

	January						February						March						April								
	52	1	2	3	4	5		5	6	7	8	9		9	10	11	12	13		13	14	15	16	17			
Mon		3	10	17	24	31		Mon		7	14	21	28		Mon		7	14	21	28		Mon		4	11	18	25
Tue		4	11	18	25			Tue	1	8	15	22		Tue	1	8	15	22	29		Tue		5	12	19	26	
Wed		5	12	19	26			Wed	2	9	16	23		Wed	2	9	16	23	30		Wed		6	13	20	27	
Thu		6	13	20	27			Thu	3	10	17	24		Thu	3	10	17	24	31		Thu		7	14	21	28	
Fri		7	14	21	28			Fri	4	11	18	25		Fri	4	11	18	25			Fri	1	8	15	22	29	
Sat	1	8	15	22	29			Sat	5	12	19	26		Sat	5	12	19	26			Sat	2	9	16	23	30	
Sun	2	9	16	23				Sun	6	13	20	27		Sun	6	13	20	27			Sun	3	10	17	24		

A Personal Organizer: PocketDiary

A Personal Organizer: PocketDiary

	May							June							July							August				
	17	18	19	20	21	22		22	23	24	25	26		26	27	28	29	30		31	32	33	34	35		
Mon		2	9	16	23	30	Mon		6	13	20	27	Mon		4	11	18	25	Mon	1	8	15	22	29		
Tue		3	10	17	24	31	Tue		7	14	21	28	Tue		5	12	19	26	Tue	2	9	16	23	30		
Wed		4	11	18	25		Wed	1	8	15	22	29	Wed		6	13	20	27	Wed	3	10	17	24	31		
Thu		5	12	19	26		Thu	2	9	16	23	30	Thu		7	14	21	28	Thu	4	11	18	25			
Fri		6	13	20	27		Fri	3	10	17	24		Fri	1	8	15	22	29	Fri	5	12	19	26			
Sat		7	14	21	28		Sat	4	11	18	25		Sat	2	9	16	23	30	Sat	6	13	20	27			
Sun	1	8	15	22	29		Sun	5	12	19	26		Sun	3	10	17	24	31	Sun	7	14	21	28			

Willi Egger

September						October						November						December						
	35	36	37	38	39		39	40	41	42	43	44		44	45	46	47	48		48	49	50	51	52
Mon		5	12	19	26	Mon		3	10	17	24	31	Mon		7	14	21	28	Mon		5	12	19	26
Tue		6	13	20	27	Tue		4	11	18	25		Tue	1	8	15	22	29	Tue		6	13	20	27
Wed		7	14	21	28	Wed		5	12	19	26		Wed	2	9	16	23	30	Wed		7	14	21	28
Thu	1	8	15	22	29	Thu		6	13	20	27		Thu	3	10	17	24		Thu	1	8	15	22	29
Fri	2	9	16	23	30	Fri		7	14	21	28		Fri	4	11	18	25		Fri	2	9	16	23	30
Sat	3	10	17	24		Sat	1	8	15	22	29		Sat	5	12	19	26		Sat	3	10	17	24	31
Sun	4	11	18	25		Sun	2	9	16	23	30		Sun	6	13	20	27		Sun	4	11	18	25	

EuroBachTeX 2011

Introduction

- T_EXnische Kommödie 3/2010: Article by Uwe Ziegenhagen
- Known folding scheme from a project with my brother Heinz
- PocketMod: www.pocketmod.com

Notes

PocketMod Example

[illegible]

The Basic Idea

- The production of the personal organizer must be simple
- Week number
- Year

23 Sat

April 2011

24 Sun Easter Sunday

April 2011

Considerations about the Year as Calendar

- End / begin of the year
 - Which week-day is the first day of the year?
 - Is this week 1 or 52 or even 53?
- Leap year
- Is the first day of the week Sunday or Monday?

Notes

Decisions

- Pocket Diary is based on ISO8061.
- First week is defined as the week having the **first Thursday** in it.
- The first day of the week is **Monday**.

Week calendar Week 16 2011

18 Mon	
19 Tue	
20 Wed	
21 Thu	
22 Fri Good Friday	
23 Sat	24 Sun Easter Sunday

Calculations

Lua

- Lua starts the week on Sunday → ISO8061: Monday
- Lua calculates with floating points → rounding errors are possible

Babwanis Congruence

- PocketDiary uses the gregorian calendar.
- Babwanis congruence offers the formula for the calculation of the weekday.

$$w = \text{mod}(\text{floor}(\frac{5y}{4}) + f(m) + d - (2 * \text{mod}(c,4)), 7)$$

$$y = \text{mod}(\text{year}, 100)$$

$$c = \text{floor}(\text{year}/100)$$

$$m = \text{month}$$

$$d = \text{day}$$

May

2011

Mon	Tue	Wed	Thu	Fri	Sat	Sun
						1
2	3	4	5	6	7	8
					14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Os-System-Library

