

# SET09103 Advanced Web Technologies

Coursework Part #1

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# 1 Introduction

This coursework will discuss the recreation and potential enhancement of /r/place, a project made by Reddit, a discussion board website.

## 1.1 What is /r/place

/r/place was an event originally hosted by Reddit, a public discussion board website, on April Fools' Day in 2017 (April 1, 2017) 3.

The event consisted of a website that hosted a 1000 x 1000 pixel grid where users were able to change the color of each square. After editing a square, the user would be timed out for five minutes from changing another square. The restriction was mainly to try to prevent bots on the canvas.

A very simple premise but as with any Internet phenomenon, the canvas quickly began to fill with many different figures, writings and Internet references. Cooperation became vital due to the number of users on the platform and communities from the website gathered to create pixel art to represent their community on the canvas.

The site gained huge traction during its original 72-hour lifespan with many communities trying to out compete each other on the canvas.

/r/place has since been repeated twice, once on April 1, 2022, and once on July 20, 2023.

## 1.2 Remakes

Since then, there have been many clones and remakes of the website.

Examples include <https://rplace.live/> and <https://canv.tk/>

## 2 Deliverable

The plan is to initially recreate the basic functionality of /r/place with its core elements.

### 2.1 Features

The website's main functionality centers around the ability for users to view and modify squares on a single canvas. The server (the Flask backend) handles the requests of the users as a central hub and using Websocket, transmits the changes on the board to everyone viewing.

Following is a list of core features (must-haves):

Feature	Description	Reason
Canvas	Implement a pixel canvas that will display the current state	Main feature of the website
Websocket	Using websocket protocol to allow for real-time updates	Give users instant feedback on changes to the canvas

Table 1: Main features

### 2.2 Additional features

As for additional features (nice-to-haves), these could be considered once the main functions have been implemented

Feature	Description	Reason
Login system	System to track users	Potential personalisation
Timeout	Restrict canvas editing frequency	Reduce bot behavior

Table 2: Additional features

## 3 Navigation tree and wireframe

### 3.1 Navigation tree

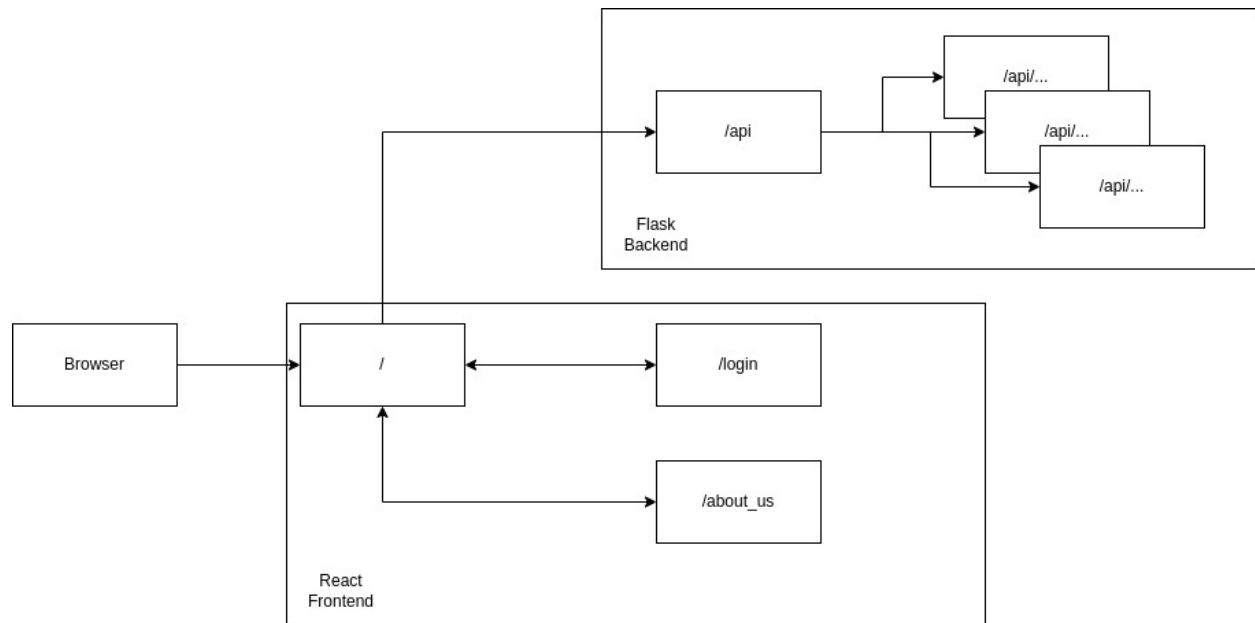


Figure 1: Navigation tree for single-page React application with Flask backend

The navigation tree for this application is as shown in 1.

