A model kit ...
Calendars, the PocketDiary Module and Further Applications of it

Willi Egger

BachoTeX Meeting 2023
Introduction

<table>
<thead>
<tr>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
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<td>14 21 28</td>
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<td></td>
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</tr>
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<td>9 16 23 24</td>
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<table>
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<td>9 16 23 30</td>
</tr>
<tr>
<td>Sun 8</td>
<td>15 22 29</td>
<td>Sun 3</td>
<td>10 17 24 31</td>
</tr>
</tbody>
</table>

A Personal Organizer: PocketDiary

Willi Egger

EuroBachoTEX 2011
The PocketMod
The PocketMod - Contents

- **Available on:**
  https://pocketmod.com/

- **Elements:**
  - Calendars: Day-, Week-, Month-, Year-calendar
  - Templates: Notes, Budget, Cashbook, Grocery-, Shopping-, Todo-, Top 5-, Wish-list, Contact-forms, Emergency-form ...
PocketDiary Example 1

Contact
Name:
Address:
Zip:
Place:
Country:
Phone:
e-mail:
Name:
Address:
Zip:
Place:
Country:
Phone:
e-mail:

Todo
PocketDiary 1
3 Mon May 2023
Recycle

PocketDiary 2
2 Tue May 2023
Meeting

PocketDiary 3
1 Wed May 2023
Work

PocketDiary 4
2 Thu May 2023
Shopping

PocketDiary 5
3 Fri May 2023
Study

PocketDiary 6
4 Sat May 2023
Exercise

PocketDiary 7
5 Sun May 2023
Dinner

PocketDiary 8
6 Mon May 2023
Movie

PocketDiary 9
7 Tue May 2023
Coffee

PocketDiary 10
8 Wed May 2023
Walking

PocketDiary 11
9 Thu May 2023
Gym

PocketDiary 12
10 Fri May 2023
Dance

PocketDiary 13
11 Sat May 2023
Picnic

PocketDiary 14
12 Sun May 2023
Relax

PocketDiary 15
13 Mon May 2023
Cook

PocketDiary 16
14 Tue May 2023
Talk

PocketDiary 17
15 Wed May 2023
Study

PocketDiary 18
16 Thu May 2023
Study

PocketDiary 19
17 Fri May 2023
Study

PocketDiary 20
18 Sat May 2023
Study

PocketDiary 21
19 Sun May 2023
Study

PocketDiary 22
20 Mon May 2023
Study

PocketDiary 23
21 Tue May 2023
Study

PocketDiary 24
22 Wed May 2023
Study

PocketDiary 25
23 Thu May 2023
Study

PocketDiary 26
24 Fri May 2023
Study

PocketDiary 27
25 Sat May 2023
Study

PocketDiary 28
26 Sun May 2023
Study
PocketDiary - Contents

- **Calendars:**
  Day-, Weekend-, (Next-) Week-, (Next-) Month-, (Next-) Year-calendar
- Christian holidays: displayed on day-, weekend- and week-calendars,
- **Templates:**
  Notes (lines, full-grid, blank), Todo-list, Contacts, Lost-return-to
- **Multi lingual interface:**
  Dutch, English, French, German, Italian, Polish and Spanish
- **Moon data:**
  Calculate moon cycle in days, main phases as pictograms
- **Sun data:**
  Calculate sunrise and sunset time, display light hours
Extending Templates - What to Do

Easy to prepare a custom template:

- Create a buffer with a name
- Create the required contents
- Replace one of the layout-variables with the chosen buffer name in the user-file
Extending Templates - Example

\startbuffer[MyTodo]
\defineoverlay
[Textarea]
[\useMPgraphic{Todo}]
\setupbackgrounds
[text]
[text]
[background=Textarea]
\setupheadertexts
[\bf \labeltext{todo} \hfill]
\strut
\page[yes]
\stopbuffer

\startuniqueMPgraphic{Todo}
numeric w; w:= OverlayWidth;
numeric h; h:= floor(OverlayHeight/8mm);
path p,q;
p := unitsquare xscaled OverlayWidth
yscaled OverlayHeight;
q:= llcorner p -- lrcorner p;
for i = 0 upto h :
draw q shifted (0,i*7mm)
withpen pencircle scaled .5pt
withcolor \MPcolor{Grid};
label.top(textext("\tfd \symbol[\HollowBox]"),
point 0 of q
shifted (2mm,i*7mm));
endfor;
\stopuniqueMPgraphic
\setvariables
[PocketDiaryLayout]
[Page1=Dayplan,
  Page2=Weekendplan,
  Page3=Weekcurrentplan,
  Page4=Weeknextplan,
  Page5=Monthcurrentplan,
  Page6=Monthnextplan,
  Page7=Yearcurrentplan,
  Page8=MyTodo]  