- Lua function os.date
 - os.date(%a,timestamp) → Short name of the weekday
 - os.date("*t",timestamp) → Table with date info from timestamp

Example: 1. April 2011:

year	month	day	yday	wday	hour	min	sec	isdst
2011	4	1	91	6	12	0	0	

```
\startsetups table:month
  \setupTABLE[c][each][width=.1\textwidth,offset=2.5pt]
\stopsetups
```

Week calendar Week 16 2011

18 Mon	
19 Tue	
20 Wed	
21 Thu	
22 Fri Good Friday	
23 Sat	24 Sun Easter Sunday

```

\startluacode
  local s = os.date("t",os.time{year=2011,month=4,day=1,hour=12})
  context.bTABLE({setups="table:month"})
    context.bTR({align="middle"})
      context.bTD() context("year") context.eTD()
      context.bTD() context("month") context.eTD()
      context.bTD() context("day") context.eTD()
      context.bTD() context("yday") context.eTD()
      context.bTD() context("wday") context.eTD()
      context.bTD() context("hour") context.eTD()
      context.bTD() context("min") context.eTD()
      context.bTD() context("sec") context.eTD()
      context.bTD() context("isdst") context.eTD()
    context.eTR()
  context.bTR({align="flushright"})
    context.bTD() context(s.year) context.eTD()
    context.bTD() context(s.month) context.eTD()
    context.bTD() context(s.day) context.eTD()
    context.bTD() context(s.yday) context.eTD()
    context.bTD() context(s.wday) context.eTD()
    context.bTD() context(s.hour) context.eTD()
    context.bTD() context(s.min) context.eTD()
    context.bTD() context(s.sec) context.eTD()
    context.bTD({align="middle"}) context(s.isdst) context.eTD()
  context.eTR()
context.eTABLE()
\stopluacode

```

- `os.time{year=2011,month=4,day=1,hour=12}` reveals 1301652000

Contact

Name:

Address:

Zip:

Place

Country

Phone:

e-mail

Name:

Address:

Zip:

Place

Country

Phone:

e-mail

Extensions

- Calculate and display Christian feast days
 - Ash Wednesday: Easter Sunday - 46 days
 - Palm Sunday is Easter Sunday - 7 Tage
 - Good Friday is Easter Sunday - 2 Tage
 - Easter Monday is Easter Sunday + 1 Tag
 - Ascension Day is Easter Sunday + 39 Tage
 - Pentecost Sunday is Easter Sunday + 49 Tage
 - Pentecost Monday is Easter Sunday + 50 Tage
- Display a month table
- Produce a yearcalendar
- Multilingual interface: English, German, Italian, French, Dutch

23 Sat April 2011

24 Sun Easter Sunday April 2011

Christian Feasts

- Easter Sunday must be calculated.
- Paschal full moon must be calculated.
- Great help: Easter Sunday calculation by Ron W. Mallen (1985)
(<http://www.assa.org.au/edm.html>)

- Base: 5 tables for the calculation of the Paschal full moon.
- Support: Basic Programm for the calculations → translated into Lua

May						2011
Mon	Tue	Wed	Thu	Fri	Sat	Sun
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

The Month Calendar

May

2011

Mon	Tue	Wed	Thu	Fri	Sat	Sun
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Code snippet

```
function calendar.monthtableH(month,year)
  local month = month
  local year = year
  if month > 12 then
    month = month - 12
    year = year + 1
  end
  context.bTABLE({setups="table:month"})
  context.bTR()
  local w = {"mon","tue","wed","thu","fri","sat","sun"}
  for a,d in ipairs(w) do
    context.bTD({align="middle"}) context.labeltext(d) context.eTD()
  end
  context.eTR()
  local c = calendar.month(month,year)
  for i= 1, c do
    context.bTR()
    for j=(i-1)*7+1,(i-1)*7+7 do
      context.bTD()context.strut() calendar.dayselectofmonth(j) context.eTD()
    end
    context.eTR()
  end
  context.eTABLE()
end
```