Deciding between a single-page application (SPA) versus a multi-page application (MPA) came down to multiple concerns such as user experience and use case. SPAs allow the user to interact with the application without having to browse through pages for actions such as log-in.

### 3.2 Wireframe

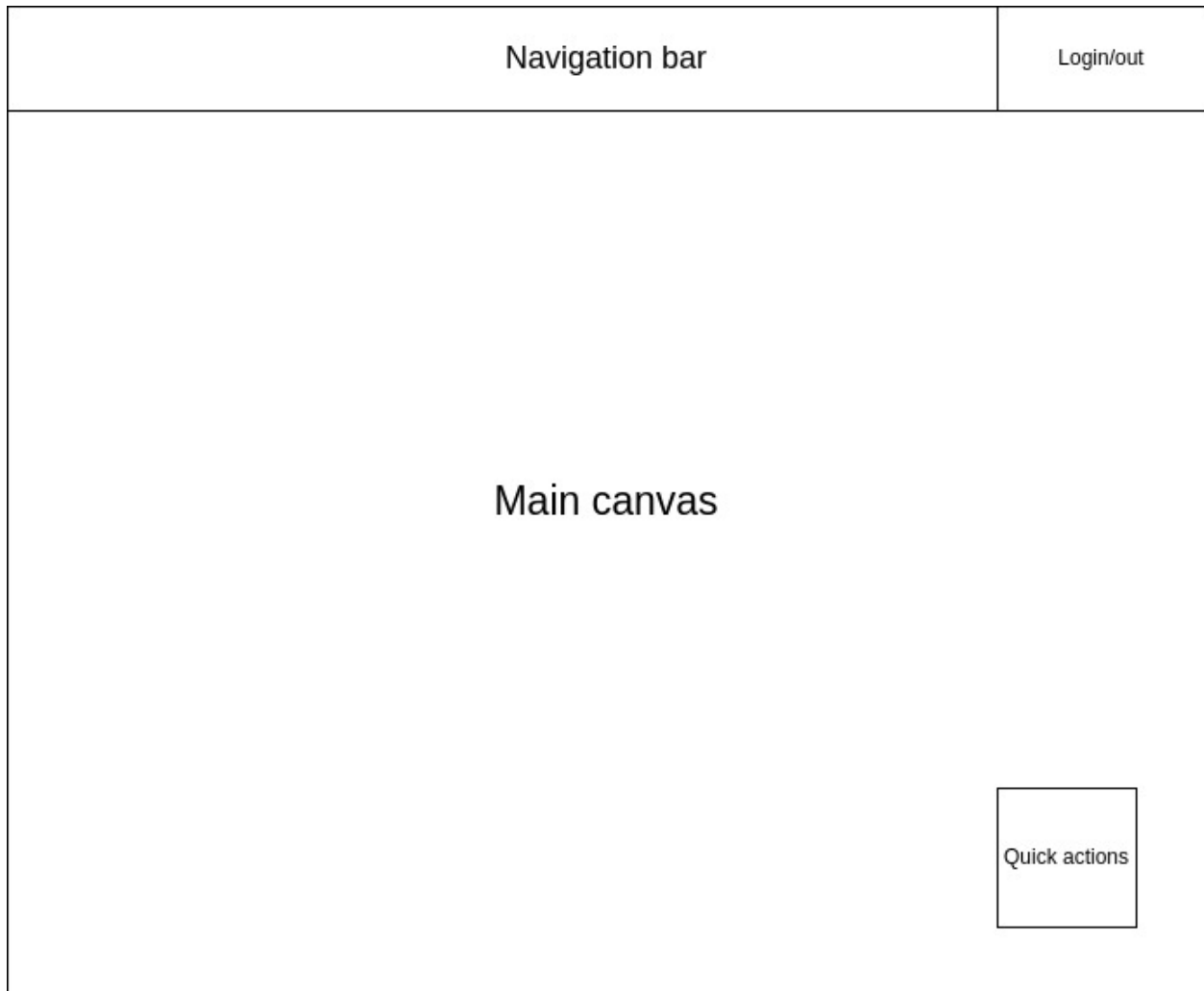


Figure 2: Wireframe for application

## 4 Research Spikes

### References

- [1] Albert Einstein. “Zur Elektrodynamik bewegter Körper. (German) [On the electrodynamics of moving bodies]”. In: *Annalen der Physik* 322.10 (1905), pp. 891–921. DOI: <http://dx.doi.org/10.1002/andp.19053221004>.
- [2] Paul Adrien Maurice Dirac. *The Principles of Quantum Mechanics*. International series of monographs on physics. Clarendon Press, 1981. ISBN: 9780198520115.

