

TimeFlies – A Tool for Time Keeping

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October 16, 2012

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1 What is *TimeFlies* About?

Do you need to account for the time you spend at work? What project or work package have you been working on? Do you want to keep track of the hours you work? How much leave have you got left for this year?

Do you keep a daily work log containing things you did, problems you solved, some kind of to do list?

Do you want to make an estimate of effort for a project or work package? Would you like to break down those things into smaller items and possibly break down those again too?

TimeFlies can help you with this.

2 Tutorial by Example

In this section we will look at a number of use cases. All *TimeFlies* data is kept in plain text files. So all your data is always easily accessible to you and the format itself is quite human-readable. Moreover it can easily be version controlled.

2.1 Recording Time

To record your work time keep a work log file with day lines specifying the dates and in and out times telling when you arrived at work and when you left. The times can be given in decimals or in hours and minutes:

```
1 day 2012-09-19 8:30 17:15
2 day 2012-09-18 8.75 17.75
3 day 2012-09-17 8 18
```

Do you need to account for breaks you are taking? Use off instructions to state periods of time in a day of work during which you were not actually working:

```
1 day 2012-09-19 8.5 17.25, off 0.5
2 day 2012-09-18 8.75 17.75, off 0.75
3 day 2012-09-17 8 18, off 0.5, off 0.25
```

This last file is equivalent to the following:

```
1 day 2012-09-19 8.5 17.25
2 off 0.5
3 day 2012-09-18 8.75 17.75
4 off 0.75
5 day 2012-09-17 8 18
6 off 0.5
7 off 0.25
```

This last example illustrates the notion of a *day-block*: a *day-block* extends from one day-keyword to the next and everything inside this day block is part of that day.

The days in the file do not need to be listed chronologically. You could e.g. list the days in reverse order so that the present is always at the top of the file.

If you want to mask out part of your log temporarily you can use the *#* source comment marker. *TimeFlies* ignores the *#* and everything following it until the end of line. It works just the same as e.g. a Python comment.

```
1 day 2012-09-19 8.5 17.25
2 off 0.5
3
4 # day 2012-09-18 8.75 17.75
5 # off 0.75
6
7 day 2012-09-17 8 18
8 off 0.5
9 off 0.25
```

2.2 Keeping Notes in the Log

Do you want to keep notes about your work in the same place as you keep the time information? Use *log comment* lines like in this file:

```
1 day 2012-09-19 8.5 17.25
2 ; updated regression tests
3 off 0.5
4 ; fixed build scripts
5
6 day 2012-09-18 8.75 17.75
7 ; wrote unit test to reproduce problem report 2012-0098
8 ; fixed problem report 2012-0098
9 off 0.75
10 ; added HTML output option to object dumper
11 ; discussed implications of Java 1.7 rollout
12
13 day 2012-09-17 8 18
14 ; weekly team meeting
15 off 0.5
16 ; monthly quality task force
17 off 0.25
18 ; code review: server side includes
```

A log comment line starts with a semicolon and one or more space characters. All text following these characters until the end of the line (or until a *#*

source comment marker) with trailing spaces removed constitute the recorded log comment.

Now what can you do with such a file? Assume the above work log file's name is `work-log.fly`, then option `-t` tells *TimeFlies* to calculate your work times.

```

1 > timeflies.pl -t work-log.fly
2 Time at work overview (all):
3   when      worked  leave   sick
4 2012-09-17 Mon:   9.25 ----.--- ----.---
5 2012-09-18 Tue:   8.25 ----.--- ----.---
6 2012-09-19 Wed:   8.25 ----.--- ----.---
7   week 2012-38:  25.75 ----.--- ----.---
8   month 2012-09:  25.75 ----.--- ----.---
9         total:   25.75 ----.--- ----.---
10    when      worked  leave   sick

