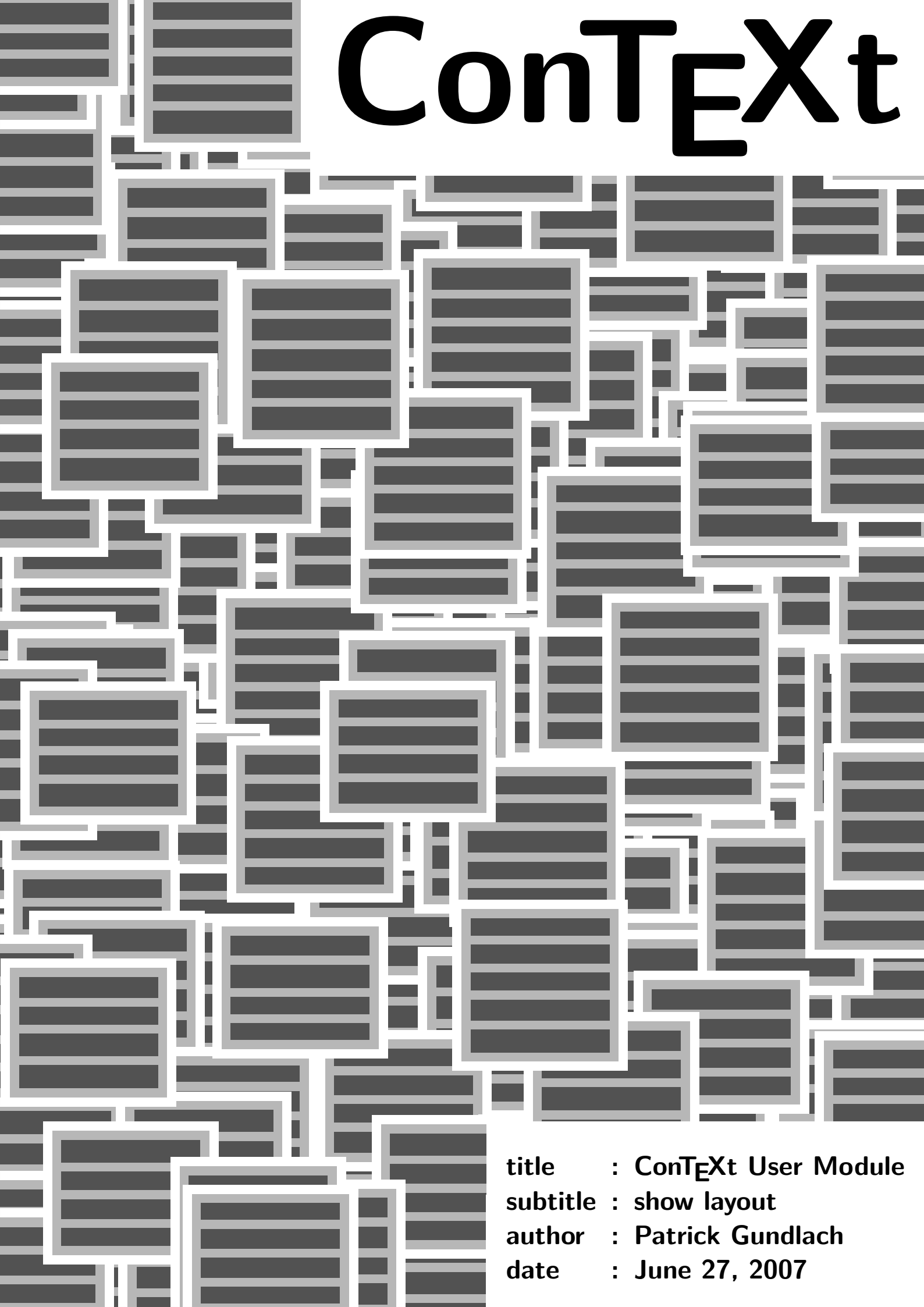

title : ConTEXt User Module
subtitle : show layout
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date : June 27, 2007

Introduction

This third-party module 'layout' draws a representation of the of the layout of the current page and displays the sizes of the widths and heights of the margins, header, footer and text body.

show layout

Usage

Include this module into your ConTeXt files: `\usemodule[t][layout]` and show the layout with `\ShowLayout`.