## A r/place canvas

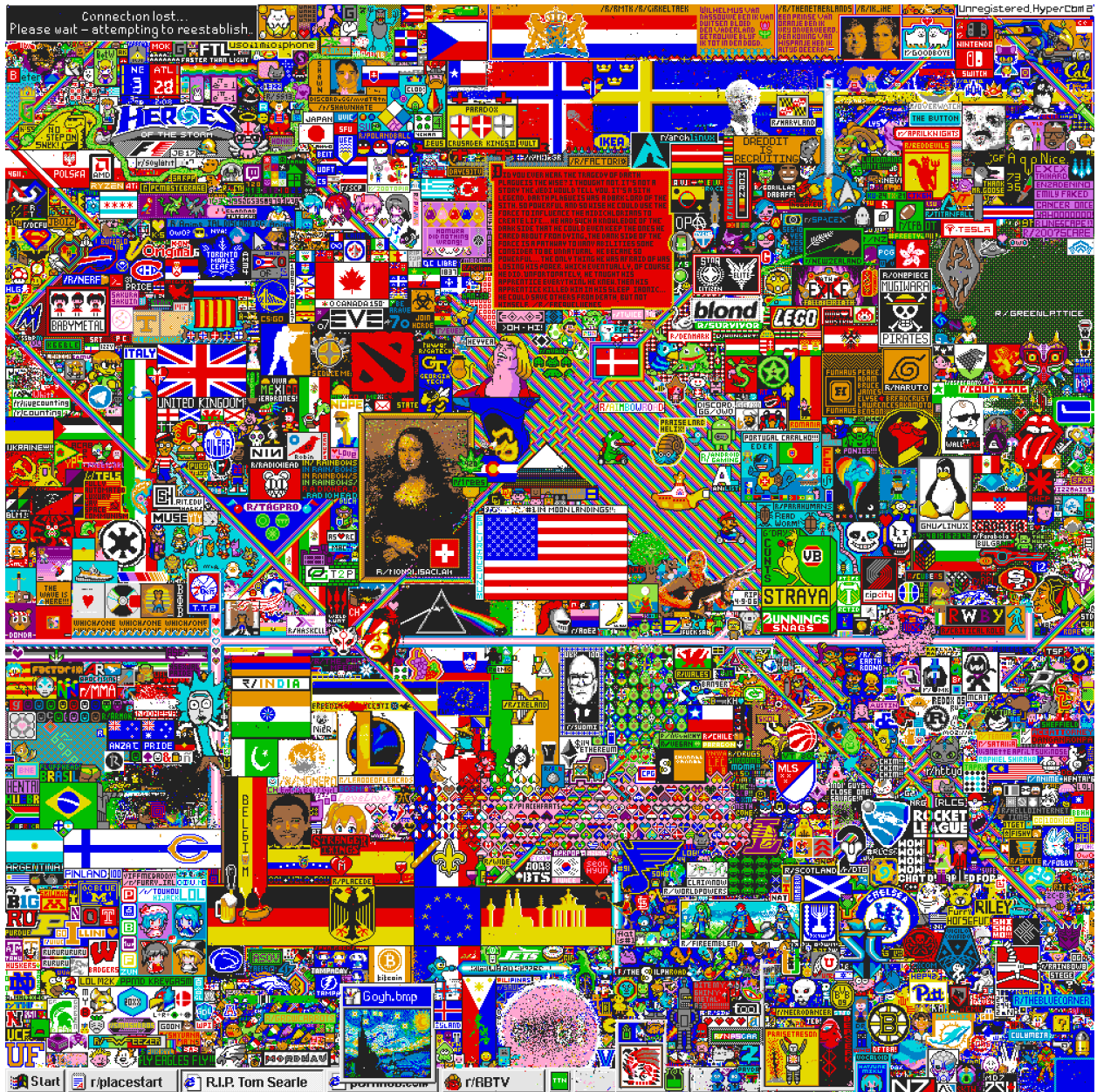


Figure 3: Final state of canvas in 2017