--- Tell on which page the template should appear.
The Contents of the User-File - General

\usemodule[pocketdiary]
\setupbodyfont[ibmplex,rm,8pt]
\definefontfeature[f:tabular][tnum=yes]\addfeature[f:tabular]
\mainlanguage[en]
\setuppapersize[A6][A4,landscape]
The Contents of the User-File - Calendar Data

\setvariables
  [PocketDiary]
  [WeekDay=1,
   Week=15,
   Month=4,
   Year=2023,
   Nextyear=yes,
   Daybyday=no]

If “Daybyday = yes” then the first 6 pages are filled with 5 times a single day and the weekend is 1 page. The pages 7 and 8 are filled with what is set in PockedDiaryLayout for page 7 and 8.
The Contents of the User-File - Layout

\setvariables
[PocketDiaryLayout]
[Page1=Dayplan,
  Page2=Weekendplan,
  Page3=Weekcurrentplan,
  Page4=Weeknextplan,
  Page5=Monthcurrentplan,
  Page6=Monthnextplan,
  Page7=Yearcurrentplan,
  Page8=Lost-Returnto]
The Contents of the User-File - Element names

Names of included templates: You are allowed to use the same template on multiple pages.

Dayplan
Weekcurrentplan
Weekendplan
Weeknextplan
Monthcurrentplan
Monthnextplan
Yearcurrentplan
Yearnextplan
Lines
Blank
Caro
Todo
Contact
Lost-Returnto
The Contents of the User-File - Personal Data

\setvariables
[PocketDiaryAddress]
[Familyname={YourFamilyName},
Forename={YourFirstName},
Street=Pine Lane
Zipcode=2080,
City=YourTown,
Country=YourCountry,
Phone={\dots},
Mobile={\dots},
E-mail={\dots},
Web={\dots}]
The Contents of the User-File - Footer and Color Setup

\setvariables
  [PocketDiaryFooter]
  [Lefttext=\getvariable{PocketDiaryAddress}{Forename}\getvariable{PocketDiaryAddress}{Familyname},]
  Centertext=,
  Righttext=\pagename

\setvariables
  [PocketDiaryColors]
  [Separatorline=blue,
  Gridline={s=0.55}]
The Contents of the User-File - Geo-Position

\setvariables
  [PocketDiaryGeoPosition]
  [lat=52.467860, 
    lon=16.981240, 
    timezoneoffset=1, 
    continent=EU] % EU, US or leave empty for no DST
The Contents of the User-File - Typesetting

\starttext
  % this can be uncommented in t-pocketdiary.tex
  \setuparranging[1*8]

  \getbuffer[Pocketdiary]

\stopext
The New Version

- Adapting the module from pdfTeX to MKIV and LMTX resp.
- Make the output in the form of a CLD (ConTeXt Lua Document)
- Add **moon phase** calculations:
  The formulae are provided by SubsySTEMs, an American education institute;
  Simplified approach to the calculation
  Accuracy is for the calendar purpose okay i.e. ± 1 day
- Add **sun data** calculations:
  Work from Alexander Yakushev, lua-module
  Based on algorithms by the United States Naval Observatory, Washington
  Link: http://williams.best.vwh.net/sunrise_sunset_algorithm.htm (unavailable)
  Algorithm is accurate ±1 minute compared to OpenWeatherMap
  https://openweathermap.org/
The Module Structure

t-pocketdiary
  t-pocketdiary.mkiv (setups)
  t-pocketdiary.lua (cld creation)
  t-calendar.lua (calendar operations)
  PocketDiary.mkiv (user file)

Moon-phase
  t-moonphase.lua (moon phase calculations)
  moons-MP.mkiv (moon pictograms)

Solar
  t-solar.lua (sun data calculations)
  sun-MP.mkiv (sun pictograms)