You can set some parameters using `\SetupShowLayout`. The parameters are: units, digits, round, showmore and graphonly. If graphonly (0/1) is 0, this module shows the lenghts of some text areas. units (cm, mm, in or pt) sets the unit in which the lengths will be displayed, digits (any number ≥ 0) sets the number of digits after the decimal period, round (any number $\neq 0$) states the place where rounding of the displayed numbers should occur (TEX is bad at calculating such things) and showmore (0/1) tells this module to display information about the edge and top/bottom.

Example:

```
\ShowLayout
   [units=cm,
    digits=2,
    round=0.1,
    showmore=1,
    graphonly=1]
```

The idea was taken from the `\layout` command from the layout LaTeX package. (Kent McPherson and others)

show layout

The code

This section is not meant as documentation

```
\newdimen\ShowLayoutdimen

\setvalue{Layoutmm}{0.351459804}  % 2.54/72.27 * 10
\setvalue{Layoutcm}{0.0351459804} % 2.54/72.27
\setvalue{Layoutin}{0.0138370001} %    1/72.27
\setvalue{Layoutpt}{1}

\def\ShowLayoutB(#1.#2)#3{%
 \counttokens #2\to\scratchcounter
 #1\ifnum#3>0%
    \ifnum#3 > \the\scratchcounter \else \scratchcounter=#3 \fi
   \splitofftokens \scratchcounter \from #2 \to\test .\test \fi}

\def\LayoutConvert#1#2#3%
  {\ShowLayoutdimen=\getvalue{ShowLayoutround}pt
   \begingroup
   \scratchdimen#1\relax
   \scratchdimen\getvalue{Layout#2}\scratchdimen
   \advance\scratchdimen by 0.5\ShowLayoutdimen
   \divide\scratchdimen by \ShowLayoutdimen
   \multiply\scratchdimen by \ShowLayoutdimen
   \expandafter\ShowLayoutB\expandafter(\number\withoutpt{\the\scratchdimen}){#3}\thinspace
#2
   \endgroup}

\def\ShowLayoutA#1{%
 \LayoutConvert{#1}%
 {\getvalue{ShowLayoutunits}}%
 {\getvalue{ShowLayoutdigits}}}%

\startuniqueMPgraphic{ShowLayout}{showmore}
vardef swapifnecessary (suffix posa, posb)(expr labelpos) =
  if     ( (labelpos < posa) and (posa > posb))
      or ( (labelpos > posa) and (posa < posb)) :
      save c; %swap 'em
      c:=posa;
      posa:=posb;
      posb:= c;
  fi
enddef;
def layoutshowmark(expr num, vertical, pos, posa, posb, labelpos) =
    save    b,e,c,p,arrow;
    numeric b,e;  pair p[];   path arrow[],c;

    b:=posa;
    e:=posb;

    % p0 is labelposition
    % p1 is from
    % p2 is to
    % p3 is opposite arrow in outer marking
```