```

To include the log comments in this output, use the `-C` option:

```

1 > timeflies.pl -t -C work-log.fly
2 Time at work overview (all):
3   when      worked  leave   sick
4 2012-09-17 Mon:   9.25 ----.--- ----.---
5                   ; weekly team meeting
6                   ; monthly quality task force
7                   ; code review: server side includes
8 2012-09-18 Tue:   8.25 ----.--- ----.---
9                   ; wrote unit test to reproduce problem report 2012-0098
10                  ; fixed problem report 2012-0098
11                  ; added HTML output option to object dumper
12                  ; discussed implications of Java 1.7 rollout
13 2012-09-19 Wed:   8.25 ----.--- ----.---
14                  ; updated regression tests
15                  ; fixed build scripts
16   week 2012-38:  25.75 ----.--- ----.---
17   month 2012-09:  25.75 ----.--- ----.---
18         total:   25.75 ----.--- ----.---
19    when      worked  leave   sick

```

2.3 Time Summaries

Here's a longer example where you can see the use of weekly and monthly summaries. Also a few days of annual leave and sickness are inserted using the `leave-days` and `sick` instructions.

```

1 day 2012-08-23 8.5 17.25, off 0.5
2 day 2012-08-24 8.75 17.75, off 0.75
3 day 2012-08-27 8.5 17.25, off 0.5

```

```

4 day 2012-08-28 8.75 17.75, off 0.75
5 day 2012-08-29 8 18, off 0.5, off 0.25
6 leave-days 2012-08-30 2012-09-04; Hiking
7 day 2012-09-05 8.75 17.75, off 0.75
8 day 2012-09-06 8 18, off 0.5, off 0.25
9 day 2012-09-07 8.5 17.25, off 0.5
10 day 2012-09-10 8.75 17.75, off 0.75
11 day 2012-09-11, sick 8; Broken arm
12 day 2012-09-12, sick 8; Broken leg
13 day 2012-09-13 8.5 17.25, off 0.5
14 day 2012-09-14 8 18, off 0.5, off 0.25
15 day 2012-09-17 8 18, off 0.5, off 0.25
16 day 2012-09-18 8.5 17.25, off 0.5

```

Use option -f week to get an overview of weekly work time balances.

```

1 > timeflies.pl -t -f week work-log.fly
2 Time at work overview (week):
3   when      worked  leave  sick
4   week 2012-34:  16.50  ----.  ----.
5   week 2012-35:  25.75  16.00  ----.
6   week 2012-36:  25.75  16.00  ----.
7   week 2012-37:  25.75  ----.  16.00
8   week 2012-38:  17.50  ----.  ----.
9   total:  111.25  32.00  16.00
10  when      worked  leave  sick

```

Or have both weekly and monthly balances shown.

```

1 > timeflies.pl -t -f week,month work-log.fly
2 Time at work overview (week, month):
3   when      worked  leave  sick
4   week 2012-34:  16.50  ----.  ----.
5   week 2012-35:  25.75  16.00  ----.
6   month 2012-08:  42.25  16.00  ----.
7   week 2012-36:  25.75  16.00  ----.
8   week 2012-37:  25.75  ----.  16.00
9   week 2012-38:  17.50  ----.  ----.
10  month 2012-09:  69.00  16.00  16.00
11  total:  111.25  32.00  16.00
12  when      worked  leave  sick

```

Maybe you only want to look at one month with daily details? Note the comments that have been associated with the leave and the sick days in the input file show up in the respective daily output lines.

```

1 > timeflies.pl -t -f 2012-09 work-log.fly
2 Time at work overview (2012-09):

```

```

3      when      worked  leave  sick
4  2012-09-03 Mon:  ----.--    8.00  ----.-- Hiking
5  2012-09-04 Tue:  ----.--    8.00  ----.-- Hiking
6  2012-09-05 Wed:    8.25  ----.--  ----.--
7  2012-09-06 Thu:    9.25  ----.--  ----.--
8  2012-09-07 Fri:    8.25  ----.--  ----.--
9      week 2012-36:  25.75   16.00  ----.--
10 2012-09-10 Mon:    8.25  ----.--  ----.--
11 2012-09-11 Tue:  ----.--  ----.--    8.00 Broken arm
12 2012-09-12 Wed:  ----.--  ----.--    8.00 Broken leg
13 2012-09-13 Thu:    8.25  ----.--  ----.--
14 2012-09-14 Fri:    9.25  ----.--  ----.--
15      week 2012-37:  25.75  ----.--   16.00
16 2012-09-17 Mon:    9.25  ----.--  ----.--
17 2012-09-18 Tue:    8.25  ----.--  ----.--
18      week 2012-38:  17.50  ----.--  ----.--
19      month 2012-09:  69.00   16.00   16.00
20          total:    69.00   16.00   16.00
21      when      worked  leave  sick

