Split Flap Display Simulator

Request for Proposal
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Introduction

We want to build a split-flap display simulator, as a demo application for the Pageforest.com platform. The goal is to create an editor, where users can type in their own sequence of messages to display on the board, which will create a web page that shows their board as either an auto-sequencing animation, or that can be stepped through (forward and back) like a presentation tool.
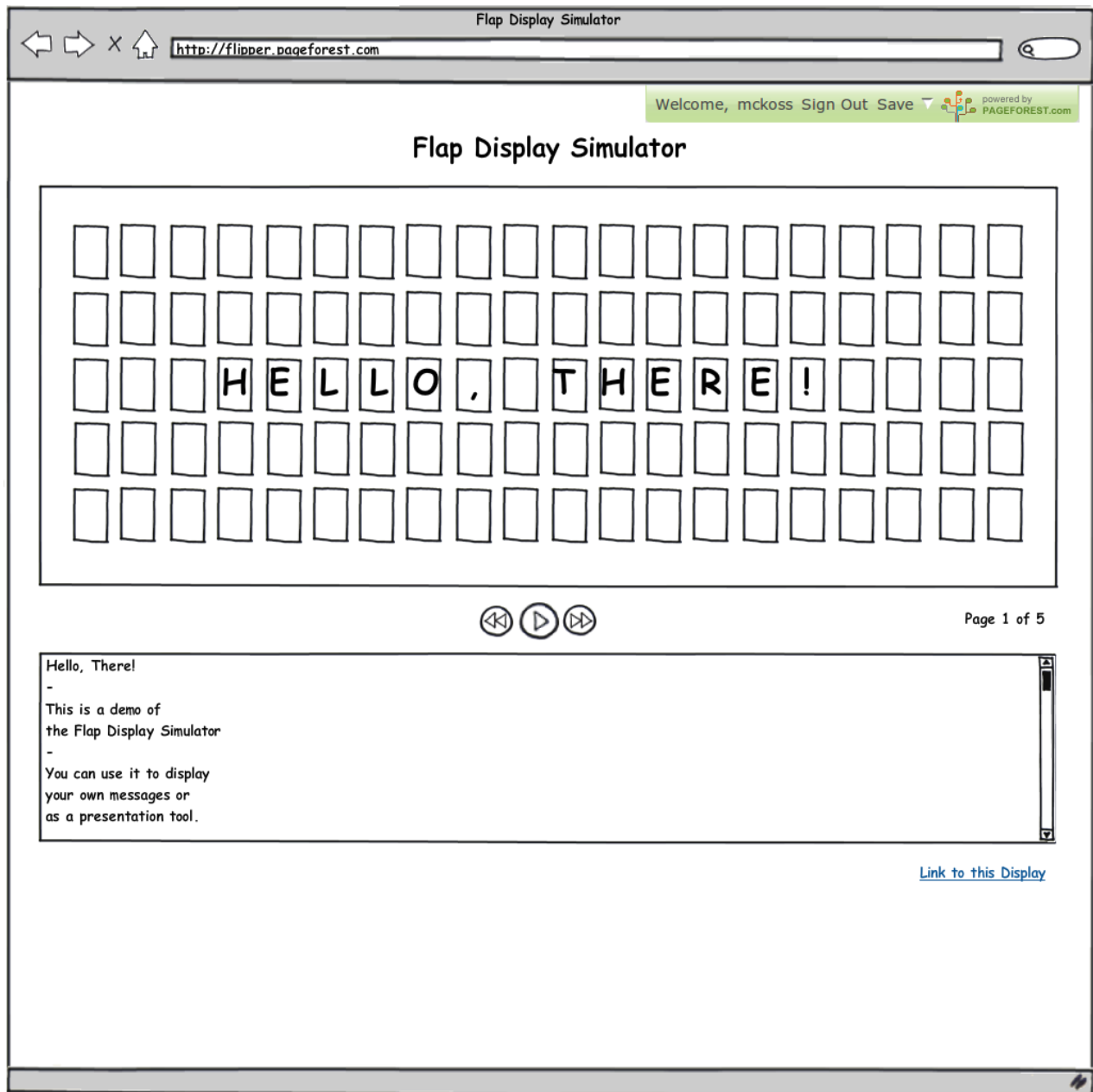
A similar project was created for Flash here as an example:

http://www.flashcomponents.net/component/flash_jrboard.html

(but note that I want animated letter-to-letter transitions, unlike this demo).

Required User Scenario

- User visits flipper.pageforest.com.

Flap Display Simulator

HELLO, THERE!

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Hello, There!
-
This is a demo of
the Flap Display Simulator
-
You can use it to display
your own messages or
as a presentation tool.

Link to this Display

- User enters a series of multi-line messages in a text area (separated by lines containing all dashes). For example:

Hello, There!

This is a demo of
the Flap Display Simulator

You can use it to display
your own messages or
as a presentation tool.

Just change the text below
to customize your own message.

- Each letter should transition like a split flap display, i.e., the top of the the letter should animation down and over the bottom half, revealing the top and bottom of the next sequential letter. The goal is to have letter-to-letter transition speed of at least 2 characters per second (may not be attainable on iPad?).
- The user can hit the play button, or forward/next buttons to see the result of their work. Play mode should display each page for 5 seconds, and then transition to the next page.
- Transitions between pages should render using CSS transforms and CSS transitions and tested on Chrome, iPad, Firefox, and Safari. *Note: only 2D transforms are supported in Chrome - so this project will not be able to use the perspective transforms available only in Safari.*
- Each letter should cycle sequentially through the letters of the alphabet to get to the next display letter for that slot. All letters should be displayed as upper case only. We display
characters from the following three groups: Letters (A-Z), Numbers (0-9) and Symbols (all ASCII printable symbols, from "!" to "~", and excluding letters and numbers).
- For example, to change an "H" to a "K", the letter flip to "I", "J", "K", in sequence. To flip from "K" to "C" should flip from "K" to "Z", then <space>, and then from "A" to "C".
- When flipping between numbers, just rotate through "0" through "9" (i.e., don't include letters or symbols).
- When changing between groups (e.g., letters to numbers), flip to the last character of the current group, then <space>, then begin with the first character of the next group. E.g., to go from "T" to "7", flip from "T" to "Z", then <space>, then "0" to "7".
- They can save their document to Pageforest, allowing them to share it with others.
- The Pageforest storage format should be:
    ```
    {blob: {
        version: 1,
        text: "<contents of text-area>"
    }}
    ```
- All character graphics should be built-in browser fonts (or free web fonts) - i.e., only use PNG files for the background of the flap letters, not the letter forms themselves.
- When they click "Link to this Display", the user is directed to a page that only displays the Flap Display and player controls (no input text area) - at http://flipper.pageforest.com/display#document-id.

Methods

1. All work produced under this contract must be able to be placed into the public domain, or redistributed under an MIT open source license (GPL and other restrictive licenses do not qualify).
2. Work product must satisfy industry standard formatting and style guidelines as defined by these file type checkers:
   a. HTML conformance - Tidy and W3C Validator
   b. JavaScript - JSLint (some errors may be relaxed by prior agreement)
   c. CSS - W3C CSS Validator
3. Work product is to be published to a github repository during development so ongoing work can be reviewed by StartPad.

4. JavaScript modules should defined using the [Pageforest namespace system](#) without creating additional global variables in the browser environment.