The module is available from the context garden and from CTAN

t-pocketdiary
The Work-Flow

Begin Pocket Diary

- Module files + user file
- \TeX / Con\TeX t

- Lua
  - Calculate calendars
  - Calculate moon data
  - Calculate sun data

- Lua
  - Prepare CLD

- \TeX
  - Pocket Diary

End Pocket Diary
Example Moon and Sun Data

7 Pt. Wielki Piątek Kwiecień 2023
Dzień lunarny: 16
  6:13
  19:36
  13:22

PocketDiary 1 Willi, 2023
<table>
<thead>
<tr>
<th>Day</th>
<th>Notes</th>
<th>Calendar Reference</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Pn</td>
<td>93/365</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Wt</td>
<td>94/365</td>
<td>⚪ 6:20</td>
<td>19:30</td>
</tr>
<tr>
<td>5 Śr</td>
<td>95/365</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Czw</td>
<td>96/365</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Pt</td>
<td>97/365 Wielki Piątek</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Sob</td>
<td>98/365</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Ndz</td>
<td>99/365 Niedziela Wielkanocna</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Start with turning the print-side upside down. Then make two mountain-folds as indicated with the straight lines in the figure. Unfold the paper and turn it face up and by 90° to the left. Make a valley-fold with the lower part of the sheet onto the previously made mountain-fold. Unfold and rotate the sheet by 180°. Make another valley-fold as described before. Unfold the sheet.
Take a sharp knife and a ruler. Cut the paper open between cutting points A and B.
Now you can fold the booklet. First, fold the paper again lengthwise. Then hold the double folded paper with the mountain-fold up. Push from both sides towards the centre in order to get a form similar to figure 8. Then fold the upper double-page Page 4 Page 5 Page 6 Page 7 in direction B, the lower double-page in direction C and finally the lefthand double-sided page in direction D.
Folding the Pocket Diary 3

Before creasing the booklet at the spine, it is worthwhile to put the section down on the table and adjust folds where needed. Finally the spine is creased preferably with a bone folder. With needle and thread you might make a ‘cahier’-stitch to keep the booklet together.
Is this module any good for other applications?
Examples

- Calendar with 1 day per page
- Calendar with 1 week on 2 facing pages
- Menu calendar
- Sun and moon calendar
- Photo calendar

These examples are available from the context garden and from CTAN as a module `t-calendar-examples`
<table>
<thead>
<tr>
<th>January</th>
<th>Week: 1 2023</th>
<th>January</th>
<th>Week: 1 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Mon 2/365</td>
<td></td>
<td>6 Fri 6/365 Epiphany</td>
<td></td>
</tr>
<tr>
<td>3 Tue 3/365</td>
<td></td>
<td>7 Sat 7/365</td>
<td></td>
</tr>
<tr>
<td>4 Wed 4/365</td>
<td></td>
<td>8 Sun 8/365</td>
<td></td>
</tr>
</tbody>
</table>
Menu-Calendar
# Sun- and Moon-Calendar

## May 2023

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Lunar days</th>
<th>Time (H:M:S)</th>
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<tbody>
<tr>
<td><strong>1 Mon</strong></td>
<td>121</td>
<td>10</td>
<td>5:09 20:10 15:01</td>
</tr>
<tr>
<td><strong>2 Tue</strong></td>
<td>122</td>
<td>11</td>
<td>5:07 20:12 15:05</td>
</tr>
<tr>
<td><strong>3 Wed</strong></td>
<td>123</td>
<td>12</td>
<td>5:05 20:13 15:08</td>
</tr>
<tr>
<td><strong>4 Thu</strong></td>
<td>124</td>
<td>13</td>
<td>5:03 20:15 15:12</td>
</tr>
<tr>
<td><strong>5 Fri</strong></td>
<td>125</td>
<td>14</td>
<td>5:01 20:17 15:16</td>
</tr>
<tr>
<td><strong>6 Sat</strong></td>
<td>126</td>
<td>15</td>
<td>4:59 20:19 15:20</td>
</tr>
<tr>
<td><strong>7 Sun</strong></td>
<td>127</td>
<td>16</td>
<td>4:57 20:20 15:23</td>
</tr>
<tr>
<td><strong>8 Mon</strong></td>
<td>128</td>
<td>17</td>
<td>4:55 20:22 15:27</td>
</tr>
<tr>
<td><strong>9 Tue</strong></td>
<td>129</td>
<td>18</td>
<td>4:53 20:24 15:30</td>
</tr>
<tr>
<td><strong>10 Wed</strong></td>
<td>130</td>
<td>19</td>
<td>4:51 20:26 15:34</td>
</tr>
<tr>
<td><strong>11 Thu</strong></td>
<td>131</td>
<td>20</td>
<td>4:50 20:27 15:37</td>
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<td>4:48 20:29 15:41</td>
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<td><strong>13 Sat</strong></td>
<td>133</td>
<td>22</td>
<td>4:46 20:31 15:44</td>
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<tr>
<td><strong>15 Mon</strong></td>
<td>135</td>
<td>24</td>
<td>4:43 20:34 15:51</td>
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<tr>
<td><strong>16 Tue</strong></td>
<td>136</td>
<td>25</td>
<td>4:41 20:36 15:54</td>
</tr>
</tbody>
</table>
Photo-Calendar - Title Page

Photo Calendar 2023
Photo-Calendar - December Page

<table>
<thead>
<tr>
<th></th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
</tr>
</thead>
<tbody>
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<td>1</td>
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<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td>31</td>
<td></td>
</tr>
</tbody>
</table>

December 2023
Machs wie die Sonnenuhr und zähl die heiteren Stunden nur

Do it like the sundial and count the bright hours only