The Year Calendar

2011

January					February					March					April								
52 1 2 3 4 5					5 6 7 8 9					9 10 11 12 13					13 14 15 16 17								
Mon	3	10	17	24	31	Mon	7	14	21	28	Mon	7	14	21	28	Mon	4	11	18	25			
Tue	4	11	18	25		Tue	1	8	15	22	Tue	1	8	15	22	29	Tue	5	12	19	26		
Wed	5	12	19	26		Wed	2	9	16	23	Wed	2	9	16	23	30	Wed	6	13	20	27		
Thu	6	13	20	27		Thu	3	10	17	24	Thu	3	10	17	24	31	Thu	7	14	21	28		
Fri	7	14	21	28		Fri	4	11	18	25	Fri	4	11	18	25		Fri	1	8	15	22	29	
Sat	1	8	15	22	29	Sat	5	12	19	26	Sat	5	12	19	26		Sat	2	9	16	23	30	
Sun	2	9	16	23	30	Sun	6	13	20	27	Sun	6	13	20	27		Sun	3	10	17	24		
May					June					July					August								
17 18 19 20 21 22					22 23 24 25 26					26 27 28 29 30					31 32 33 34 35								
Mon	2	9	16	23	30	Mon	6	13	20	27	Mon	4	11	18	25	Mon	1	8	15	22	29		
Tue	3	10	17	24	31	Tue	7	14	21	28	Tue	5	12	19	26	Tue	2	9	16	23	30		
Wed	4	11	18	25		Wed	1	8	15	22	29	Wed	6	13	20	27	Wed	3	10	17	24	31	
Thu	5	12	19	26		Thu	2	9	16	23	30	Thu	7	14	21	28	Thu	4	11	18	25		
Fri	6	13	20	27		Fri	3	10	17	24		Fri	1	8	15	22	29	Fri	5	12	19	26	
Sat	7	14	21	28		Sat	4	11	18	25		Sat	2	9	16	23	30	Sat	6	13	20	27	
Sun	1	8	15	22	29	Sun	5	12	19	26		Sun	3	10	17	24	31	Sun	7	14	21	28	
September					October					November					December								
35 36 37 38 39					39 40 41 42 43 44					44 45 46 47 48					48 49 50 51 52								
Mon	5	12	19	26		Mon	3	10	17	24	31	Mon	7	14	21	28	Mon	5	12	19	26		
Tue	6	13	20	27		Tue	4	11	18	25		Tue	1	8	15	22	29	Tue	6	13	20	27	
Wed	7	14	21	28		Wed	5	12	19	26		Wed	2	9	16	23	30	Wed	7	14	21	28	
Thu	1	8	15	22	29	Thu	6	13	20	27		Thu	3	10	17	24		Thu	1	8	15	22	29
Fri	2	9	16	23	30	Fri	7	14	21	28		Fri	4	11	18	25		Fri	2	9	16	23	30
Sat	3	10	17	24		Sat	1	8	15	22	29	Sat	5	12	19	26		Sat	3	10	17	24	31
Sun	4	11	18	25		Sun	2	9	16	23	30	Sun	6	13	20	27		Sun	4	11	18	25	

Demo

Variable Sets

- Calendar data:

```
\setvariables
[PocketDiary]
[Year=2011,
Week=16,
Day=5,
Month=4,
Nextyear=no]
```

- PocketDiary contents:

```
\setvariables
    [PocketDiaryLayout]
    [Page1=Lost-Return,
    Page2=Week,
    Page3=Day,
    Page4=Weeknext,
    Page5=Monthcurrent,
    Page6=Year,
    Page7=Caro,
    Page8=Todo]
```

Notes

- Address data

```
\setvariables
[PocketDiaryAddress]
[Familyname=Egger,
Forename=Willi,
Street=Maasstraat 2,
Zipcode=5836 BB,
City={\sc Sambeek},
Country=Niederlande,
Phone=+31 485 57 38 96,
Mobile=+31 6 109 19 741,
E-mail=w.egger at boede.nl,
Web=www.boede.nl]
```

