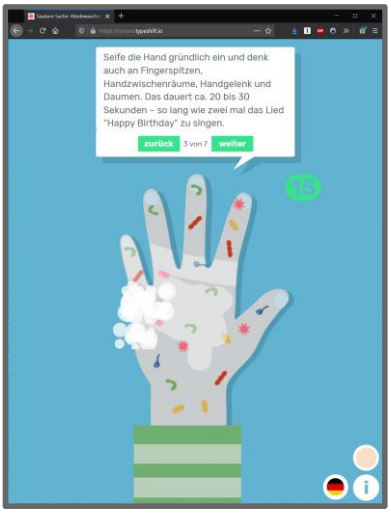
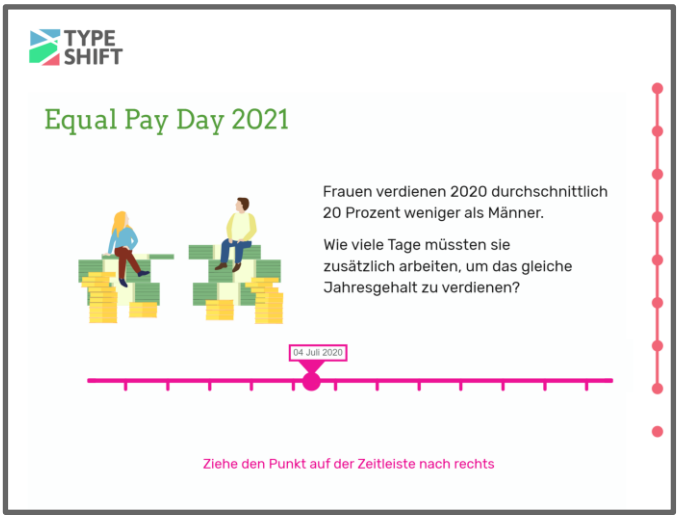
Tool Support for Collaborative Creation of Interactive Storytelling Media

Bridging Gaps between Developers, Designers, and End Users





Project Scope and Goals

In this project, students will develop live tools and frameworks for cross-functional teams creating interactive storytelling content for the web, such as *explorable explanations* or *scrollytelling*. The resulting collaborative authoring tools will bring the perspectives of programmers, designers, and customers together in a single, web-based environment.

Part of the project will be:

- Explore means for end-user programming of interactive applications and animations
- Design and implement a framework for expressing time- and scroll-position-dependent behavior in JavaScript supporting *scrollytelling*
- Design and implement an interactive editor in *lively.next* to author the structure, content, animations, and code of scrollytelling content
- Explore and understand the design process and communication patterns in teams creating interactive content
- Design and implement tools in *lively.next* to enable all design participants to review and discuss an interactive content directly from within the interactive

Detailed Project Description

Interactive storytelling content leverages the computational nature of computers to allow users to experience or explore content interactively and gain a deeper understanding. For example, *explorable explanations* illustrate a phenomena through interactive simulations (for a prominent example see "Earth: A Primer"). Another form is *scrollytelling* that engages readers through letting them steer an animated illustration (see "Typeshift Snowflakes"). The project partner Typeshift is a creative agency specialized on creating interactive scrollytelling content for the web. Creating interactive content is a design process that requires a cross-functional team consisting of programmers, graphics designers,

animations designers, and writers. As in most design processes, a project benefits from short feedback loops between all participants. However, the current tool sets lengthen rather than shorten feedback loops due to two gaps:

- First, all participants of the process work on their own artifacts (e.g. code, graphic files, storyboards, text paragraphs) and with specialized tools (e.g. code editor, graphics editor, text editor). As a consequence, the artifacts have to be integrated manually which results in a long feedback loop regarding the state of the actual interactive content.
- Second, before an interactive document is published it has to undergo numerous review cycles. Currently, when discussing graphical objects, animations, and interactions in the interactive document, the team members and their customers have to resort to taking screenshots and writing textual reports. As a result, team members have to manually restore the state of the interactive content in order to work on the suggestions.

This project will create frameworks and a tool set to bridge these two gaps based on the live programming environment *lively.next* in order to provide a common authoring and communications environment that makes the creations of interactive scrollytelling content more efficient. The two main tools to be developed will be a *timeline editor* and a *review tool*:

- The *timeline editor* for scrollytelling websites should allow designers to work directly on the graphic objects, sections, and animations of the interactive document.
- The *review tool should* allow users to comment and critique not only the overall experience of the whole interactive document, but allows them to connect their comments to specific parts. These comments can then also be projected into the code for the design team to work on.

Implementation Details

The implementation of the project will involve programming with the *lively.next* programming system (https://lively-next.org/) which provides a Smalltalk-style programming experience for JavaScript. An agile, iterative, and customer-centric process will be employed for software development. All source code will be published under the MIT license **(**www.opensource.org/licenses/MIT**).**

Organization

Typeshift is a Potsdam based agency developing interactive content and specializing on complex topics that cannot be adequately communicated with conventional "static" media, like videos, texts or podcasts.

A group of about six to eight (6–8) students may participate in the project. Organization will be mainly determined by the project participants. The project will be carried out at the Hasso Plattner Institute in Potsdam (with periods of virtual collaboration depending on the development of the pandemic). Project participants are expected to communicate with our partner via GitHub issues/wiki, e-mail, or video chat on a regular basis. In the winter term 2020/21, participants will work on exploring the domain through first prototypes and familiarize themselves with the required infrastructure. Main steps in design and implementation of platform extensions are to be executed in the summer term 2021. Expected results include a working software accompanied by appropriate documentation.

Partner and Contact

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