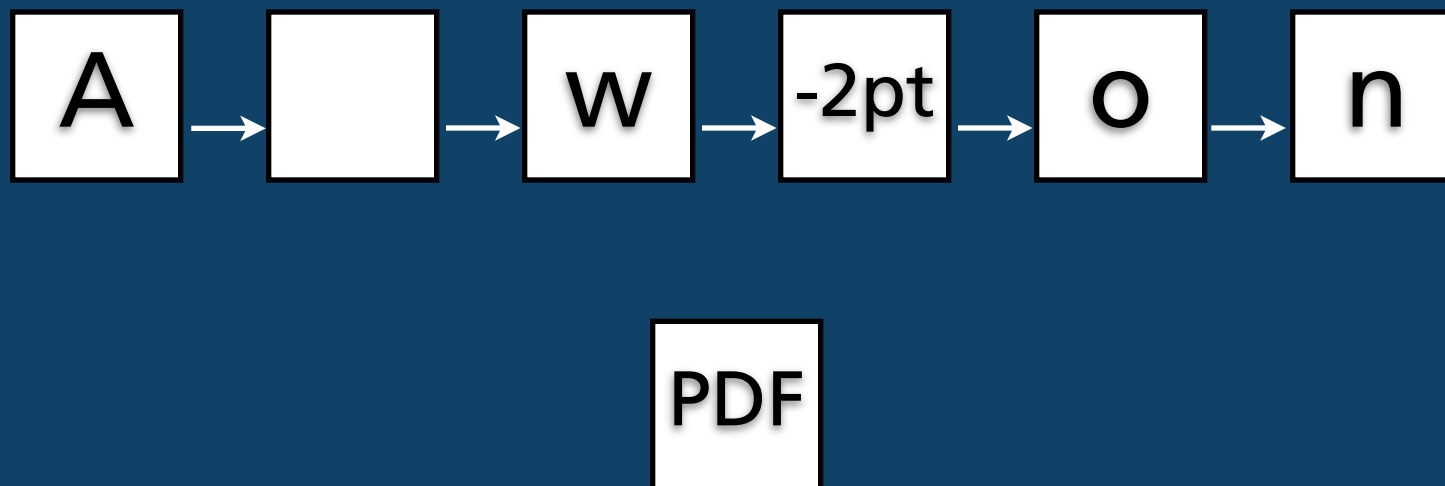
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Schleife

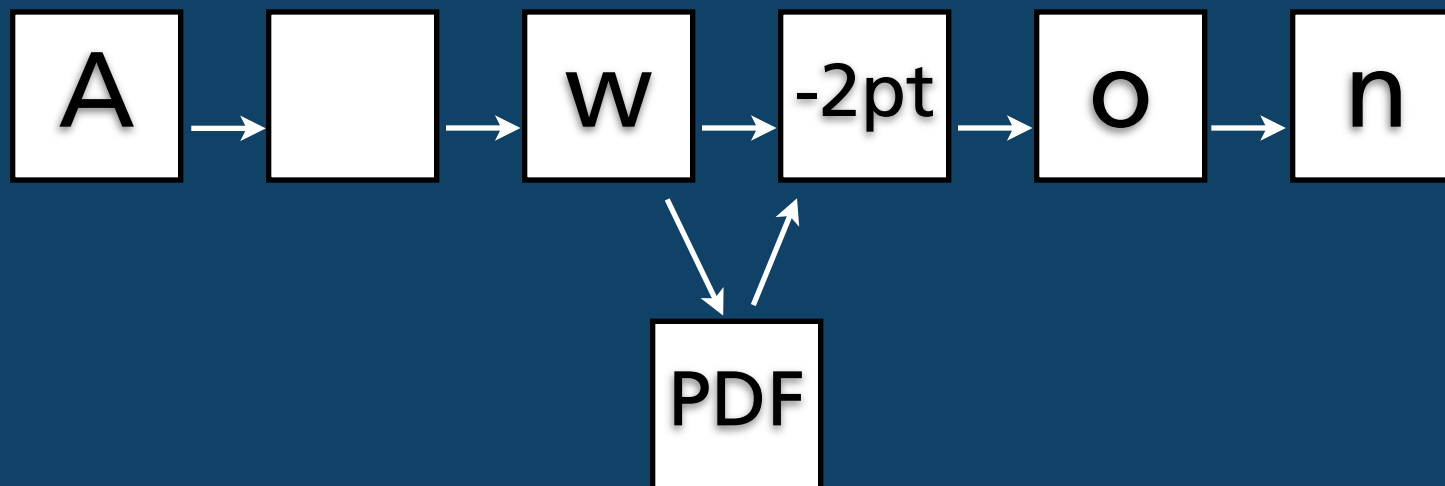
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gehe zum nächsten Knoten

