



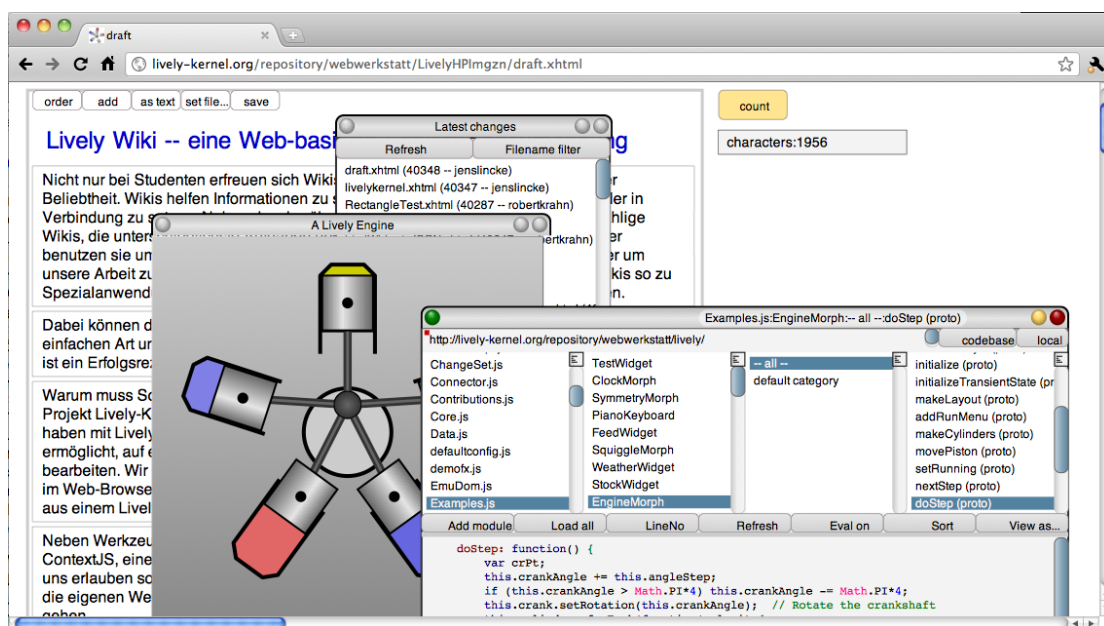
# Exploratory Authoring of Active Web Content in a Mobile Environment



Bachelor Project Proposal, WS 2011/2012 – SS 2012  
Software Architecture Group, Prof. Dr. Robert Hirschfeld

## Lively Kernel - An Exploratory Authoring Environment

The Lively Kernel (<http://lively-kernel.org>) is a Web-based runtime and development environment for Web applications. It incorporates tools and techniques to be completely self-sufficient. Development with Lively Kernel is notably different from development in other environments. Instead of working on text files containing source code, programmers interact and modify objects that are shared in a Web-based object repository. The system allows for wiki-style editing so that developers can collaborate and share ideas. This enables the exploratory creation of and interaction with active Web content.



## Mobile Authoring of Active Web Content

Active Web content in the Lively Kernel combines data and services from the Internet into interactive applications that can be published into a shared Web-based object repository. Examples range from personal media-rich journals to visualizations of business data.

In this context, mobile devices are becoming the interface not only for active content consumption but also its creation. Since most mobile devices provide modern Web browsers, they are in principle capable of authoring such content. However, in practice, Web applications written for a desktop environment are usually not suited for mobile devices.

The goal of the project is the extension of Lively Kernel to be a mobile and desktop authoring environment that allows for fast and immediate prototyping to shorten the development turn-around time of active Web content.

## Implementation

In the project the participants will research, implement, and evaluate how Lively Kernel can be evolved and improved for authoring active Web content on and for mobile devices such as Apple's iPad or even iPhone.

Existing approaches to programming on mobile devices and end-user programming techniques like constraint-based and visual programming will be analyzed. Support for collaboration that handles concurrent modification of shared objects is required. The collaboration facilities also have to adapt to network availability including authoring while being offline. Implementation is both motivated and evaluated by meaningful examples illustrating the potential of the system to be developed. Exemplary applications should especially include features required for interactive multimedia systems like animations, simulations, physics, and music.

The implementation of the project will be carried out in the Lively Kernel environment and wiki (<http://lively-kernel.org/webwerkstatt>). Extreme Programming (XP) and other agile methodologies will be employed for software development.

## Organization

A group of about six to eight (6-8) students may participate in the project. Organization and tasks will be determined by the project participants. The project will be carried out at the Hasso-Plattner-Institut in Potsdam. Project participants are expected to communicate with our partner via email, chat, or voice on a regular basis. In WS 2011/2012, participants will work on initial design sketches and prototypes. Main steps in design and implementation are to be executed in SS 2012. Expected results include a working software system accompanied by appropriate documentation.

## Partner & Contact

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