show layout

```
9       if labelpos = 0 : % inner label   |<----(n)---->|
           p0 := (.5[b,e], pos);
        else:             % outer label   --->|  |<----(n)
           swapifnecessary (b,e, labelpos);
           p0 := (labelpos, pos);
           p3 := ( if b < labelpos: e-5mm else: e+5mm fi ,pos);
        fi

10      p1 := (b,pos);
        p2 := (e,pos);

11      if vertical:
           p0:=(ypart p0,xpart p0);
           p1:=(ypart p1,xpart p1);
           p2:=(ypart p2,xpart p2);
           p3:=(ypart p3,xpart p3);
        fi
        c:= fullcircle scaled .7cm shifted p0;

12      if (center(c) -- p1) intersectiontimes c = (-1,-1):
          % don't draw the arrows, because there is not enough room for them.
        else:
            arrow1 :=center(c) -- p1 cutbefore (center(c) -- p1) intersectionpoint c ;
            arrow2 :=
               if labelpos = 0 : % inner
                     center(c) -- p2 cutbefore (center(c) -- p2) intersectionpoint c
               else:
                     p3 -- p2
               fi;

13          label (decimal (num), center(c));
            draw c;
            drawarrow arrow1;
            drawarrow arrow2;
        fi

14  enddef;

15  StartPage;
    numeric xpos,ypos;

16  path body,leftmargin,header,footer,rightmargin;

17  draw llcorner Page shifted (BackSpace,0) --
          ulcorner Page shifted (BackSpace,0) dashed evenly;

18  draw urcorner Page shifted (0,-TopSpace) --
          ulcorner Page shifted (0,-TopSpace) dashed evenly;

19  header     := Field [Header]     [Text];
    footer     := Field [Footer]     [Text];
    leftmargin := Field [LeftMargin] [Text];
    rightmargin:= Field [RightMargin][Text];
    body       := Field [Text]       [Text];
```

```
20  pickup pencircle scaled 2pt;

21  draw Page;
    draw leftmargin;
    draw rightmargin;
    draw header;
    draw footer;
    draw body;

22  label ("Body", center (body));
    label ("Header",center (header));
    label ("Left Margin", center (leftmargin));
    label ("Right Margin", center (rightmargin));
    label ("Footer", center (footer));

23  if \MPvar{showmore}=1:
       path top, bot, leftedge, rightedge;

24     top       := Field [Top]       [Text];
       bot       := Field [Bottom]    [Text];
       leftedge  := Field [LeftEdge]  [Text];
       rightedge := Field [RightEdge][Text];

25     draw top;
       draw bot;
       draw leftedge;
       draw rightedge;
    fi

26  pickup pencircle scaled 1pt;

27  layoutshowmark (1, false, .5[ypart(ulcorner Page),Vstep[Top]], 0,BackSpace,0)

28  ypos := Vstep[HeaderSeparator] -1cm;

29  layoutshowmark (2, false, ypos,
                    Hstep[LeftMargin],
                    Hstep[LeftMargin]+Hsize[LeftMargin],0);

30  layoutshowmark (3, false, ypos -1cm,
                    Hstep[LeftMarginSeparator],
                    Hstep[Text],
                    Hstep[Text]+1cm);

31  layoutshowmark (4, false, Vstep[Text]+2cm,
                    Hstep[Text], Hstep[Text]+Hsize[Text],0);

32  layoutshowmark (5, false, ypos,
                    Hstep[RightMargin],
                    Hstep[RightMargin]+Hsize[RightMargin],0);

33  layoutshowmark (6, false, ypos-1cm,
                    Hstep[RightMargin],
                    Hstep[RightMarginSeparator],
                    Hstep[RightMarginSeparator] -1cm);
```

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```
34  xpos:=xpart(ulcorner Page)+BackSpace+1cm;
    layoutshowmark (7, true, xpos, PaperHeight,PaperHeight-TopSpace,0)

35  xpos:=xpos+1cm;
    ypos:=.5[PaperHeight,PaperHeight-TopSpace];
    layoutshowmark (8, true, xpos ,
                    Vstep[Header],
                    Vstep[Header]+Vsize[Header],ypos);

36  xpos:=xpos+1cm;
    layoutshowmark (9, true,xpos,
                    Vstep[HeaderSeparator],
                    Vstep[HeaderSeparator]+Vsize[HeaderSeparator],ypos);

37  xpos:=xpos+1cm;

38  if \MPvar{showmore}=1:
       % top
       layoutshowmark (17, true, xpos,
                       Vstep[Top],
                       Vstep[Top]+Vsize[Top], ypos);

39     xpos:=xpos+1cm;
       layoutshowmark (18, true, xpos,
                       Vstep[TopSeparator],
                       Vstep[TopSeparator]+Vsize[TopSeparator], ypos);

40  fi

41  layoutshowmark (10, true,Hstep[RightMarginSeparator]-2cm,
                    Vstep[Header]+Vsize[Header],
                    Vstep[Footer],0);

42  xpos:=xpart(ulcorner Page)+BackSpace+2cm;
    ypos:=.5(Vstep[Footer]);

43  layoutshowmark (11, true,xpos,
                    Vstep[FooterSeparator],
                    Vstep[FooterSeparator]+Vsize[FooterSeparator],ypos);

44  xpos:=xpos+1cm;
    layoutshowmark (12, true,xpos,
                 Vstep[Footer],Vstep[Footer]+Vsize[Footer],ypos);

45  xpos:=xpos+1cm;

46  if \MPvar{showmore}=1:
       % bottom
       layoutshowmark (19, true, xpos,
                       Vstep[Bottom],
                       Vstep[Bottom]+Vsize[Bottom], ypos);
       xpos:=xpos+1cm;
       layoutshowmark (20, true, xpos,
                       Vstep[BottomSeparator],
                       Vstep[BottomSeparator]+Vsize[BottomSeparator], ypos);
```