```

You only need weekly totals in that one month?

```

1 > timeflies.pl -t -f week,2012-09 work-log.fly
2 Time at work overview (week, 2012-09):
3      when      worked  leave  sick
4      week 2012-36:  25.75   16.00  ----.--
5      week 2012-37:  25.75  ----.--   16.00
6      week 2012-38:  17.50  ----.--  ----.--
7          total:    69.00   16.00   16.00
8      when      worked  leave  sick

```

2.4 Logging Activities

Log comments are a good way to keep track of things you don't want to forget and have accessible and also aligned with your work time line. Log comments have no work effort assigned to them, though. So you cannot use them in any way for calculations of effort spent.

You use *work packages* and *activities* to connect the time you work with the work packages you work on: first, you define your work packages, then you use *activity* lines in the day blocks instead of log comment lines.

A work package definition is a line starting with the keyword *work-package* (or its abbreviation *wp*) followed by a work package name.

An activity line starts with a single dash character - followed by one or more spaces. This is followed by a work package id and a duration. This is optionally followed by a semicolon and some activity comment.

See below the converted example work log file.

```

1 wp regression-tests
2 wp meetings
3 wp quality-task-force
4 wp problem-reports
5 wp development
6 wp other
7
8 day 2012-09-19 8.5 17.25
9 - regression-tests 4; updated
10 off 0.5
11 - other 3.5; fixed build scripts
12
13 day 2012-09-18 8.75 17.75
14 - problem-reports 2; wrote unit test to reproduce problem report 2012-0098
15 - problem-reports 2.5; fixed problem report 2012-0098
16 off 0.75
17 - development 3; added HTML output option to object dumper
18 - other 1; discussed implications of Java 1.7 rollout
19
20 day 2012-09-17 8 18
21 - meetings 2.0; weekly team meeting
22 off 0.5
23 - quality-task-force 6
24 off 0.25
25 - other 1.25; code review: server side includes

```

Option `-w` tells *TimeFlies* to calculate the times you have been working on the different work packages:

```

1 > timeflies.pl -w work-log.fly
2 Work package summary (all):
3 25.25 : ALL
4 4.00 : regression-tests
5 2.00 : meetings
6 6.00 : quality-task-force
7 4.50 : problem-reports
8 3.00 : development
9 5.75 : other

```

To also show the activities contributing to the different work packages, use option `-a`:

```

1 > timeflies.pl -w -a work-log.fly
2 Work package summary (all):
3 25.25 : ALL
4 4.00 : regression-tests
5 - 2012-09-19 4.0; updated
6 2.00 : meetings

```

```

7         - 2012-09-17 2.0; weekly team meeting
8     6.00 : quality-task-force
9         - 2012-09-17 6.0
10    4.50 : problem-reports
11         - 2012-09-18 2.0; wrote unit test to reproduce problem report 2012-0098
12         - 2012-09-18 2.5; fixed problem report 2012-0098
13    3.00 : development
14         - 2012-09-18 3.0; added HTML output option to object dumper
15    5.75 : other
16         - 2012-09-19 3.5; fixed build scripts
17         - 2012-09-18 1.0; discussed implications of Java 1.7 rollout
18         - 2012-09-17 1.25; code review: server side includes

```

To check whether you have allocated all your working time to work packages, use option -c:

```

1 > timeflies.pl -c work-log.fly
2 Day check (all):
3 2012-09-18, Tue : worked = 8.25, allocated = 8.50, delta = 0.25
4 2012-09-19, Wed : worked = 8.25, allocated = 7.50, delta = -0.75

```

This shows that on two days the time at work and the time worked on work packages are differing.

