1WALL: project evaluation

The aim of this creative project was to create a thriving public creative environment on the internet. Inspired by a number of different phenomena such as graffiti culture, public installations and crowdsourced art, I decided to provide an accessible way for a broad range of users to experience collaborative drawing, resulting in a gigantic, ever-growing piece of art, over which no-one may claim authorship.

Development History

The original proposal differed greatly from what the project is today. Titled simply CANVAS, this project was meant to take shape as a Processing.js application embedded in a HTML5 <canvas> object. However, upon finishing a working prototype of the drawing algorithm (inspired by FiftyThree's *Paper* app for iPad), I realised that due to data I/O restrictions and performance issues, Processing.js would constitute more of an inhibiting factor to the project than a simplification. Thus in mid-January I decided to implement the web app in pure Javascript, later on adding the support of jQuery for efficient UI design.

The second major change to the technical side of the project took place in February, when I was advised to use the Parse framework for managing the backend. This proved to initially solve a lot of issues, since I had no previous experience with server-side development and was frustrated by the idea of learning PHP/python. However, after two months of laborious coding I was forced to give up on Parse due to the fact that the framework did not provide robust functions for handling complex data in real-time situations. What is more, communication with the server seemed to be an unsolvable issue.

After deciding to change the backend platform, I began researching mapping APIs in an attempt to find a simple and efficient way to handle image data dynamically. At this point I realised that my data model was rather similar to the one used by Google Maps. Seeing that their API is powerful, well-documented and free of charge, I began to adopt it. Resorting to PHP on the backend after all, I found it to be a very lightweight and efficient solution for handling my image data, and after a few hours of learning I managed to implement a server script which would successfully process image data sent from the client, and distribute it into 100x100 pixel PNG tiles as specified in the project proposal.

The most significant change occurred when I discovered that Google Maps API does not allow for infinite maps; its map building algorithms are set up with the Mercator projection, which may stretch to infinity longitudinally, but limits latitude to (-90;90) degrees. This applies even if the developer specifies their own projection. Faced with this obstacle, I devised a simple way of turning a restriction into an advantage. Rather than a two-dimensionally infinite canvas, I reimagined the space to be a one-dimensionally infinite wall, thus strongly referencing graffiti culture and alluding to a story-like creative structure found for instance in the similarly constructed Bayeux tapestry. At this point, 1WALL took shape. The majority of the technical aspects of this projects were therefore implemented over the course of three weeks in April 2014, last UI additions and bug fixes being included on May 2nd.

Self-evaluation procedures and testing

Due to the severe delay in my project plan (which involved finishing development by the end of March), I have not had enough time nor resources to perform testing on an appropriate scale. I have begun in mid-April with a closed beta of sorts, with an opportunity for participants to give feedback in the form of a public Google document, upon submitting which they would receive an EP of mostly unreleased music by my own electronic solo act, Theydon Boys. I was gradually sharing the app with more and more people, which resulted in a lot of unknown users joining in. Finally I began promotion on Twitter, which drew a few more users.

The feedback form proved to be quite unsuccessful: a lot of participants did not even notice the link on the saving screen, and despite its brevity most of them did not find the incentive of free music appealing enough. Most of the feedback I have received was therefore verbal and direct.

Main observations:

- **Navigation issues –** the greatest issue for participants seemed to have been navigation on the wall, since zooming out was not possible (this feature may be added later on). It was painstakingly difficult to navigate from the eastern end to the west, as one needed to move through all the space in between. To some extent this was solved by implementing the whole website as PHP, and allowing users to specify the initial position in the address (e.g. *"/wall.php?l=100"*, where 100 is the x-coordinate)
- **Unintentional simultaneous drawing** – since any user content got processed on the server only after they had hit the 'save' button, situations occurred where two users would draw over the same area, usually to an interesting, but not desirable effect. This will be fixed soon by a simple database of currently active users and their positions on the wall**.**
- **Vandalism** – there was one particular instance of a user drawing extensively over others' drawings in a rather destructive way. An act of such scale was not expected, and cannot be entirely avoided if one is to preserve the openness of creative space. Possible fixes include:
    - Lockdown of well-populated areas (would require regular maintenance)

    - Back-layering of new drawings – any new content will be layered *behind* the original drawings. This would eliminate the option to add to others' work directly.
- **Difficulty drawing over large areas** – this was solved by implementing a simple slider in the UI, allowing users to change brush size.
- **Saving issues** – The map used to render in a slightly varying vertical position based on window size. This, as I discovered later, was due to the fact that I had originally opted for using a custom map projection in order to simplify tile indexing. The bug was solved by implementing the Mercator projection throughout the code.

Future improvements

1WALL became my passion and therefore I am planning to develop it further. Some of the proposed improvements include:

- **Real-time collaboration** – this would allow two or more users to draw collaboratively in one space, while instantly seeing any changes to the space. Potential users would be educators and children.
- **More drawing options** – I had a few requests to add more brush types. I would also like to implement adding custom colours and sharing colour schemes (possibly in collaboration with colorlovers.com). Furthermore, experimental features such as Mr. Doob-style brushes may be implemented.
- **Sharing features** – apart from standard sharing via link and social networks, I would like to implement embedding of parts of the wall on other websites.
- **Community** – my primary goal is to build a community of enthusiastic users and make 1WALL a useful, yet entertaining and creative tool for the general public.

Evaluation of development process & outcomes

The development of 1WALL, as exhausting and complicated as it was, can be considered successful. I have managed to implement the application to fulfill its original purpose, despite doing it in a different way than proposed. I have also responded to user feedback considerably bearing in mind the time constraints.

I regard wrong tools choices to be the principal mistake I made in the development process; had I began working in Javascript immediately (November 2013), and chosen the right backend platform (PHP script running on igor.gold.ac.uk) alongside Google Maps API first, I would have had a lot more time and resources to facilitate testing and promotion, resulting in a much more complete, established web service by the project hand-in date.

Yet considering the fact that I had no previous knowledge of Javascript, jQuery, PHP and backend in general, I must say 1WALL is an unexpected triumph for me, both in terms of educative and professional outcomes.