

BERN UNIVERSITY OF APPLIED SCIENCES

PROJECT 1 - CLOCKALARM

Requirements (version)

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Chapter 1

Goal of this document

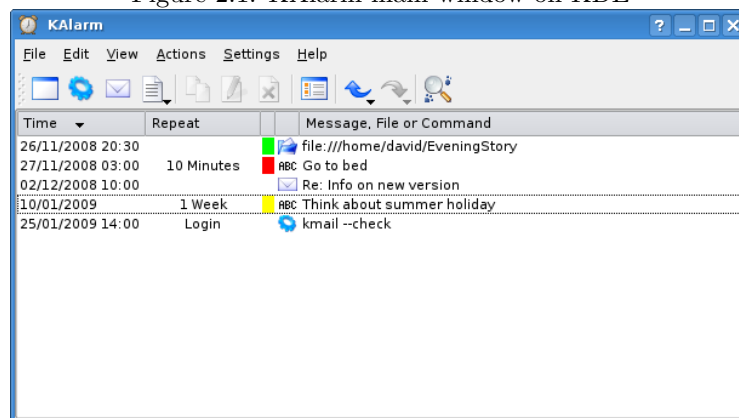
This documents describes the goals and requierments for the project 1 (ClockAlarm)

Chapter 2

Project Vision

The ClockAlarm project is an application allowing the user to manage alarms which will alert him at specified times. The user can create new alarms and assign them to categories in order to stay organised. The project is thought to replace in the long run an existing application named KAlarm.

Figure 2.1: KAlarm main window on KDE



Chapter 3

Project Goals

3.1 Goals

- Improve the overall life organisation of the user
- No more missed events

3.2 Requirements

- The application has to be cross platform (Windows, Linux, macOS)
- The database must not be stored in a binary format
- The configuration has to be easily transferable to another computer
- Customisable alerts
- Classifiable alerts
- Recurrent alerts
- Alerts can be scheduled
- Delay alerts
- Snooze alerts

Chapter 4

System and Context Boundaries

4.1 Stakeholder

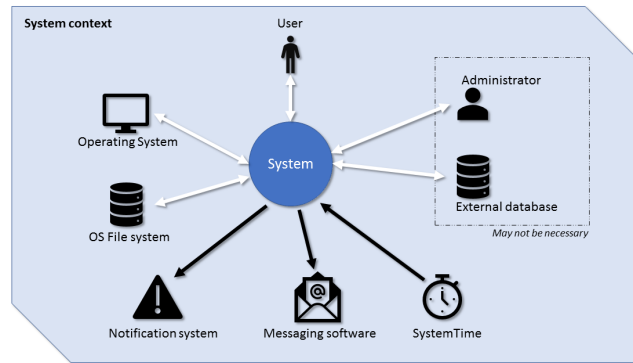
1. kAlarm users
Users who previously used kAlarm on linux, and wishing to find a similar but remastered and cross-platform software.
2. Computer users
Those who tend to forget many things.
3. Investors
Investors in the project. For example advertisers looking for visibility in the software.
4. The GNU Project
The GNU Project collective could be pleased to see that an updated version of kAlarm is proposed.

4.2 Actors

1. Software User (Primary Actor)
The peoples who will use the software. They are the first concerned by the product.
2. Administrator (Primary Actor)
Super users with special authorizations. May be able to manipulate the data and the other users.
It is likely that the software does not need an administrator.
3. System Time (Supporting Actor)
The service specific to the OS and providing the exact international time.
4. Messaging Software (Supporting Actor)
Allows ClockAlarm to send Emails.
5. OS Notification Services (Supporting Actor)
OS specific notification center or notification service.

4.3 System context

Figure 4.1: System context



4.4 System boundary

In addition to the elements above, special attention should be given to the following points.

- The must-have goal isn't to add functionality to the existing software kAlarm, but to create a similar and cross-platform product.
- The existence of a database and an administrator could be dropped and go out of context.
- The software isn't meant to be an alternative to an agenda. It behaves like a list of tasks and reminders.

4.5 Context boundary

In addition to the logical considerations and those stated above, the following points should be taken into account.

- The software is responsible for asking the messaging software to send to emails. This means that the way emails are sent isn't part of the environment.
- The software bases its alarms on the internal time. The accuracy of the time and of the time zone with respect to the geographical position of the machine is not part of the environment.

Chapter 5

Requirements

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Chapter 6

User Stories

6.1 User Story 0: Template

As an [actor] I want [action] so that [achievement].

Description

Success

Failure

Chapter 7

Use Cases

7.1 Use Case 0: Template

Scope

Primary actor

Precondition

Postcondition

Main success scenario

Extension

Chapter 8

Development decisions

8.1 Word Processor

In order to write this document, we had to choose between several word processors. We required that the file could be used with a version control system so that the documentation and code could live in the same place. Also, we didn't want to loose time if there was a need to change the layout. After discussion, we came up with the following list:

1. Microsoft Word
2. Google Docs
3. LibreOffice
4. Scribus
5. T_EX

The main problem with number 1 and 3 is that the output of these programs are binary files. A built in versioning functionality exists in Microsoft Word but it adds another version control layer to the workflow. The .docx and .odt file types are in fact ZIP archives containing XML documents which can be uncompressed. They could be stored in the uncompressed state to be compatible with the chosen version control system [2]. Or they could be converted into another format. Clearly this is not convenient. Therefore we decided that they were not compatible with our first requirement stated above.

Using a Google Doc means that the document will be stored on Google's servers and not within the folder containing the source code. I thus also violates our first requirement.

Scribus is a free alternative to InDesign and doesn't produce binary files. It allows a fine-grained control of the layout, frames and styles [3].

Finally there is T_EX, a typesetting system created by Knuth. It provides a low-level language that is not directly used when writing documents. Instead there exist higher level formats such as L^AT_EX or Plain T_EX (much more lower level than L^AT_EX) which provide a large set of macros [4].

Our supervisor strongly recommended us the use of L^AT_EX, that is why we ended up using it.

8.2 Version Control

Out of the multitude of version control systems (VCSs) which exist, the three following are mostly used [5]:

1. Git
2. Mercurial

3. Apache Subversion

All the three offer equivalent features and are equally well suited for our project [1]. We decided to use Git with GitHub mainly because we were already familiar with them. GitHub allows us to easily manage issues and milestones (an equivalent service for mercurial is Bitbucket).

8.3 Python

As two teams are developing separately in parallel an alternative for KAlarm, we had the choice to use Java or Python. We took the latter because we wanted to learn a new programming language.

8.4 Unit Testing

8.5 Test Coverage

Bibliography

- [1] Patrick Thomson. *Git vs. Mercurial: Please Relax*. Aug. 2008. URL: <https://importantshock.wordpress.com/2008/08/07/git-vs-mercurial/> (visited on 03/12/2017).
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