22 Fri Good Friday

April 2011

- Colors

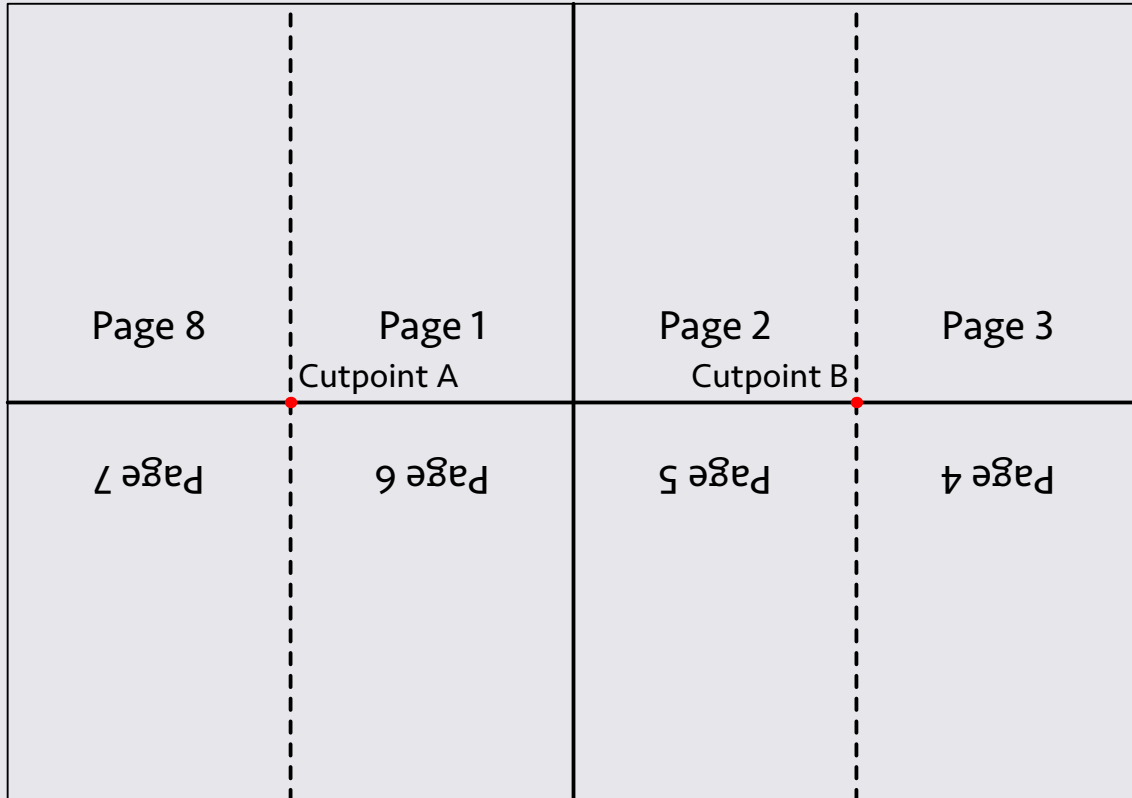
```
\setvariables
[PocketDiaryColors]
[Separatorline=blue,
Gridline={s=.75}]
```

- Footer

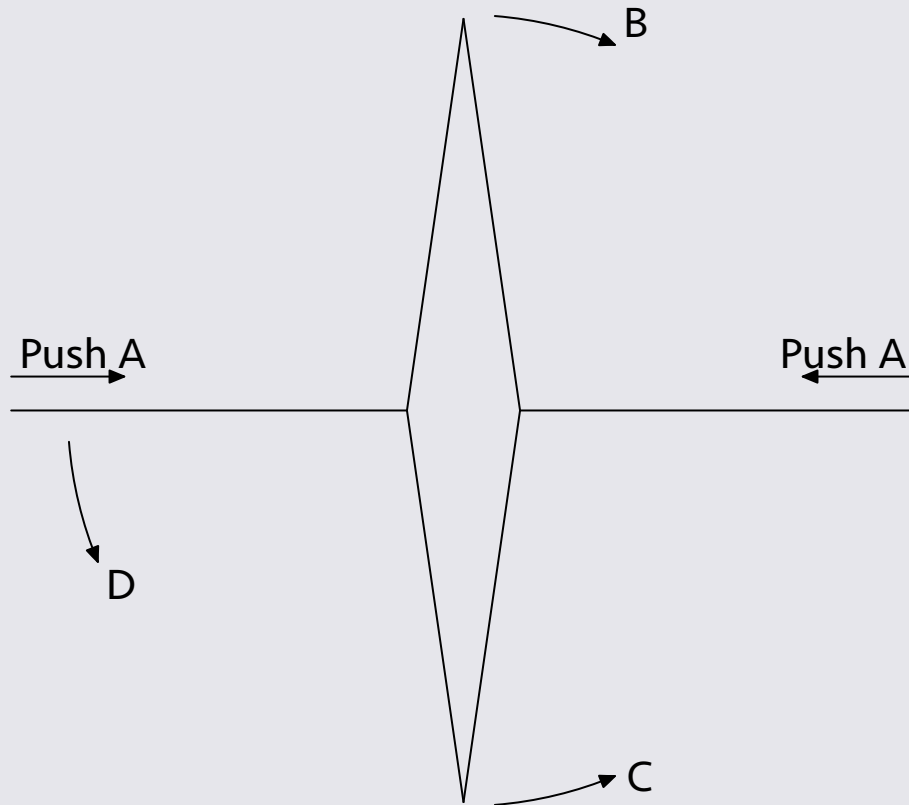
```
\setvariables
[PocketDiaryFooter]
[Lefttext=PocketDiary,
Centertext=\pagenumber,
Righttext={\getvariable{PocketDiaryAddress}{Forename},~{\currentdate[year]}]}
```


How to fold the PocketDiary

From the sheet ...



... to the booklet



We only think when we are
confronted with problems.

John Dewey