end



Schleife

aktueller_knoten = Anfang der Liste

solange aktueller_knoten gültig ist

wenn der aktuelle Knoten selbst eine Box ist,

untersuche den Inhalt nach derselben Methode

untersuche Knoten und füge ggf. PDF-Anweisung ein

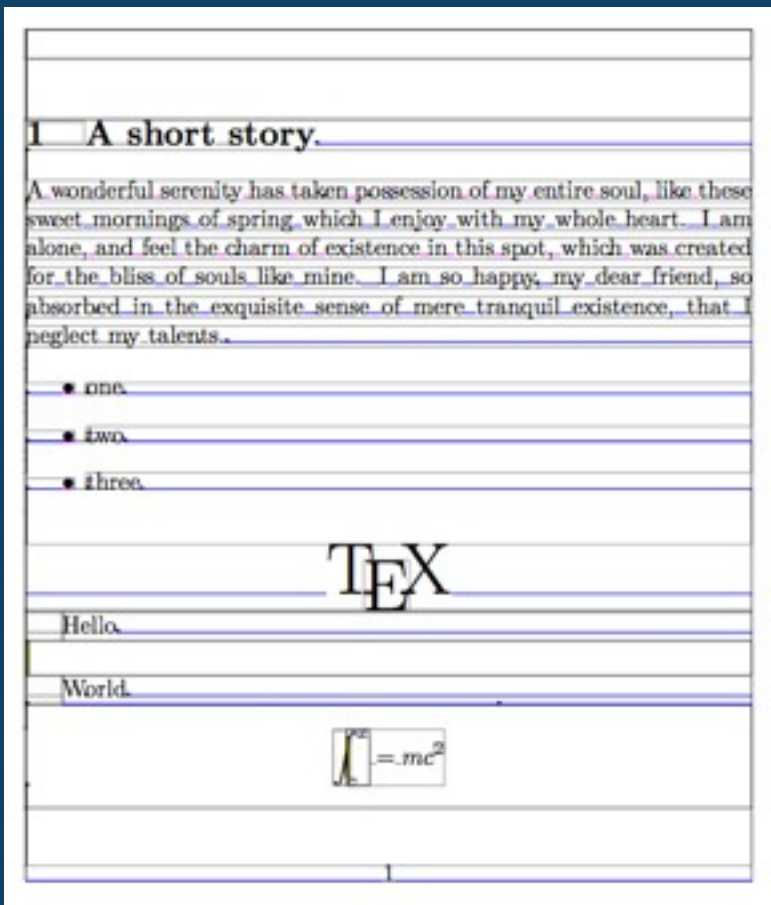
gehe zum nächsten Knoten

end

In Lua

```
aktueller_knoten = head
while aktueller_knoten do
  if aktueller_knoten.id == 11 then -- kern
    rechteck = node.new("whatsit", "pdf_literal")
    rechteck.data = " 1 0 0 RG 0 0 5 10 re s"
    node.insert_before(head, aktueller_knoten, rechteck)
  elseif aktueller_knoten.id == 12 then -- penalty
    ....
  end
  aktueller_knoten = aktueller_knoten.next
end
```

Zurück zum Beispiel



```

\usepackage{atbegshi}
\AtBeginShipout{
  \directlua{
    untersuche_box(
      tex.box["AtBeginShipoutBox"])
  }
}

```