2.5 Work Package Breakdown

In the previous section, work packages have been defined as simple, atomic, named items. A work package can be subdivided and refined hierarchically. See the following example.

```

1 wp md; MightyDigester: digests inputs of all sorts
2   in; read supported input formats
3       xml
4       json
5       dottxt; dotted text format
6       binary
7   proc; processing modules
8       stats; processing statistics
9       phase-1; rough break-down
10      phase-2; particle recombination
11      phase-3; regrouping and amalgamation
12   out; write supported output formats
13       xml
14       json
15       text
16       binary
17   mmi
18       gui
19       cmdline

```


The items in this work package hierarchy can be referred to in activity lines as dot-delimited work package path names.

Following, a piece of work log for the above project.

```
1 day 2012-07-01 8 17, off 1
2 - md.in.xml 4; updated to new XSD
3 - md.out.xml 3; updated to new XSD
4 - md.mmi.cmdline 1; XML options
5 day 2012-07-02 8 17, off 1
6 - md.in.json 5; first minimal implementation
7 - md.proc.stats 1.5; line counting
8 - md.mmi.cmdline 1.5; statistics options
9 day 2012-07-03 8 17, off 1
10 - md.in.xml 4; adapted includes
11 - md.out.xml 3; normalised host node structure
12 - md.out.text 0.5; don't use TAB any more
13 - md.mmi.cmdline 0.5; text and xml options
```

Assume file `prj-mighty-digester.fly` contains the work package definitions and the work log itself is kept in `work-log.fly`. The work package summary can be calculated with option `-w` (which was also used in the previous example).

```
1 > timeflies.pl -w prj-mighty-digester.fly work-log.fly
2 Work package summary (all):
3   24.00 : ALL
4       24.00 : md; MightyDigester: digests inputs of all sorts
5           13.00 : in; read supported input formats
6               8.00 : xml
7                   5.00 : json
8               1.50 : proc; processing modules
9                   1.50 : stats; processing statistics
10          6.50 : out; write supported output formats
11              6.00 : xml
12              0.50 : text
13          3.00 : mmi
14          3.00 : cmdline
```

And here the same with activities shown.

```
1 > timeflies.pl -w -a prj-mighty-digester.fly work-log.fly
2 Work package summary (all):
3   24.00 : ALL
4       24.00 : md; MightyDigester: digests inputs of all sorts
5           13.00 : in; read supported input formats
6               8.00 : xml
7                   - 2012-07-01 4.0; updated to new XSD
8                   - 2012-07-03 4.0; adapted includes
9               5.00 : json
```

```

10             - 2012-07-02 5.0; first minimal implementation
11 1.50 : proc; processing modules
12     1.50 : stats; processing statistics
13         - 2012-07-02 1.5; line counting
14 6.50 : out; write supported output formats
15     6.00 : xml
16         - 2012-07-01 3.0; updated to new XSD
17         - 2012-07-03 3.0; normalised host node structure
18     0.50 : text
19         - 2012-07-03 0.5; don't use TAB any more
20 3.00 : mmi
21     3.00 : cmdline
22         - 2012-07-01 1.0; XML options
23         - 2012-07-02 1.5; statistics options
24         - 2012-07-03 0.5; text and xml options

```

3 Reference

3.1 Command Line Options

Time filters

- Summary filters
- User filters
- Show work packages
- calculate work packages
- check days
- tally days
- indentation

3.2 File Syntax

3.2.1 Source Comments and Persistent Comments

TimeFlies knows two kinds of comments: *source comments* and *persistent comments*.

Source comments are marked by a hash sign (#) and extend from it to the end of the line. *TimeFlies* ignores these comments and treats them as if they did not exist.

Persistent comments are marked by a semicolon (;) and extend to the end of the line (or a possibly following source comment in that line). A persistent comment is processed and will show up in the generated output. E.g. comments on leave or sick days will show up in the time at work output summaries.

Comments on activities or work packages can show up in the work package outputs.

3.2.2 Time and Date Formats

Times and time durations can generally be given in $[h]h:mm$ format or in decimals. Examples would be 8:30 or 8.5. Times use the 24-h-system. So 5:15 p.m. would therefore have to be written as either 17:15 or 17.25.