```
47  fi

48  if \MPvar{showmore}=1:

49     ypos := Vstep[HeaderSeparator] -3cm;

50     % LeftEdge
       layoutshowmark (13, false, ypos,
                       Hstep[LeftEdge],
                       Hstep[LeftEdge]+Hsize[LeftEdge],Hstep[Text]+1cm);
       ypos := ypos-1cm;
       % LeftEdgeSeparator
       layoutshowmark (14, false, ypos,
                       Hstep[LeftEdgeSeparator],
                       Hstep[LeftEdgeSeparator]+Hsize[LeftEdgeSeparator],
                       Hstep[Text]+1cm);

51     ypos := Vstep[HeaderSeparator] -3cm;

52     layoutshowmark (15, false, ypos,
                       Hstep[RightEdge],
                       Hstep[RightEdge]+Hsize[RightEdge],
                       Hstep[RightMarginSeparator] -1cm);

53     ypos := ypos-1cm;

54     layoutshowmark (16, false, ypos,
                       Hstep[RightEdge],
                       Hstep[RightEdgeSeparator],
                       Hstep[RightMarginSeparator] -1cm);

55  fi

56  currentpicture := currentpicture scaled .5;

57  \stopuniqueMPgraphic
    \defineoverlay[ShowLayout][\uniqueMPgraphic{ShowLayout}]

58  \def\SetupShowLayout{\dosingleempty\getparameters[ShowLayout]}
    \SetupShowLayout[units=pt,digits=1,round=0.1,showmore=0,graphonly=0]

59  \def\ShowLayout{\dosingleempty\doShowLayout}

60  \def\doShowLayout[#1]{%
       \getparameters[ShowLayout][#1]
       \setMPvariables[ShowLayout][showmore=\getvalue{ShowLayoutshowmore}]
       \framed[width=.5\paperwidth,
               height=.5\paperheight,
               background=ShowLayout,
               frame=off,
               ]{}%
    \ifnum\getvalue{ShowLayoutgraphonly}=0
          \bgroup\tfxx
    \startcolumns[n=2]
    \starttabulate[|r|l|]
    \NC 1 \NC backspace      \ShowLayoutA{\the\backspace} \NR
    \NC 2 \NC leftmargin     \ShowLayoutA{\the\leftmarginwidth}\NR
```

show layout

```
\NC 3 \NC leftmargindistance \ShowLayoutA{\the\leftmargindistance}\NR
\NC 4 \NC width           \ShowLayoutA{\the\makeupwidth}\NR
\NC 5 \NC rightmargin     \ShowLayoutA{\the\rightmarginwidth}\NR
\NC 6 \NC rightmargindistance \ShowLayoutA{\the\rightmargindistance}\NR
\NC 7 \NC topspace        \ShowLayoutA{\the\topspace}\NR
\NC 8 \NC header          \ShowLayoutA{\the\headerheight}\NR
\NC 9 \NC headerdistance \ShowLayoutA{\the\headerdistance}\NR
\NC 10\NC height          \ShowLayoutA{\the\makeupheight}\NR
\NC 11\NC footerdistance \ShowLayoutA{\the\footerdistance}\NR
\NC 12\NC footer          \ShowLayoutA{\the\footerheight}\NR
\ifnum\getvalue{ShowLayoutshowmore}=1%
\NC 13\NC leftedge        \ShowLayoutA{\the\leftedgewidth}\NR
\NC 14\NC leftedgedistance  \ShowLayoutA{\the\leftedgedistance}\NR
\NC 15\NC rightedge         \ShowLayoutA{\the\rightedgewidth}\NR
\NC 16\NC rightedgedistance  \ShowLayoutA{\the\rightedgedistance}\NR
\NC 17\NC top          \ShowLayoutA{\the\topheight}\NR
\NC 18\NC topdistance          \ShowLayoutA{\the\topdistance}\NR
\NC 19\NC bottom          \ShowLayoutA{\the\bottomheight}\NR
\NC 20\NC bottomdistance          \ShowLayoutA{\the\bottomdistance}\NR
\fi
\NC   \NC paperwidth      \ShowLayoutA{\the\paperwidth}\NR
\NC   \NC paperheight     \ShowLayoutA{\the\paperheight}\NR
\stoptabulate
\stopcolumns
\egroup
\fi
}
```