ID2205 - Project Specification

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Overview

At its core the project consists of building a web-based development environment (DE) for the graphical programming language DMDL [1]. Documentation and version control will be done using appropriate software (such as JSDoc and Git [2], [3]) and the results will be presented orally, in a written report and in a short screencast demonstation.

Workflow

The DE will be built using standard web technologies such as JavaScript, CSS and HTML, [4], [5], [6], and it should feature a drag-and-drop type interface similar to LabVIEW or Simulink [7], [8]. An existing set of graphics exists for the language's blocks, an example of which can be seen in Figure **??**. These can be used as a base for the blocks in the DE. By adding, for example, dropdown menus and text bars to the blocks the user will be able to alter the behavior of the blocks, such as changing values of timers.

Since the DE is just a small part of a larger project, it is of great importance that the code is well-documented and maintainable so that it can be integrated into a larger ecosystem and so that future features can easily be added. Some of these features are already known and the project should make an effort to facilitate their implementations. For instance, one such feature is the ability to interface with Gnu Radio [9].

A traditional Model-View-Controller [10] design pattern will be used for the code architecture. The "Model"-component should be written in such a way that future developers can easily add features such as being able to program Software Defined Radios from the DE or interface with Gnu Radio, as previously mentioned. This is illustrated in Figure **??**.

Grading Guidelines

I borrowed these guidelines from the course DH2641. I think we can use these as a base for our own guidelines if Christian wants to have a structured grading scale. Link to the course web for DH2641 here:
https://www.kth.se/social/course/DH2641/subgroup/vt-2015-iprog14/page/final-project-5/

Working project with high usability and good architecture: A
Working project with high usability but architectural issues: B
Working project with good architecture and usability problems: B
Working project with usability problems and architectural issues (or major usability problems): C
Project with minor bugs but good architecture: D
Project with minor bugs or achitectural flaws: E
Project with major bugs or major architectural flaws: Fx

Expected Outcome

The expected outcome of the project is:
- Well-documented and version controlled source code for the DE
- An oral presentation and demonstration of the DE
- A screencast showing off the basic features of the DE
- A written technical report

References

[1] Peng Wang's Github
[2] JSDoc Website
[3] Git Website
[4] JavaScript Website
[5] CSS Website
[6] HTML Website
[7] LabVIEW Website
[8] Simulink Website [9] Gnu Radio Website
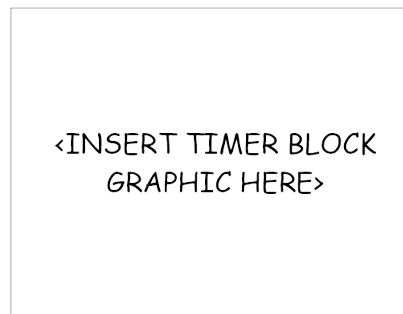[10] Model-View-Controller Description
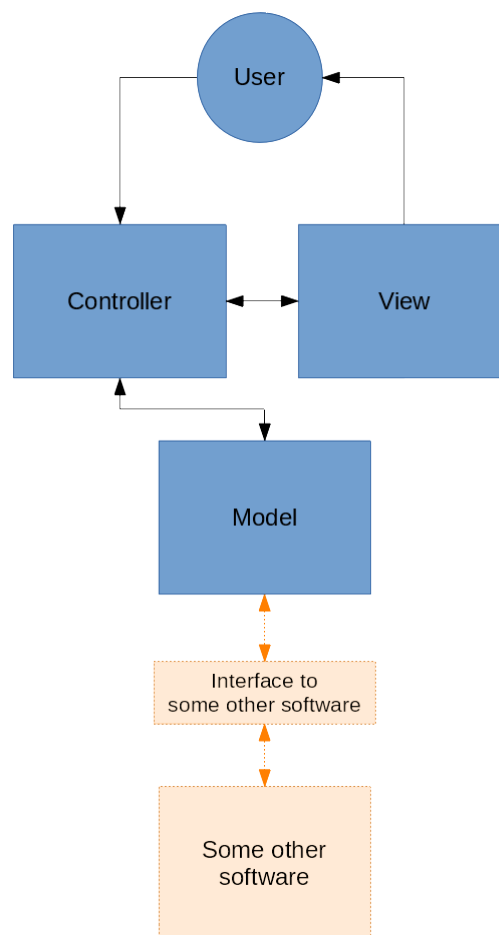
Figure 1: An example of what a timer block might look like.

Figure 2: An illustration of the code architecture.