Dates must generally be written in $yyyy-mm-dd$ format.

3.2.3 Work Packages

Syntax: work-package <wpid> [; <comment>]. The keyword work-package can be abbreviated as wp.

The fully qualified work package id wpid is a dot-delimited sequence of simple work package ids (tokens consisting of alphanumeric characters). It resembles a path from the root of the work package hierarchy. In an compound id $a.b$ the id b appearing directly to the right of a means that work package b is an immediate sub work package of a . Work package hierarchies can therefore be given as sequences of work package definitions.

Alternatively (and more concise) a work package hierarchy can be given as hierarchically indented text (similar to Python indentation rules). In this case full work package ids are not necessary and simple ones suffice.

Illustrating this, the following example:

```
1 wp pro; project of some sort
2 wp pro.aaa; part aaa
3 wp pro.bbb; part bbb
4 wp pro.bbb.xxx; detail xxx
5 wp pro.bbb.yyy; detail yyy
6 wp pro.ccc; part ccc
```

is equivalent to:

```
1 wp pro; project of some sort
2   aaa; part aaa
3   bbb; part bbb
4     xxx; detail xxx
5     yyy; detail yyy
6   ccc; part ccc
```

This concise form of work package definition can also be applied partially. So the following is another form, equivalent to the above two:

```

1 wp pro; project of some sort
2   aaa; part aaa
3   bbb; part bbb
4   ccc; part ccc
5 wp pro.bbb
6   xxx; detail xxx
7   yyy; detail yyy

```

3.2.4 Day blocks

Syntax: day <date> [<in> <out>]

A day block starts with a the keyword day followed by the day's date and optionally the arrival and leaving times at work. Either both times must be given or none at all. If they are not given, no time at work is assumed for that day. This is used e.g. for leave days or sick days. A day block ends at the next day keyword, i.e. at the beginning of a new day block.

3.2.5 Activities

Syntax: - <wpid> <time> [; <comment>]

An *activity* is a period of time spent working on a work package. An activity must appear in a day block. The work package id <wpid> must be a valid fully qualified work package id, i.e. a matching work package must have been defined before.

3.2.6 Time off Work

Syntax: off <time> [; <comment>]

Declare times off work in a day block, yet inside the time span of that day.

3.2.7 Sickness

Syntax: sick <time> [; <comment>]

Declare sick time in a day block, yet outside the time span of that day.

3.2.8 Leave

Syntax: leave <time> [; <comment>]

Declare leave in a day block, yet outside the time span of that day. Use this for leave periods in order of hours.

3.2.9 Block Leave (Several Days)

Syntax: `leave-days <first> <last> [; <comment>]`

This is a short form to define an extended period of leave, i.e. several days. It is defined by the first and last day of leave taken.

3.2.10 Public Holidays

Syntax: `public-holiday [; <comment>]`. The keyword `public-holiday` can be abbreviated as `phol`.

The current day is marked as a public holiday, i.e. a day where the required time at work is null.

3.2.11 Importing Files

Syntax: `import <file>`.

The named file is imported. This means the file's content is processed in the same way as if it had appeared in the importing file instead of the import statement.

This allows you to e.g. split your daily logs by month or separate work package definitions from daily logs or share work package definitions amongst a group of users while keeping daily logs private.

One single work package definition (a single work-package statement in abbreviated hierarchical form using white space indentation) cannot be broken up across input file boundaries. To combine a work package hierarchy from multiple input files each input file must contain at least one complete work-package statement each.

Invalid example:

```
1 # File 1: looks good
2 wp pro; project of some sort
3   aaa; part aaa
4   bbb; part bbb

1 # File 2; bad, does not start with a work-package statement
2   xxx; detail xxx
3   yyy; detail yyy
4   ccc; part ccc
```

Correct form:

```
1 # File 1: same as in above example
2 wp pro; project of some sort
3   aaa; part aaa
4   bbb; part bbb
```

```
1 # File 2: correct, starts with a work-package statement
2 wp pro
3     bbb
4         xxx; detail xxx
5         yyy; detail yyy
6     ccc; part ccc
```